Cases and Materials on Patent Law

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Chapter One: Introduction

§1.1 Casebook Overview

- Overview: Patent system is basically a bargain: disclosure of technology to public in exchange for the right to exclude others from using it – useful because it encourages technological development in a distinctly American way; spread of this American system throughout the world is a testament to its success – Hank Morgan, English administrator: "the very first official thing I did… was to start a patent office; for I knew that a country without a patent office and good patent laws was just a crab, and couldn't travel any way but sideways or backwards" – patent policies demonstrate societal goals and priorities, and some basic Constitutional principles minimally changed over 200+ years
- Organization: Study focuses on current patent statute, enacted in 1952 (35 USC § 101 et seq) – since patent law is truly an international field, much of this text is comparative, and some is judgmental of differences between foreign and U.S. patent systems – also, historical development of patent law doctrines will be covered

§1.2 Foundations of the United States patent system

- U.S. Constitution: Article I, §8: Congress has the power "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries" – balances the rights of inventors over their inventions against the right of the public for freedom from unhelpful monopolies: patents must be for useful arts for limited duration, and Congress can't "remove knowledge from the public domain, or restrict free access to materials already available" (*Graham v. John Deere* (1966)) – it's incorrect to refer to any but the most general patent principles as "constitutional," since Constitution only granted Congress the power to establish a patent system but didn't specify how; rather, almost all patent principles are "statutory," but not "Constitutional" – some economists have suggested that in certain fields of technology, patents actually hinder progress; question is still open as to whether patents in these areas are actually "unconstitutional"
- Patent Act of 1790: First patent act – 14-year patent term, only for inventions that were "sufficiently useful and important" to warrant grant of monopoly – required inventor to submit a detailed specification and maybe a model to the "Commissioners for the promotion of Useful Arts" (Secretary of State, Secretary of War, and Attorney General; two of the three must authorize patent) – early system was championed by Thomas Jefferson, as Secretary of State
- Patent Act of 1793: This act introduced defenses to infringement: device was not invented by patentee, or device was described in a public work before patentee invented it –principles established by this patent act are still in use today

- Patent Act of 1842: Congress created design patent (35 USC §171) – protects an aesthetically pleasing design of an article of manufacture that is not solely dictated by functionality
- Novelty: is an important concept of patent law – embodied in 35 USC §102 – patent for non-novel invention not only fails to disclose new information, but actually takes that knowledge out of the public domain – thus, selling an unpatented invention acts as a complete bar to future patentability (*Pennock v. Dialogue*: patentee applied for patent for improvement to rubber hose after making selling over 13,000 feet of it – patent office refused patent, and Court affirmed) – the invention must be literally novel (invention is unpatentable "if its contours are so traced by the existing technology in the field that the 'improvement is the work of the skillful mechanic, not that of the inventor'" (inner quote from *Hotchkiss v. Greenwood*)) and also non-obvious (35 USC §103: unpatentable if "obvious at the time the invention was made to a person of ordinary skill in the art" – novelty and obviousness requirements codify the concept that patent system shouldn't unfairly intrude on public domain)
- Concealment: If inventor can keep his invention secret, he can bypass the patent system and use the device exclusively for as long as he can keep it secret – the patent system encourages disclosure of the invention for the public good by offering a 20-year monopoly (35 USC §154), as long as he can show that his invention is novel, nonobvious, and useful, and describe the "best mode" of performing the invention (35 USC §112)

§1.3 Origins of the Patent System

- First patent systems: No one nation is solely responsible for having created patent system – the origins of the U.S patent system arose in other countries, particularly England and Venice – earliest patent roots began with Germany's "water mine" system in 1300: use of land in the Alps for mining ore was granted exclusively to the person who first "invented" the ore site – eventually became enacted in "Constitutiones Juris Metallici" by King Wenceslaus II – as ore close to the surface became exhausted, miners had to develop water-drainage systems, and these developers were granted exclusive use of these galleries
- Venetian patent system: 1323: Johannes Teuthonicus promised to build sufficient grain mills to serve all of Venice; government promised to pay him if he built his mills – this is the first known privilege, although it was granted not for innovation, but for the utility of the mill, so it's not quite a patent – the minority view of the antecedents of the Venetian patent system: First known patent granted in 1409 by Germany to Henricus von Heslingen, for exclusive privilege to mine ore – this type of grant was later generalized as German statute, which Venetians later copied – Venetians then expanded concept into a general patent code in 1474, and then granted 120 patents based on this code – the majority view of the antecedents of the Venetian patent system: arose from Mediterranean guild system, which created a system for controlling its arts and crafts – inventors of improvements to the art had to get a license from the guild to infringe inventions on which improvement was based – this system was later codified into general patent system by Venetian Act of 1474, based on successful patent grant in Florence in 1421 – this system of protection was more arbitrary than modern patent systems – also, its purpose was slightly different than ours: patents granted not for new inventions, but

for exclusive use of *existing* inventions from foreign states, in order to facilitate import of technology into Venice – e.g.: John the German brought printing techniques to Venice in exchange for an exclusive right to print in Venice

- French patent system: Descendant of Venetian system – evolved as a registration system: no examination of application on its merits occurs before patent is granted – instead, all such issues are resolved by judiciary in enforcement cases – however, examination did occasionally occur via a crude system of referrals to the Royal Academy of Science, which certified inventions it found useful – also, French used a first-to-file system of priority
- Early English system: English crown used patent grants to grant exclusive licenses in certain areas (e.g., grant of monopoly to create playing cards) – however, judiciary and Parliament took this out of the Queen's control with the Statute of Monopolies: monopolies were limited to 14 years, and only for domestically unknown inventions – by limiting monopolies in such a way, the statute affirmatively *created* a patent system and promoted the import of foreign technologies – although British system would evolve separately from American system, England later signed into the European Patent Convention (EPC), which is modeled closely on the American patent system
- American colonial patents: First American patent granted in Massachusetts in 1641 to Samuel Winslow for manufacture of salt – many colonies offered rewards (not necessarily monopolies) for inventions – first American patent statute: Connecticut statute of 1672, forbidding monopolies except limited ones granted in exchange for new inventions – later South Carolina statute fixed term at 14 years – Maryland required all residents who built or used a spinning machine to pay Robert Lemmon a fixed sum, and later did the same for Oliver Evans's grain elevator (these aren't patents, more like a license system) – Evans later federally patented the elevator, and also obtained the first patent term extension by special act of Congress – Supreme Court later struck down a constitutional challenge to this congressional act (*Evans v. Jordan*), and then heard the first major patent case on this same invention (*Evans v. Eaton*) – finally, Pennsylvania allowed British patent holders to register their inventions here and then enforce them, and created a patent publication for this purpose
- Constitution and early patent laws: During constitutional conventions, James Madison and Charles Pickney proposed congressional power to encourage innovation by either granting monopolies or subsidizing inventors (Pickney is credited with the proposal, and he served on the committee that drafted the constitutional language) –constitutional language that creates patent system also creates copyright system: *not* intended to promote science, but rather the "useful arts"; drafters intended scientific discoveries to be protected by copyright (*In re Bergy*) – language also does not grant any rights at all to inventors, but merely empowers Congress to do so – Washington acted quickly to set up intellectual property laws (encouraged haste in "giving effectual encouragement, as well to the introduction of new and useful inventions from abroad, as to the exertions of skill and genius in producing them at home"), leading to Patent Acts of 1790 and 1793 – however, states continued granting patents after 1790, leading to a "transitional period" (most famous transitional period patents granted to Rumsey and Fitch for their steamship inventions) – only in mid-1800s was federal preemption of patent laws universally acknowledged; even Chief Justice Marshall refused to reach this conclusion in early 1800s

- Patent Act of 1836: Dropped registration system instituted by act of 1793 and went back to examination – also codified oath requirement , method of determining priority, and secrecy of applications – during the rest of this century, the Supreme Court looked favorably on patents and established doctrines of obviousness, enablement, and experimental use
- International patent protection: German patent system continued to develop during this period: examination system, but also first-to-file system for priority – ultra-competitive patenting occurred in chemical industries, especially dyes; discoverers of new reactions strove to file applications on the same day – Dutch and Swiss abolished patents temporarily – British maintained their patent system in the face of calls for a reward/grant system, thanks to Adam Smith, who pointed out that the inventor only really benefits if the invention is truly useful – international patent protection began with Paris Convention of 1883, later modified by Brussels Revision of 1900 – really began with international invention exhibitions around 1867; Americans refused to participate unless Germans granted their inventions provisional patent protection
- Historic development of U.S. patent law: 1930: Depression led to serious mistrust of patent monopolies in U.S. – courts began striking down patents as antitrust violations and created new standard for "inventiveness" (*Cuno Eng. Corp. v. The Automatic Devices Corp.*, 340 U.S. 147 (1950): "flash of creative genius" – however, Learned Hand called this test "fugitive, impalpable, wayward, and vague") – anti-patent sentiment became so serious that Justice Jackson said, "The only patent that is valid is one which this Court has not been able to get its hands on" (*Jungersen v. Ostby & Barton Corp.*, 335 U.S. 560 (1949)) – 1940s: World War II and its outcome rekindled U.S. innovation – led to patent reform and the Patent Act of 1952, which lowered inventiveness standard to anything more than what is obvious to a person "of ordinary skill in the art" – Supreme Court first affirmed this standard, but then shot itself in the foot by using language about a "synergistic result": *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969) – this led to confusion in patent law and inconsistent, unpredictable application of rules, which in turn led to forum shopping – these problems led to creation in 1982 of Court of Appeals for the Federal Circuit, one court to hear all patent appeals and produce a consistent body of patent law and policy; Fed.Cir. adopted precedents established by prior courts, and refined patent laws considerably – Fed.Cir. is a 12-judge panel; regular hearings involve three judges, which is insufficient to overturn precedent; only *en banc* hearing of all 12 Fed.Cir. judges can do that
- International patent law harmonization: In 1963, Strasbourg Convention required all European patent agencies to use a uniform system of patent classification – in 1973, European Patent Office was created; inventors can submit one application and obtain patent rights in many European countries, although countries retained their individual, national patent systems – in 1970, signatories to Paris Convention (including U.S.) created Patent Cooperation Treaty, which allows some prosecution of international applications to occur in one patent office and be used by other offices – NAFTA and TRIPS furthered unification of international patent laws according to U.S. patent practices: uniform standards for patentability; uniform patent term of 20 years; exclusionary rights of patent holders against citizens of other countries – harmonization will likely continue: World Intellectual Property Organization (WIPO) proposed "Patent

Law Treaty"; this failed, but efforts continue – another effort: Luxembourg Community Patent Convention (CPC): one patent system for all of Europe

§1.4 Forms of Patent Protection

- Types of patents: Utility patents are by far the most common type of patent; designed to cover useful inventions – design patents (35 USC §171) allow patents for ornamental designs of articles of manufacture – plant patents (35 USC §167) allow patents for asexually reproducing plants – "Plant Variety Protection Act" (PVPA) allows similar protection for sexually reproducing plants, but this is a completely separate body of law administered by Department of Agriculture; note that it's not exclusive of plant patenting the same invention

§1.5 The Nature and Function of the Patent System

- Incentive to innovate: Provides incentive to invest in research and development – innovation only really occurs when inventor can hope for a return on investment; this doesn't happen if competitors can copy the invention quickly, start selling it, and drive price down to barely-profitable levels – critics argue that the economic head start of being first to market with a new invention is reward enough to promote innovation; competition basically creates an arms-race scenario where competitors must innovate or perish – critics also argue that time pressure to develop patentable innovation causes inefficient waste of resources; monopoly incentive is too market-stifling and attractive, and market resources may be more efficiently spent in pursuits with returns limited by competition – finally, critics argue that patents interfere with closely related research in the same field, so they actually hinder progress
- Public disclosure: Promotes public disclosure of inventions; otherwise, inventors might keep innovation secret forever – critics argue that disclosure can also occur from reverse engineering; furthermore, for invention can be kept secret indefinitely, patents are disfavored because of their limited term – critics cite problems with detecting infringement: if invention can be used secretly by inventor, it could also be used secretly by infringer – finally, critics question whether disclosures are sufficiently enabling – proponents argue that IP transactions can't be negotiated otherwise: inventor must disclose invention to attract purchaser, but then inventor has nothing left to sell
- Effectiveness of the patent system: Technical change is important for economic growth, but it's unclear how much patent protection spurs technical change – comparisons between nations that use patent protection and nations that don't suggests little difference, but latter group may be free-riding – effect may be industry-specific (large impact on pharmaceuticals, small impact on chemicals), and patent protection may be unimportant for research decisions of large companies – however, it's clear that weakening patent protection would lead to greater reliance on secrecy
- Infrastructure investment: Inventions are useless without infrastructure to embody them in marketable products; exorbitant costs of infrastructure will only be spent if patents guarantee a return on investment – this is different from the other theories, which regard monopoly as a regrettable but necessary societal cost; under this theory, the monopoly directly results in production of the product
- Schumpeter theory: Economic progress occurs because new firms bring products with new technologies to market and outcompete old firms; this form of competition is a much

greater force of economic turnover than price competition in same products – however, this form of competition is too vicious; firms need more time and space to innovate, and insurance against losses – hence, development may spur the rise of larger firms because they're more stable – finally, investors only invest in innovation (rather than current uses of technology) if innovation offers a greater return, such as a monopoly

- Kitch theory: Kitch draws parallels between patent grants and mineral claims/"prospecting" in the Old West – same rationale applies to both practices: typically, public commodities are exploited too quickly and used up inefficiently; it's more efficient to allocate such resources as private property – although intellectual property isn't scarce like minerals, the idea that resources can be used more or less efficiently in utilizing the invention still holds – example: once an invention is patented, only the patent holder has the incentive to invest in its development into a viable product; this is more efficient than having many competitors spending resources to cover the same ground – also, public nature of patent disclosure means that patentees trying to develop inventions have an incentive to collaborate – furthermore, patents are granted at a relatively early stage of product development, and can extend to cover refinements of the invention/product, so patents contribute at every point to the development process
- Philosophical rationale: John Locke posits that people have equal rights over all things, except that they have greater right over "the labor of his body and the work of his hands," as long as any effort that depletes a public commodity leaves enough for everyone else – Hegel argued that property rights represent a public acknowledgement of human will, and that such acknowledgement must occur not only in physical objects, but in ideas and creative expression
- Other rationale for patent laws: "rent dissipation theory" and "race to invent theory" – also, considerable research has been conducted on the optimal length of patent protection

§1.6 Other Forms of Intellectual Property Protection

- Trademark: Lanham Act defines trademark as "any word, name, symbol, or device or any combination thereof adopted and used by a manufacturer or merchant to identify his goods and distinguish them from those manufactured or sold by others" – related concepts: trade names (used to describe a whole industry) and service marks – four classifications: generic ("bread', "sugar"; can never be a trademark), descriptive ("honey-baked ham"; only allowed if description has reached a certain level of distinctiveness), suggestive ("Skinvisible" for transparent medical adhesive tape; name does more than just describe the product), arbitrary ("Kodak"; name has nothing to do with the product, and may not even have a separate dictionary definition) – trademarks can never cover functional features of a product – infringement of trademarks depends on similarity between the marks, strength of trademark, consumer sophistication in the industry, magnitude of competition between the goods, intent of infringer in using infringing mark, and presence/absence of actual consumer confusion) – in U.S., trademarks may be registered, but can also manifest just by publicly using the mark – no set term of protection, but trademark may expire if abandoned or if it becomes the generic public term for the product ("aspirin")
- Copyright: Copyright law protects "original works of authorship fixed in a tangible medium of expression" – this includes computer programs – work must be "original" (created by author), but not necessarily "novel" as with patents – copyright manifests the

instant the work is set in the medium, and may optionally be registered – copyright protection enables owner to exclude others from using the protected work in certain ways, but protection is more limited than for patents; covers only the particular expression of the idea, not the idea itself – infringement requires showing that the defendant had access to the protected work, and that the defendant created a substantially similar expression – major affirmative defense: fair use (allows others to use portions of a copyrighted work, as long as it doesn't substantially reduce the potential market for the copyrighted work) – term of copyright: life of the author + 50 years

- Semiconductor chip protection: Semiconductors aren't copyrightable (not a work of authorship) or patentable (usually fail obviousness test, since they're the normal work of ordinary engineers) – Semiconductor Chip Protection Act of 1984 allows semiconductor designers to register their designs with the Copyright Office – protection extends for 10 years – however, this protection is not regularly used
- Trade secrets: Any information useful in operating business and sufficiently valuable and secret that it produces an economic advantage over competitors – trade secret is the primary alternative to patents – completely a common law creation; few federal statutes, and each state has its own laws, but they're substantially uniform, even internationally – two forces of harmonization: Restatement (Third) of Unfair Competition and the Uniform Trade Secrets Act – lasts as long as it's kept secret
- *Rockwell Graphic Systems, Inc. v. DEV Indus., Inc.* (1991): π manufactured printing presses – part of its business was selling replacement parts, and it kept the methods of creating these parts as trade secrets – it kept an archive of "piece part" drawings that described these methods, but guarded them carefully – Δ, formed by two former employees of π, manufactured the same replacement parts, though they should have been unable to figure out how to make them – π sued and found that DEV had over 100 "piece part" drawings in its possession; DEV claimed to have gotten them from outside vendors, and that π's secrecy of these documents was so sloppy that they weren't trade secrets any more – trial ct granted summary judgment for DEV – appellate ct found for π: critical issue was how carefully Rockwell guarded its trade secrets – π kept piece parts in a vault; allowed employees to see them only when necessary, and then only under confidentiality agreement – π occasionally gave copies of drawings to vendors for contracted-out manufacture of parts, but again only under confidentiality agreement – however, π didn't require vendors to return piece-part drawings after this; allowed them to keep the drawings if π wanted to renew contract – thus, many copies of piece-part drawings were floating around outside the company – trade secret infringement rests on two fact issues: 1) the method by which the infringer obtained secrets (reverse-engineering is OK, corporate espionage is not), and 2) the protective efforts taken by the trade secret owner, which suggest the value to the owner (only *reasonable* efforts required) – in only extreme cases can these issues be decided in summary judgment, and this isn't one of them: π took at least *some* measures to keep "piece part" drawings secret
- Notes on *Rockwell:* Efforts to maintain secrecy of trade secrets must only be "reasonable under the circumstances" – e.g., physically restricting access to information; nondisclosure and confidentiality agreements; "confidential" and "top secret" labels on written information – Economic Espionage Act of 1996: punishments include imprisonment, fines, and forfeiture of property; stiffer if beneficiary was a foreign agency

- Trade secret protection during government proceedings: Patent applications are kept secret, so merely filing an application does not invalidate trade secrecy, unless information is disclosed in patent process (now 18 months after application is filed: see American Inventors Protection Act) – some inventors try to patent some obviously discernible aspects of invention while keeping others as trade secrets, but this tactic risks patent invalidity – trade secret litigation might reveal the trade secrets in public documents; courts use protective orders to protect trade secrets – courts can also quash subpoenas and discovery requests that call for disclosure of trade secrets, but courts prefer to use protective orders
- Competitive advantage: Trade-secret information must be sufficiently valuable to benefit competitors – this fact issue is strengthened in favor of the trade-secret owner if the technique was costly to develop – interesting case: Scientology secrets were misappropriated; courts held that religious secrets can't be trade secrets, because churches aren't considered economic competitors (they're not-for-profit agencies!)
- *E.I. DuPont Denemours & Co. v. Christopher* (1970): πs built a new facility embodying trade secrets, and had it enclosed to protect trade secrets that could be determined by the plant orientation – Δs, hired by an unnamed party, flew a private plane over the plant and took aerial photographs with the intent to steal trade secrets – π sued for trade secret infringement, and Δs refused to divulge identity of their employer – appellate ct found for π: Δs argued that since they had taken photographs from public airspace, and had not committed trespass, they hadn't obtained the secrets by "improper means" as required by trade secret infringement law – however, "improper means" is to be interpreted broadly in light of the Texas Supreme Ct statement that "the undoubted tendency of the law has been to recognize and enforce higher standards of commercial morality in the business world" (*Hyde Corp. v. Huffines*) – although one can properly utilize a trade secret that was "obvious" or derived by "experimentation leading from known factors lying in the public domain to presently unknown results" (*Brown v. Fowler*), they cannot properly be obtained by "fraudulent misrepresentations to induce disclosures, tapping of telephone wires, eavesdropping or other espionage… a complete catalogue of improper means is not possible; in general they are mans which fall below the generally accepted standards of commercial morality and reasonable conduct" (*Restatement of Torts*) – reasonable protective measures are required, but it would be detrimental to require a trade secret owner to take such unreasonable precautions that the "spirit of inventiveness is diminished"; this result would occur if π were required to have fully enclosed the construction site in order to prevent this simple espionage – therefore, this can be considered "improper," or "devious under circumstances in which countervailing defenses are not reasonably available"
- Rules of acquisition: *DuPont* and other cases indicate that otherwise legal conduct can constitute trade secret misappropriation (*Drill Parts & Service Co. v. Joy Mfg. Co.* (1983): trade secret discovery via trash scavenging constitutes misappropriation; *Defiance Button Machine Co. v. C & C Metal Prods. Corp.* (1985): recovering data from computers sold by corporation without wiping hard drives does not constitute misappropriation
- Breach of confidence: *Restatement of Trade Secrets* §41 creates an implicit duty of confidentiality in certain circumstances (certainly present in employment relationship: see *Hyde Corp. v. Huffines* (1958))

- Remedies: Trade secret misappropriation claims can lead to both injunctions and damages, measured by the greater of π's loss and Δ's unfair gain – relevant factors: the nature of the appropriation, adequacy of remedies other than injunctions to protect π's interests, intent and knowledge of Δ in committing misappropriation, and misconduct or delay by π in bringing suit or mitigating damage
- *Kubik, Inc. v. Hull* (1974): π developed an improvement to a hydrostatic drive unit and sold several units – Δ accepted employment with π, and later forwarded engineering information about the improvement to a competitor – π asserted trade-secret violation; Δ countered that π had sold 22 units prior to his employment, and that the capability to discover the improvement through reverse engineering negated trade secret – π sought to enjoin Δ and Δ's company from selling any drives with the improvement – appellate ct found for π but denied injunction: although units were available, the parties agreed that it would be extremely difficult to obtain a unit from a customer for reverse-engineering, and that discovering the disclosed information might take up to four month of analysis – relief requires balancing equity (*Shellmar Products Co. v. Allen-Qualley Co.* (1936): inappropriate conduct justifies permanent injunction) vs. reluctance to grant injunctions if damages will suffice (*Conmar Prods. Corp. v. Universal Slide Fastener Corp.* (1949)) – the Conmar rule relies on the presumption that cts should be hesitant to order the permanent exclusion of a competitor from the market – additional factor (*Franke v. Wiltschek*): whether the invention is a novel, unpatented process that π could have used in secret for perpetuity, or whether the invention is "slight, non-patentable and easily discoverable," for which a permanent injunction constitutes "sheer punishment, nothing else" – here, competitors could have discovered the invention via fairly minimal effort, and an injunction "would prevent Δ from doing that which others in the field could lawfully due" – therefore, injunction denied; case remanded to trial ct for damages award – factors to be considered: amount of time, labor, and money in creating the improvement; lost profits; and degree of competition in the field
- Restatement: The rationale in *Kubik* of limiting the duration of an injunction to the minimum necessary to prevent harm is adopted by the Restatement
- Japan trade secret law: Japanese trade secrets must be disclosed in open court, and the court record is not sealed, so the process of litigation destroys the trade secret – legal reforms have been in the works, but have not solidified
- Prior user rights: Many countries (not including the U.S.) limit patent enforcement, such that those who invented and practiced the invention prior to the patentee's filing of a patent application can continue using it – of course, the U.S. does not permit this

§1.7 Federal Preemption

- Background: The constitutional grant to Congress of the right to issue patents is exclusive; states cannot issue patent-like rights in contravention of the federal patent system – *Sears, Roebuck & Co. v. Stiffel Co.* (1964): Supreme Ct vacated a state-enforced monopoly grant over a "designer" lamp of questionable patent eligibility – however, state laws for unrelated rights are OK; e.g., trade secret is purely a state-law matter – *Kewanee Oil Co. v. Bicron Corp.* (1974): Supreme Ct refused to vacate state trade-secret law protection for crystal-growing process protected by trade secret law – in upholding the statute, Supreme Ct held that the two systems are compatible, and applicable in different circumstances; thus, no overlap – the next case here, *Bonito Boats*, dealt with a Florida

statute granting monopoly protection for any novel design of a boat hull via a manufacturing technique called "plug molding"

- *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.* (1989): π created a distinctive design for the fiberglass hull of a boat, which Δ copied – π sued for an injunction under a Florida unfair competition statute specifically protecting the designs of vessel hulls for an unlimited term – Florida cts held that Florida statute was preempted by federal design patent scheme: "when an article is introduced into the public domain, only a patent can eliminate the inherent risk of competition and then but for a limited time" – Supreme Ct affirmed and found for Δ: the Constitution specifically grants Congress the right to protect the works of inventors and authors, and that right is limited to a fixed term – states cannot second-guess and contravene the balance struck by the federal patent system between the rights of inventors and of the public – as applied here, the Florida statute unduly compromises the rights of competitors – also, while unfair competition law is intended to protect the rights of consumers from deceptive trade practices by copying of nonfunctional features; this statute protects companies from competition by protecting a functional design feature – the functional effect of this statute is to deter reverse-engineering by competitors, which is a positive feature in patent law (encourages inventors to disclose their inventions and to develop the invention to the point of patentability) – also, the state statute disrupts the uniformity promoted by the federal patent scheme (e.g., conference of jurisdiction of all patent issues to the CAFC) – states may create restrictions that do not interfere with federal intellectual property law (e.g., regulating unpatented designs in order to prevent consumer confusion – see *Kewanee* – and state trade secret law); Congress has affirmatively recognized the coexistence of such state systems with federal laws – but it cannot overlap the realm of patent law to grant different rights to inventions
- Analysis of *Bonito Boats*: State unfair competition laws have retreated from this area in the wake of *Bonito Boats* – does this discourage any large capital investment if the product is unpatentable? – also, if the hull was unpatentable, does *Bonito Boats* conflict with the rationale of *Kewanee Oil* that the systems can coexist because they don't overlap?

Chapter Two: Patent Eligibility

- Background: "Patent eligibility" is defined as "subject matter open to patenting"; more liberal definition than "patentability," which includes novelty, nonobviousness, etc. – for the most part, this issue is long-settled: only for "the useful arts," meaning applied technologies (*Diamond v. Chakrabarty* (1980)); must be a tangible, practical result, not just a speculative or abstract mathematical concept (*Fuller v. Yentzler* (1877)) – even so, new technologies – including both software and biotech – pose new challenges to this standard
- Patent eligibility under the changing Patent Act: Few changes have occurred: "any useful art, manufacture, engine, machine or device, or any improvement therein" (1790) to "any new and useful art, machine, manufacture, or composition of matter" (1793) to "any new and useful process, machine, manufacture, or composition of matter, or improvement thereof" (1952 and current) – the new term "process" is defined as "a series of acts which are performed upon subject matter in order to produce a given result" (*Cochrane v.*

Deener (1877)) – these categories are not exclusive; one invention may fit several patentable classes (*Bandag, Inc. v. Al Bolser's Tire Stores, Inc.* (1984))

- Other Patent Acts: The original Statute of Monopolies only dealt with "manufactures" – the European Patent Convention does not create classes, but rather allows all but these excluded concepts: scientific theories, aesthetic inventions, mental acts (including games, business methods, and software), and raw information – 1971 Japanese Patent Statute: no articles of food or drink; no medicine, or product of any chemical process; no nuclear transformation concepts; and no "immoral" inventions; the more recent statute excludes only "immoral" inventions – developing nations often try to exclude some classes, especially pharmaceuticals, but have more recently decided to allow them in order to promote local drug development – some of this is standardized under TRIPS, but this agreement permits nations to exclude medical inventions

§2.1 Scientific Principles and Laws of Nature

- *Funk Brothers Seed Co. v. Kalo Inoculant Co.* (1948): Plants have been known to develop nodules of Rhizobium bacteria to help with nitrogen fixation, but different species of plants couple with specific species of Rhizobium, and a mixture usually inhibits all strains – π discovered some strains that worked well together, and started selling mixed packages for use in a wide variety of plants – π then patented the concept of mixing formations of intercompatible Rhizobium, and sued Δ for infringement trial ct invalidated π's patent; appellate ct reversed and upheld π's patent – Supreme Ct found for Δ and invalidated π's patent: the intercompatibility of Rhizobium species is a previously unknown property of nature; its discovery does not confer a monopoly to its use upon the discoverer – π's invention, therefore, consists of the aggregation of specific strains; the Rhizobium act exactly as they would have acted if isolated, and do not interact with each other – this is simply a marketing tool, with no benefit other than convenience – Frankfurter concurrence: the majority opinion places too much emphasis on the "law of nature" reasoning, since every process patent constitutes a use of the laws of nature for a new purpose – moreover, convenient aggregation is patentable subject matter, even without synergy (e.g., multipurpose tools and multivitamins) – thus, contrary to the majority, a new mixture of Rhizobium species that can be used on a wider variety of plants does constitute a new composition, which is patent eligible – however, π has not identified which species should be combined; he merely concocted a mixture with unknown but compatible strains and applied for a patent – thus, he has not properly identified the nature of his composition – moreover, π seeks a patent on the aggregation of any mixture of compatible Rhizobium species; this is equivalent to discovering one metal alloy, and then attempting to patent all possible metal alloys

§2.2 Processes

- Processes: Process inventions have been more difficult to analyze for patent eligibility than more tangible inventions (machines, compositions, manufactures) – the term extends from the interpretation of the Statute of Monopolies of 1623, but its meaning has never been pinned down
- *National Research Development Corporation's Application* (1961) (Australian case): π applied for a patent of using a herbicidal composition to kill weeds on land – examiner rejected application, claiming it was an intangible "process" devoid of patent eligibility –

ct allowed patent: π contends that his herbicidal composition is a "manufacture" if it can be used in a process that produces a new and useful physical result; the patent commissioner contends that "process" is only a vendible process, and that it excludes agricultural and horticultural methods – the Statute of Monopolies holds that patents should be upheld for processes that comprise "the working or making of any manner of new manufactures" (as long as no contrary to law, etc.) – thus, the issue isn't the precise meaning of the word "process," but the legislative intent in behind the Patent Act – "manufactures" is simply the descriptive term used for eligible subject matter of a patent, not the limitation on that category – by 1842, case law had established that "manufacture" includes both products and processes (includes "any new results of principles carried into practice… new processes in any art producing effects useful to the public" (*Boulton v. Bull* (1795)) – an additional question is whether that "effect" must be tangible, or merely useful – *R. v. Wheeler* (1819) answered thus: "something of a corporeal and substantial nature, something that can be made by man from the matters subjected to his art and skill, or at least some new mode of employing practically his art and skill, is requisite to satisfy this word" – one formulation, proposed in *Re G.E.C.'s Application* (1942), focuses on the "vendible product" descriptor, and only allows processes that pertain thereto; however, subsequent cases have criticized this test as too narrow – *The Cementation Case* (1945) upheld a patent on a technique of putting out subterranean fires; in so holding, the court liberally defined "product" as "that which is produced by any action, operation or work; a production; a result": thus, "product" merely means the result of the process – pivotal case: *Re Standard Oil Development Co.'s Application* (1951), which dealt with "a method for the production of an improved tract of arable land…" by killing weeds – ct denied patent, holding that the product did not produce any "vendible product" (crops are an indirect/downstream result); the "improvement" was in cultivation techniques, not the crops (though they may indirectly be improved); and that the only direct effect was on the weeds – the applicant separately argued that the arable land was the "vendible product"; ct rejected this, claiming that land was neither created nor improved (the soil, landscape, etc. weren't changed; only the weeds were affected) – yet, that logic does not comport with *The Cementation Case*, where subterranean land devoid of fires was a valid "product" – similarly, *Hall v. Jarvis* (1822) upheld a patent for a process of removing loose fibers from lace; how does that differ from arable land, given the same kind of improvement? – thus, π's patent must be upheld: the "product" on which the herbicide works is sown land, whose condition it improves; and it is "vendible" because it produces an economic advantage (better crop yield)

- *In re Tarczy-Hornoch* (1968): π applied for a patent on a "pulse sorting apparatus and method," i.e., a method of quantifying electrical pulses even at high rates (50,000,000 hertz); carried out by a multi-stage serial counting apparatus, where each stage both counts as many pulses as it can and adds in inhibitory pulses to nullify those it has counted, before passing it on to the next stage, which does the same thing – examiner allowed apparatus claims but rejected the method claim, asserting the "inherent function" doctrine (method claims aren't patentable if they merely describe how the device functions) – CCPA found for π, expressly vacating the "inherent function" doctrine: this doctrine is a legacy of 1800s precedent (e.g.: *Wyeth v. Stone* (1840): π claimed both an ice-cutting machine and the use of any such machine for cutting ice; ct denied method

claim by characterizing it as an "abstract principle broader than the invention" – *O'Reilly v. Morse* (1853): ct refused to extend Morse's telegraph patent to the process of telegraphing messages via electricity; ct held that improved machines relying on this concept, without using any part of Morse's machine, would not be developed if covered) – the definition of a process is clarified by *Corning v. Burden* (1853): "machine" includes every mechanical device and use of mechanical powers to achieve a result; "process" includes every use of chemical, substance-based, and natural powers to achieve a result – e.g., one who develops a machine to harden rubber via a known method is entitled to a machine patent; one who develops a technique for vulcanizing rubber is entitled to a process patent; but not the other way around – although the term "process" is often used more broadly, e.g. to describe an action without describing the operating principles and purpose of the action; but this is not how it's used in patent law – thus, a patent for a machine does not automatically confer a patent for the operation of the machine; it must be separately patentable – thus, a machine and its operating principles are neither automatically patentable together, nor mutually exclusive; each is considered on its own merits – because the "inherent function" doctrine seeks to impose an automatic mutual exclusivity, it must be vacated – Kirkpatrick dissent: the majority analysis is acceptable, but π's process invention does not demonstrate anything beyond merely satisfactory operation of a novel machine

- Common practice: Patent prosecutors ordinarily modify apparatus claims to produce method claims; e.g., take the claim language and replace a "screw" with "means for reliably attaching two elements" – it's questionable whether this practice would survive analysis under *Tarczy-Hornoch*
- *Exxon Chemical Patents, Inc. v. Lubrizol Corp.* (1995): π patented a chemical composition comprised of five components – π then attempted to assert patent against Δ, which had developed an end product that did not contain all five components, but that was created by using all five components – CAFC found for π: Δ's arguments misconstrue π's patent as applying only to the end product – there is no "temporal limitation" to π's composition claims; it is not solely considered at the end of the process – rather, π's patent covers any composition that incorporates each of the disclosed ingredients at any time in its creation or use – (note: Exxon may have been prevailed here by a mistake: it may have included prophetic claim language and hypothetical examples that were proven inaccurate by later experimentation; fortunately, the CAFC granted them an expansive reading of their patent that covered the actual chemical processes, including Lubrizol's developed method)
- Sports method patents: U.S. Patent No. 5,616,089 covers a "Method of Putting," claiming a technique for holding a putter that improves golf accuracy – this is a high-watermark patent in the debate over whether business method patents should be allowed under the Patent Act concept of "process"

§2.3 Computer Software

- Background: Patent applicants have long claimed software as a patent-eligible "process"; this tactic has strained the USPTO and the Federal Circuit in deciding whether to allow patent, copyright, or both for software
- *Gottschalk v. Benson* (1972): π applied for a patent for a method of converting binary-coded decimal (BCD) numbers into ordinary binary – this could be expressed as

software, and used on data stored in any format (electrical impulses, magnetic tape, drums, discs, charged spots on CRT, punched cards, etc.); π sought to include all of these within his novel algorithm – USPTO denied claim – Supreme Ct affirmed rejection of patent application: the dispute is illustrated by the formulation in *Mackay Co. v. Radio Corp.*: "while a scientific truth or the mathematical expression of it is not patentable, a novel and useful structure created with the aid of knowledge of scientific truth may be" – many follow-up cases (including *Kalo* and *Morse*) affirm the denial of patents claiming "abstract principles" or scientific principles outside of a specific use – here, the claimed process is completely arbitrary; might be applied in a very wide number of contexts, and not specialized for any one use – of particular relevance is *Cochrane v. Deener*, which considered an improvement to flour, consisting of separation of coarse and fine powder, removal of impurities from coarse powder by blasts of air, and recombination of constituent parts – Ct allowed this as a process claim, characterizing it as "a mode of treatment of certain materials to produce a given result… an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing" – although process patents are not limited to this, they do not extend to include a "mathematical formula with no substantial practical application" such as π's invention; allowing this patent would preempt the mathematical formula – this conclusion is supported by the findings of the President's Commission on the Patent System, which stated that software patents pose significant technological problems lacking clear resolutions

- "Mental steps doctrine": The *Gottschalk* Court's "nutshell" holding is that patents should not remove a mathematical formula from general use – a sizable portion of the logic behind the *Gottschalk* rejection is that the invention could have been carried out in one's head, or on paper –this "mental steps doctrine" is supported by many earlier cases facing the same general question – this doctrine had previously been repudiated in *In re Musgrave* (1970): "characterizing steps of method claims as 'mental' or 'physical' gave little certainty to the law"), but *Gottschalk* seems to have resurrected it
- Patent eligibility or overbreadth?: The *Gottschalk* Court placed much emphasis on the patentee's attempt to claim the use of the algorithm in any context, not just his envisioned use on a computer – however, this is not typically a factor in §101 analysis (patent-eligible subject matter), but rather in §112 (overbreadth, as part of an inadequate specification) – similarly, *In re Schrader* (1994) affirmed the rejection of a style of auction allowing bidders to bid on multiple items; CAFC emphasized the fact that "nothing physical" was occurring with the bids, they were just being conceptually organized, and that this auction style could take place in a very wide range of implementations (discussed in the claims but not the specification)
- *Parker v. Flook* (1978): π sought a patent for a "method of updating alarm limits" based on the monitoring of the progress of a catalytic conversion reaction – the claimed process consisted of (a) monitoring reaction parameters, (b) determining the proper alarm limits by a mathematical calculation, and (c) setting each of the alarm limits accordingly – examiner rejected application, but CCPA reversed – Supreme Ct affirmed rejection of application: "the process itself, not merely the mathematical algorithm, must be new and useful; the novelty of the mathematical algorithm is not a determining factor at all" – mathematical formulae are the tools of science, and do not qualify as part of patentable

technology – even though the invention has significant "post-solution activity" (language from previous considerations of this question), it is still purely abstract

- *Diamond v. Diehr* (1981): π sought a patent on a process of controlling the temperature of a rubber-curing furnace by using a computer programmed with the Arrhenius formula, a well-known mathematical equation – this improved the prior method of controlling the furnace by hand, which was much less accurate and very often produced under- and over-cured rubber – patent examiner rejected as being non-statutory subject matter, but in π's suit against commissioner of patents to appeal judgment, the Court of Customs and Patent Appeals reversed, noting that claims cannot be dismissed merely because they involve a computer – Supreme Ct affirmed verdict for π patentee: 35 USC §101 permits patenting of "any new or useful process, machine, manufacture, or composition of matter, or nay new and useful improvement thereof" – this wording in the 1952 Act replaced the word "art" with the word "process," thus broadening the degree of non-tangible inventions that can be patented; this broadening is further supported by the legislative intent that statutory subject matter includes "anything under the sun that is made by man" – "process" was further defined as "a mode of treatment of certain materials to produce a given result" (*Diamond v. Chakrabarty* (1980)), or as a "transformation and reduction of an article to a different sate or thing" (*Gottschalk v. Benson* (1972)) – π's claim is directed toward a process of curing synthetic rubber, and on that basis alone qualifies as statutory subject matter as a process – Δ contends that the reliance of the invention on a mathematical formula disqualifies it from protection – abstract principles and formulae are not patentable (*Parker v. Flook* (1978): denial of patent affirmed for invention consisting solely of an "alarm limit" formula; invention suggested no means of measuring the input data for the formula, and thus wasn't a "process") – however, π has not claimed only a formula, but a complete process for curing rubber, and *Parker v. Flook* acknowledges that "a process is not unpatentable simply because it contains a law of nature or a mathematical algorithm" – Δ contends that π's invention is the use of a well-known formula for a well-known process, but that combination is not *de facto* unpatentable, and this is a wholly separate issue from §101 qualification – thus, any process with a physical component cannot be rejected as unpatentable simply because that process consists of a computer calculating mathematical formulae
- Observations about *Diamond v. Diehr*: The majority opinion in *Diamond v. Diehr* emphasized the physical aspects of the invention, but it's not clear how this differentiates this patent-eligible algorithm from others – could a similar algorithm be patented for the process of baking a cake? – *Diamond v. Diehr* is also unusual in that it allowed a patent for the combination of many preexisting elements (Arrhenius equation, computerized method of conducting integral calculus, temperature-measuring devices, and a remotely-operated oven) – may raise some important questions for novelty analysis
- Federal Circuit reaction to *Diamond v. Diehr*: The CAFC was formed shortly after *Diehr* was decided – two of its earliest decisions dealt with similar issues: *In re Grams* (1989) considered a patent application for a method of testing a system for abnormalities; ct affirmed rejection, noting that the claimed algorithm could be applied to any system of data (hearkening back to *Gottschalk*) – *In re Iwahashi* (1989): considered a patent application for a pattern recognition technique, specifically suggested for voice recognition, based on algebraic manipulation of input data; ct reversed rejection and allowed patent, characterizing the algorithm as an "apparatus in the form of a

combination of interrelated means" – Rich concurrence advocated focusing on the details of each claim to make such distinctions (but no clear guidance given for delineating eligible vs. non-eligible claims)

- *Arrhythmia Research Technology, Inc. v. Corazonix Corp.* (1992): π created a heart monitor that detected ventricular tachycardia, which is a dangerous but treatable condition commonly following heart attack – the monitor does so by analyzing the cardiograph data via a mathematical algorithm (several claims were directed toward the method), and on this basis, the district ct affirmed the examiner's rejection of the invention – CAFC reversed: (ct reviews history of algorithm patents, including *Chakrabarty*, *Diamond v. Diehr*, *Gottschalk*, and *Parker v. Flook*) – in the course of these decisions, the courts have created the "Freeman-Walter-Abele" test, which asks if the invention as a whole is more than a mathematical algorithm – i.e., the algorithm must pertain to "physical elements or process steps" to attain patent eligibility; the emphasis is on the achieved result, not the steps performed – applying the Freeman-Walter-Abele test, π's invention is clearly eligible for a patent; the claims are drafted as a signal analysis technique, without reference to a particular algorithm to carry out the analysis – the technique consists of mathematical analysis of the signal via conventional electronics, but the steps of "converting," "applying," "determining," and "comparing" are physical processes that transform one electronic signal into another – the whole purpose of the invention is a diagnostic technique, which passes muster under the Freeman-Walter-Abele test – the claims do not transcend the disclosed subject matter (as per *O'Reilly v. Morse*, *Gottschalk*, or *Grams*), but have a specific and useful purpose – the apparatus claims, meanwhile, claims a novel combination of conventional electronic components (e.g., high-pass filters) that carry out the claimed method; as with the claimed process, the apparatus functions to convert one physical (electronic) signal to another in order to achieve a useful result – it's simply a circuit, and novel circuits are patentable – Δ argues that the end result is simply a number, but it's not simply an abstraction, but a measurement of heart activity with a diagnostic use – Rader concurrence: the majority opinion applies a still more complicated version of the rule in *Gottschalk v. Benson* that algorithms aren't patentable – rather than using this outdated analysis, this decision should be strictly based on the factors used in *Diamond v. Diehr*: this is a "process," and "processes" should be judged according to the standard conventions of patent law – quoting *Diamond v. Diehr*: "a claim drawn to subject matter otherwise statutory does not become nonstatutory because it uses a mathematical formula, computer program, or digital computer" – thus, no special rules should be applied to software
- "Means plus function" claims: The *Arrhythmia* claims were written using means-plus-function language (35 USC §112 ¶6) – this is relevant since hardware and software implementations of an algorithm are considered functionally equivalent and interchangeable ("a data-processing operation can be implemented by either a computer program or by means of special circuits, and the choice may have nothing to do with the inventive concept" (*Guidelines for Examination in the European Patent Office* (1994))) – thus, *Arrhythmia* presents a broad claim that "preempts" any use of the algorithm, yet it is upheld
- Medical discoveries: The patent statute explicitly excludes medical diagnostic and therapeutic techniques from patent eligibility, on the rationale that such techniques should immediately be deployed across the world – however, patent law is beginning to see

physicians as simply another kind of inventor worthy of remuneration; thus, a physician who hears a previously unidentified arrhythmia cannot patent his audible discovery, but a machine designed to detect the same arrhythmia can be broadly patented as a diagnostic apparatus

- Physical signals: At first, software patents were excluded under the mental steps doctrine – then, under the Freeman-Walter-Abele test (applied in *Arrhythmia*), software patents were allowed if they included physical steps: either relied on real-world inputs (e.g., sensors) or had a real-world output or effect (e.g., controlling a machine) – however, *Diamond v. Diehr* didn't apply this test, nor did *In re Alappat* below; both cases assumed that the electrical signal was the physical component imparting patentability on the algorithm – this liberal interpretation of the "physical step" requirement suggests its gradual abandonment
- *In re Alappat* (1994): π designed a rasterizer that conducted basic crude anti-aliasing on an oscilloscope signal – π filed a patent application for this technique, claimed in means-plus-function language, which the examiner rejected; a panel of the Board of Patent Appeals and Interferences allowed the claim, but an en banc hearing affirmed its rejection – CAFC found for π: π's application claims the rasterizer as a machine, which is clearly patent-eligible – the Board argued that the circuit nevertheless represents an algorithm, and this position is not without merit – in general, 35 USC §101 allows patents for "'any' new and useful process,…", implying a broad scope (*Diamond v. Chakrabarty* (1980): this language is intended to include "anything under the sun that is made by man") – however, the Supreme Ct has consistently held that "laws of nature, natural phenomena, and abstract ideas" are not patent-eligible (*Diamond v. Diehr*), and this includes mathematical algorithms – *Diehr* also encourages review of the claimed invention as a whole: if the mathematical algorithm is performing a function that the patent statute is intended to protect (including transformation of an article), then it is patent-eligible ("a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula, computer program, or digital computer" – here, the discrete parts of the invention perform very simple transformations, but the machine as a whole produces a concrete and specific transformation with a visible result – the preamble recites a specific purpose and use, and this is relevant for characterizing the invention as a "machine" rather than a mathematical principle – the Board's rejection rested on its finding that the claims "read on a general-purpose digital computer 'means' to perform various steps," but this would mean that no programmed general-purpose computer could constitute a patentable machine, which the Supreme Ct has consistently refused to hold – Archer dissent: the proper analysis focuses on whether the invention as a whole is "more than just a discovery in abstract mathematics" – Alappat's rasterizer is simply a technique for converting one kind of data into another kind of data – this is simple mathematics, cast as a circuit because mathematical concepts cannot be directly claimed – "what is going on here is a charade" – *Flook* should be applied to find that where "the calculations are the beginning and end of the claim," the invention is not patent-eligible – π's rasterizer can be used in any context for drawing lines, because it lacks any specific real-world application as was present in *Diamond v. Diehr* – one serious problem with allowing such mathematical algorithm patents is that §103 analysis is very difficult, because mathematics have been assumed not to be patent-eligible and no prior art database exists – therefore, the USPTO will have to draw a line between claims

for methods of calculating numbers in a computer (not patent-eligible) and machines comprising computers that calculate numbers (patent-eligible)

- Interchangeable hardware an software: *Alappat* recognized the interchangeability of hardware and software, and this factored into both the majority and dissenting opinions – according to the CCPA, a machine containing a new and useful program becomes a different machine altogether, and can be claimed this way
- Printed matter: Many prior cases held that software was simply "printed matter" (anything comprising "arrangements of printed lines or characters") that laid outside the bounds of the Patent Act (*see In re Rice* (1942)) – as per *In re Lowry* (1994), a better view is that these programs become components of the general-purpose machine, and that the "arrangements" are not strictly human-readable; therefore, the embedding of this code in a computer does not affect patentability
- PTO Guidelines: On June 1, 1995, in the wake of *In re Lowry,* the USPTO released its Guidelines for Computer Related Inventions, which directed examiners to approve Beauregard claims (those claiming software as code embedded on a tangible medium, like a floppy disk) – these guidelines also stated that a general-purpose computer containing a specific software program is a statutory "machine," that computer-readable media containing a program is a statutory "article of manufacture," and that a series of steps performed on a computer is a statutory "process" – however, it characterized as non-patent-eligible all arrangements of data, models of data structures, and processes that solely manipulate abstract ideas and concepts
- Patent eligibility of data structures: Three cases dealt with novel data structures: In *In re Warmerdam* (1994), the CAFC rejected a claim for a "method of generating a data structure which represents the shape of a physical object" – in *In re Lowry* (1994), the CAFC allowed a patent on a particular data structure used in a data-processing system (?), under the rationale that the data structure was embedded on a physical medium (memory) and thus comprised an article of manufacture – finally, in *In re Trovato* (1994), the CAFC rejected a patent on a data structure for a pathfinding algorithm applied to a model of real-world terrain (claimed either as a process or as an apparatus); the CAFC's rejection rested on a Freeman-Walter-Abele analysis, and alternatively upon the *Warmerdam* rationale that "abstract ideas" were not patentable – however, the public reaction to these decisions (suggesting completely unpredictable CAFC results) resulted in the CAFC's withdrawal of the *Trovato* holding – this suggested the final straw for the Freeman-Walter-Abele test, and this has borne out
- Difficulties examining software patents: *The Advisory Commission on Patent Law Reform* (1992) predicted that software patents would issue for clearly "obvious" inventions, due to the large amount of non-patent prior art in the area, and encouraged the development of a prior art database, an improved patent classification system, and the hiring of computer scientists as examiners – this concern manifested in the "Compton multimedia patent" (U.S. Patent No. 5,241,671 (1993)), which allowed a patent on CD-ROM search and retrieval technology, which the USPTO *sua sponte* reexamined and completely rejected
- Software patents abroad: The European Patent Convention explicitly prohibits patents for software in any form – however, as with the USPTO, the EPO has struggled with delineating technical processes from mathematical algorithms; e.g., 1987 OJ EPO 14 (1986) allowed a patent on a software image-processing technique – Japan is more

amenable to software patents, characterizing them as "highly advanced creations of technical ideas by which a law of nature is applied" (Japanese Patent Act Article 2(1)) – in practice, Japanese software patents are more limited to hardware drivers, while "information processing" techniques are considered ineligible

- *Sui generis* protection: In *Gottschalk*, the Supreme Ct called upon Congress to recognize the unique characteristics of software and to create a new kind of intellectual property protection for it – many such schemes have been proposed, including a registration system or a patent-like system with faster examination and a shorter term; however, any new form of protection would require decades of case-law refinement that would be ill-suited to the rapidly developing technology

§2.4 Biotechnology

- Background: Biotechnology advanced in the 1970s led to the creation of new living species (transgenics), which created a patent eligibility issue
- *Diamond v. Chakrabarty* (1980): π created a strain of bacteria with plasmids that enabled it to consume oil – π filed a patent application, claiming "a bacterium of the genus Pseudomonas containing therein at least two stable energy-generating plasmids,…", and the examiner rejected it as either a product of nature or simply a living thing outside the scope of the patent act – Supreme Ct reversed and found for π: Δ argues that until the legislative process affirmatively allows such patents, they must be denied – however, Congress has already spoken to this issue by authorizing patents broadly for "the Progress of Science and the useful Arts" – Congress's mandate is therefore broad, and contains no suggestion that unanticipated inventions are excluded until expressly allowed – Δ's characterization of π's invention as a "product of nature" does not flow from *Flook*, since this is a specific and concrete concept, not an abstract principle – Δ furthermore argues against promoting genetic research (producing a "parade of horribles"), but it is unlikely that allowing or denying patents will much affect this area, given how much has already occurred without clear patent eligibility – moreover, the appropriate body for hearing arguments about the wisdom of genetic research is Congress, which can amend the legislation (including the patent act); the Court's role is only to apply the law, and π's invention clearly falls within it – unless Congress changes the law, the courts must uphold such patents based on the law
- Impact of *Chakrabarty*: This decision is clearly at odds with *Funk Brothers*, and probably overrules the earlier holding – as a result of *Chakrabarty*, inventors applied for many patents for new organisms, including mammals and polyploidy oysters – the CAFC had an opportunity to reconsider *Chakrabarty* in a suit brought by the ASPCA, but declined to hear the case, refusing to decide based on ethical or economic competition grounds; instead, the CAFC broadly ruled that this was simply a matter of law
- European patents on biotechnology: The German patent system first approved biotechnology patents (in the abstract) in a 1969 case, though it denied the patent at issue as unsupported by consistent results – a 1975 case later affirmed patent eligibility by allowing a patent for a strain of baking yeast – however, the European system as a whole was hampered by treaties from the European Patent Convention, which prohibited patents for "plant or animal varieties or essential biological processes" – the debate began in earnest after the following opinion, and continues today

- *In re President and Fellows of Harvard College* (1992) (written opinion of European examiner): π developed a new strain of mouse that served as a cancer model – the USPTO allowed π's patent application for the mouse, but the EPO rejected it due to lack of patent eligibility and insufficiency of disclosure – the European Board ordered the examiner to consider whether the mouse fell within the defined term "animal variety" that was excluded from patent eligibility – the examiner maintained the rejection, holding that "animal variety" means "animal species," and π's application facially claims a class of animals (mammals, rodents, etc.) that is even broader than an animal species – the application also raises a question of morality, leading to a balancing of the humanitarian benefit of the invention vs. genetic harm to the environment and cruelty to animals – this technology clearly benefits mankind by promoting cancer research; it actually reduces animal harm by requiring many fewer animals to be used in the research; and its environmental impact is nil because the animals will never be released – thus, the invention cannot be considered immoral or contrary to public interest and should be allowed
- Reaction to biotechnology patents: The EPO sought to distinguish "essentially biological processes" from "microbiological processes," but this proved technically impossible – the U.S. attempted to call for a moratorium to consider the moral issues, but this effort failed – the National Council of Churches has attempted to block biotechnology patents on the grounds that they contravene mankind's duty to protect life

§2.5 Methods of Medical Treatment

- *Anaesthetic Supplies Pty Ltd. v. Rescare Ltd.* (1994) (Australian case): π obtained a patent for a nosepiece deigned to treat obstructive sleep apnea, which causes loud snoring and occasional death from choking – Δ, accused of infringement, objected to the patent on the grounds that (a) medical inventions are "non-economic" and thus do not fall within the Australian Patent Act, and (b) it would be "generally inconvenient" to allow patents for medical treatment devices – trial ct found for π, rejecting these arguments because medical inventions are still a "vendible product," and because of the difficulty in distinguishing medical devices from pharmaceuticals – federal ct found for π: a survey of the law of medical innovation in several countries is conducted: in Australia, the "vendible product" criterion has been broadened to allow patents for all processes with "commercial application" – this included a technique for cosmetic treatment of hair and nails, on which the High Court in NRDC allowed; however, the Court sharply distinguished surgical techniques as not patent eligible, holding that "a process for the treatment of the human body as a means of curing or preventing a disease, correcting a malfunction, or ameliorating an incapacity" could not be patented – New Zealand similarly rejects patents for technologies designed to treat human illness; while pharmaceuticals should be allowed (as with the novel use of a known composition for the treatment of a condition), "the art of the physician and surgeon does not belong to the area of economic endeavour" – the U.K. categorically excludes techniques for treating disease from the patent-eligible class of "manners of manufacture"; English courts refused not only a method of detoxifying patients suffering from lead poisoning, but also an application by Eli Lilly for a compound with anti-inflammatory qualities – its legislature has recently considered allowing patents on novel compositions for medical treatment (but not for known compositions with novel properties), but continues to

exclude patents for surgical techniques – this consideration suggests that perhaps practitioners would be immune to patent infringement claims, but that suppliers may be held liable – in Canada, substances used on the human body are largely excluded from patent eligibility – the U.S. takes a broader view, allowing patents for both novel compositions and known compositions with newly-observed properties; even process claims are now patent-eligible, including diagnosis and treatment processes – Germany allows patents for novel therapeutic uses of known compounds, but not to the known compounds; Israel takes a similar view – overall finding: medical research is to be promoted, and the standard reward is a patent; much of the opposition is based on poorly-articulated ethics rather than logic – if the "vendible product" requirement can be avoided, there is no logical rationale to distinguishing cosmetic products and therapeutic products, or distinguishing therapeutic products and therapeutic methods – this will promote research and development of new therapeutic methods of all kinds – Sheppard dissent: patents on medical techniques, including π's, contravene the general style of academic research and medical innovation, and qualify as "generally inconvenient" by granting a small set of practitioners an exclusive right to a particular therapeutic capability – Wilcox concurrence: there is no indication that the Australian Parliament has excluded medical therapeutic techniques from patentability, so the finding should be based on the expansive reading of the Australian Patent Act

- Notes: The trend of patenting medical techniques in the U.S. led the AMA to condemn the practice – on September 30, 1996, Congress passed 35 USC §287(c), which granted medical practitioners immunity from patent infringement of diagnostic and therapeutic methods – however, this exemption does not extend to the use of patented machines, apparatuses, and compositions of matter, or the practice of biotechnology processes that do not qualify as "medical activity"

Chapter Three: Utility

- Background: 35 USC §101 requires inventions to be "useful" to be patentable – this is mostly a formal requirement; few patent applications draw a §101 rejection – it's also covered by §112 ¶1, under the assumption that the invention is useful but the inventor has poorly described it

§3.1 Origins of the Utility Requirement

- Standard: As articulated by Justice Story (*Lowell v. Lewis* (1817)), utility is defined as "not frivolous or injurious to the well-being, good policy, or sound morals of society" – the invention need not be more useful than the prior art; it simply must be *different* from the prior art (which is handled by the concepts of novelty and nonobviousness) – a more affirmative definition (also from *Lowell v. Lewis*) is "may be applied to a beneficial use in society" – examples of inventions that are not "useful": "a mere curiosity, a scientific process exciting wonder yet not producing physical results, or a frivolous or trifling article not aiding in the progress nor increasing the possession of the human race" – patent applications rejected as not "useful": *Rickard v. Du Bon* (1900): invention useful for making cigar wrappers that resembled better-quality cigars (fraud, unfair competition); *Newman v. Quigg* (1989): perpetual motion machine – however, *Chicago Patent Corp. v. Genco* (1941): dispute over patent for pinball machine; Δ objected that it

was used primarily in gambling, but ct allowed patent because the invention could have a legitimate use

§3.2 Chemical Utility

- Background: Most utility rejections arise in the context of a chemistry invention (because many such inventions are serendipitously synthesized, rather than being engineered)
- *Brenner v. Manson* (1966): π (Manson) developed a new chemical process for synthesizing steroids, but did not realize its utility – before π filed his patent application, another scientist (Ringold) invented and published an article describing the process and its utility – π then filed a patent application with affidavits swearing behind the Ringold article – examiner rejected application on the basis of priority, but Board of Appeals reversed – Supreme Ct found against π: the question here is the patentability of π's process of creating a known but (as it appeared at the time) useless set of compounds – though the requirement of utility is well-settled, the CCPA has been more liberal in its evaluation of patent novelty – here, π presented affidavits by other scientists that some homologues of those created by his process had anti-tumor properties; the USPTO found this inadequate because of the considerable functional behavior differences among chemical homologues – π also argues that his process is useful because (a) it works, and (b) its products are now a focus of study, and π buttresses these arguments with a narrow definition of "useful" as meaning "not harmful" – however, "useful" also includes "frivolous and insignificant," and allowing patents on such inventions needlessly encumbers the field of chemistry – patents should be reserved for cases where the inventor can point out specific benefits, not simply for materials that are employed solely in "use-testing" or processes of creating them – Harlan dissent: π's argument is basically that his invention is useful because it exists; this is too expansive a reading of the utility requirement – however, the majority's many reasons for rejecting π's patent are unpersuasive: the use of π's materials in "use testing" is *prima facie* utility – moreover, π's process claims must be evaluated separately from the composition claims (which would have been denied for lack of novelty) – the majority decision may have a chilling effect on chemistry research, and in fact it deviates from traditional standards of patentability, which allowed patents for novel compositions in the absence of a specific end use
- Utility under *Brenner v. Manson*: The holding in this case basically destroyed all commercial value in Manson's discovery, since Ringold had openly published a broader and much more useful process – it also raised questions about the threshold of specificity for the specification – this also raises questions about the patent protection afforded to materials that are later shown to have novel properties; are these covered by the original patent? – it's questionable whether *Brenner v. Manson* still stands in light of recent cases (*Custom accessories v. Jeffrey-Allan Industries, Inc.* (1986): usefulness does not imply "improvement"; indeed, the invention may be less useful than other methods but still pass the threshold of utility)
- Pharmaceutical testing: Such testing ordinarily occurs in three stages: design and discovery, *in vitro* testing, and *in vivo* testing – where along the timeline of this research does the drug candidate demonstrate sufficient utility to impart patentability? – drug companies ordinarily seek protection as early as possible in order to maximize the investment return, so this is a frequent scenario for usefulness disputes

§3.3 The Utility Requirement at the Federal Circuit

- *In re Brana* (1995): π developed a modification of antitumor compounds (asymmetric substitution of a few groups at a particular alkyl group) that provided "better action and a better action spectrum as antitumor substances" – π reached this conclusion via computer-assisted evaluation (simulated interaction with two lymphocytic leukemia tumor models), followed by in vivo testing by the National Cancer Institute, which concluded that the compounds "had a good action" – π then filed a patent application claiming the modification as an improved cancer therapeutic in humans – the examiner rejected the application as an obvious modification of a prior patent claiming the same compound with symmetric substitutions – π asserted that the asymmetric substitution produced unexpectedly strong antitumor effectiveness, but the examiner maintained that π had not met 35 USC §112 ¶1 by not proving usefulness against a particular disease with adequate test results – Board affirmed rejection – CAFC found for π: the rejections purportedly rest on both §101 (lack of utility) and §112 ¶1 (inadequate specification) – in support of the §101 rejection, the Board cites *In re Kirk* (1967), which affirmed the rejection of an application simply claiming that a class of compounds had "high biological activity" (without any obvious meaning in the field of the art); however, the present case differs by characterizing the compound as an antitumor substance, and more specifically for treating lymphocytic leukemia – the Board asserts that these tests show effectiveness against the models, not the actual diseases; however, imposing such a stringent requirement on utility for antitumor drugs would be prohibitively difficult, given the long development cycle of the drugs (and relative rarity of many such cancers) – the applicant is not required to prove utility in humans; this is a requirement of FDA approval, not patentability, and such a strict test would significantly slow cancer research – utility is ordinarily presumed unless one of ordinary skill in the art would dispute the credibility of the applicant's claim; the USPTO has not overcome this presumption
- Utility bar: Commentators criticized the USPTO's high utility bar for biotechnology patent applications, and welcomed *In re Brana* as a boon to cancer research – this opinion demonstrates the CAFC's liberal view of the requirement, which even the USPTO apparently acknowledged (Examination Guidelines for the Utility Requirement (1995): "if the applicant has asserted that the claimed invention is useful for any particular purpose, and that assertion would be considered credible by a person of ordinary skill in the art, do not impose a rejection based on lack of utility") – any such rejection will ordinarily occur as a combined §101/§112 ¶1 rejection, and must include a *prima facie* argument for the rejection – the EPO substitutes the term "industrial applicability" for "utility," and requires applicants to relate their inventions to some industry (though this is broadly interpreted)

Chapter Four: Novelty: Statutory Bar

- §102: This section sets forth several requirements for novelty, in the form of blocking factors:
  (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent; or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States; or
(c) the inventor abandoned the invention; or
(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States; or
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent; or
(f) he did not himself invent the subject matter sought to be patented; or
(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

These requirements can be grouped into three categories: the concept of novelty (a, e, and g), which attach to the conception date; the "statutory bars" (b and d), which attach to the filing date; and other requirements (c (abandonment) and f (true inventorship)) – the U.S. is unusual in allowing a "first-to-invent" system; other countries have a "first-to-file" system, which creates a race to the patent office

- §102 analysis: The issues raised by this section require a two-step analysis: (a) what prior art references are relevant? (b) do those references destroy novelty?

§4.1 The Statutory Bars Under United States Law

- The §102(b) "grace period": The publication of an invention initiates a one-year "grace period," which upon expiration prohibits all later-filed patent applications for the invention – the EPO and JPO offer no such grace period; publication imposes an immediate patentability bar – Canada offers a hybrid system, where disclosure by the inventor (or anyone who learns the invention from him) creates a one-year period, but disclosure by any unaffiliated party is an immediate bar – the different "grace period" allowances fundamentally change the patent system in each country; §102(b) is more important in the U.S., which grants the inventor some leeway to use the invention before patenting, without allowing him to do so indefinitely – §102(b) also affords some certainty to patent examination by prohibiting people from warehousing technologies that can later be used as prior-art references

§4.2[a] Applicant Activities - §102(b) – "Public Use"

- *Pennock v. Dialogue* (1829): in a trial over the patentability of a method of making leather tubes and hoses (other facts omitted), π objected to ct's jury instruction that "if an inventor makes his discovery public, looks on and permits others freely to use it, without objection or assertion of claim to the invention, he abandons the inchoate right to the exclusive use of the invention, to which a patent would have entitled him had it been

applied for before such use" – Supreme Ct approved instruction: this stems from the constitutional mandate that Congress grant patents "for limited times"; this would be violated if an inventor could publicly practice an invention and much later decide he wanted to patent it – this requirement is also related to the statute of limitations, though the operation of each differs – even more importantly, this concept stems from the requirement that patents be "new" in light of what was known before; past a certain point, public use creates public knowledge that works against all patent applicants claiming the knowledge – holding otherwise would violate the goal of the patent system to "promote the progress of useful arts" by tying up public knowledge with potential patent claims – the same rationale prompted the inclusion of this provision in the English statute of monopolies (patentable inventions "must be of such manufactures, which any other at the time of making such letters patent did not use") – this provision was included in the 1800 revision of the 1793 Act: "every patent which shall afterwards appear had been known or used previous to such application for a patent, shall be void" – π disputes the application of this principle to a disclosure by the patent applicant, but this applies regardless of the identity of the discloser; the sole factor is whether the knowledge was part of the public domain

- *Egbert v. Lippman* (1881): π invented an improved set of corset-springs in response to a friend's complaint about the common type of springs – in 1855, π manufactured two sets of springs and gave them to his friend, who wore them in several corsets for many years – in 1863, π demonstrated the corset springs to another witness and explained how they worked – in 1866, π filed for a patent application, averring that the invention had not been in public use or on sale for more than two years – in a later dispute over the patent, trial ct invalidated the patent, citing the prior use as a violation of §102(b) – Supreme Ct affirmed invalidation of π's patent: an invalidating public use can be of a single item before a single person – the public use might not be invalidating if the operative concept is obscured during its use, and cannot be reverse-engineered; or, if it is a limited use solely for experimental testing – however, π's invention has an obvious working principle, which (a) π allowed to be publicly used for 11 years and (b) explained to another, not for the purpose of testing, and without any kind of confidentiality; these uses invalidate π's patent – Miller dissent: the "public use" here was conducted by embedding the springs within undergarments, such that the springs were not visible to the public – confidentiality is implicit in such circumstances; π need not have sworn his friend to secrecy over such use
- Similar case distinguished from *Egbert*: *Moleculon Research Corp. v. CBS, Inc.* (1986): π invented a cube puzzle and showed a prototype to some coworkers and his boss – twelve years later, π assigned the rights to his employer, which obtained a patent; an accused infringer later raised a public-use defense – Supreme Ct refused to invalidate π's patent: π had retained control over the prototype at all times, and had only shown it to some personal relations; confidentiality and privacy are inferred from the circumstances, thereby distinguishing this case from *Egbert*
- *Metallizing Engineering Co. v. Kenyon Bearing & Auto Parts* (1946): π developed a method of roughening metal surfaces (in order to improve its bonding to a sprayed-on molten metal coating) by using a modification of an industrial machine – π used the method in commerce, but secretly, for several years before applying for a patent – Δ, accused infringer, later raised this prior use as an invalidating factor; trial ct held the use

commercial but secret – appellate ct reversed and invalidated patent: although trial ct properly relied on previous appellate ct decisions, those decisions must now be vacated, and a different result reached – older decisions: *Macbeth-Evans Glass Co. v. General Electric Co.*, and also *Allinson Mfg. Co. v. Ideal Filter Co.*: patents for methods of making industrial products invalidated based on π's sale of the products for many years before filing for the patent; in both cases, trial ct construed the delay as either evidence of an intention to abandon the invention, or an intentional abandonment – this ct reached similar conclusions in *Gillman v. Stern*, invalidating a method-of-producing patent on the basis of prior sale of the product, even though the invention was not discernible from the product – this holding is at odds with *Peerless Roll Leaf Co. v. Griffon & Sons*, which upheld a patent under the same circumstances – however, *Peerless Roll Leaf Co.* is expressly vacated – new test: even a private use of a method can be barred from patentability by the sale of products that are made by the process but do not inform others of it – this use does not constitute abandonment, but does constitute forfeiture, due to the violation of the standards created by the patent act

- Reaction to *Metallizing Engineering*: This ruling apparently holds that a secret use can be rendered "public" by some indirect circumstances – this is an odd result, but the CAFC adopted it in *D.L. Auld Co. v. Chroma Graphics Corp.* (1983) (holding that "where a method is kept secret, and remains secret after a sale of the product of the method, that sale will not bar another inventor from the grant of a patent on that method"; but that the same sale carried out by the patent applicant serves to begin the one-year grace period under §102(b))
- *City of Elizabeth v. American Nicholson Pavement Co.* (1877): π invented an improved method of building durable roads by underlaying blocks of wood, either transversely or in a checkerboard pattern – π built such a road and used it heavily for seven years, constantly checking its condition, before filing for and obtaining a patent – Δ, an accused infringer, contested patent validity due to this public use – Supreme Ct upheld patent and found for π: this is a classic example of non-invalidating public experimentation – where an invention requires public use to demonstrate effectiveness, that testing will not preempt patentability – even if the invention is publicly used (though obscured) to manufacture commercial goods, the use will not invalidate a subsequent patent application if it appears sufficiently experimental – a road is the kind of invention that can only be adequately tested by heavy public use; π's diligent inspection countermands any inference of abandonment – π maintained control as best he could, and did not permit others to use the method or explain it to them – though the experimental use created "public knowledge" of the invention, it did not create a "public use or sale" as defined by patent law – π's delay in filing a patent application did not create an undue advantage or unfair extension of his patent term; it is a bona fide experimental use
- Experimental use: *City of Elizabeth* is factually similar to *Pennock v. Dialogue*, but the cases reached different results, thereby creating ambiguity (*see also, TP Laboratories, Inc. v. Professional Positioners, Inc.* (1984) dealt with the experimental use of a dental appliance over which the inventor kept only "scanty" records; trial ct imposed a "heavy burden of proof on the patent owner to prove that the inventor's use had been experimental" – CAFC upheld the patent, finding that testing for this invention had to be public) – though the CAFC purports to require experimental testing only of features claimed in the patent application, it has also allowed patenting after some experimental

testing of the operative concept (*Grain Processing Corp. v. American Maize-Products Co.* (1988)), and also for testing utility/efficacy (*Scott v. Finney* (1994)) – however, market testing for consumer satisfaction is "commercial," not "experimental" (*In re Smith* (1983): CAFC refused to view as "experimental use" the patentee's prior video presentations of a carpet deodorizer and distribution of samples to consumers)

- *Lough v. Brunswick Corp.* (1996): π developed an improvement to the sealing mechanism of an outboard stern motor that reduced a common type of corrosion – π assembled several such seals and installed them on his boat, his friend's boat, and those of several friends at a marina – more than a year later, π filed for and received a patent, and attempted to assert it against Δ – trial ct found for π, declining Δ's arguments that π's prior use constituted an invalidating public use – CAFC reversed and invalidated π's patent: "public use" includes "any use of the invention by a person other than the inventor who is under no limitation, restriction, or obligation of secrecy to the inventor" (*In re Smith* (1983)), and this question is resolved by looking at the totality of the circumstances (*Tone Bros. v. Sysco Corp.* (1994) – the policies favoring invalidation on this basis include preventing withdrawal of abandoned technologies from the public domain, encouraging early filing of patent applications, and allowing a reasonable but limited amount of time for the inventor to exploit the invention before deciding to patent it – π argues that these uses were "experimental," which is defined as the use of an invention by the inventor himself, or of any other person under his direction, in order to bring the invention to perfection" (*City of Elizabeth*) – relevant evidence for characterizing a public use as experimental or commercial: the duration and nature of testing, the records kept of the tests, the existence or absence of secrecy agreements between the inventor and others, any profits received by the patentee while conducting the testing, and (most importantly) the degree of control maintained by the inventor, including the existence or absence of an experimental framework and methodology – all of these facts erode π's "experimental use" argument: π maintained no control, kept no records, didn't even enquire about his friends' uses of the seals (one of the boats was even sold to an outside party), etc. – π's argument rests solely on his subjective assertion of his intention, which "is generally of minimal value" – this device is not amenable to the *City of Elizabeth* rationale that it can only be tested in public, and so is not entitled to a presumption of experimental use – Plager dissent: some of these requirements should be relaxed in cases like π's, involving a sole inventor who is completely unfamiliar with the patent system and experimental methodology – because reasonable minds can differ, the majority is incorrect to reverse via JNOV
- *Lough v. Brunswick Corp.* (1997): (This opinion issues from a request for an *en banc* rehearing of the previous panel case; ct denied en banc rehearing, but several judges filed dissents): Rader dissent: the majority decision gave no weight to the jury finding below, and (as Plager noted) the circumstances are not so stark as to justify a JNOV reversal – the panel baselessly characterized this matter as a judgment of law instead of a factual issue, as required by *Manville Sales Corp. v. Paramount Systems, Inc.* (1990), and thus incorrectly conducted a *de novo* review rather than a "clearly erroneous" review – moreover, it's difficult to characterize π's testing as so clearly commercial in light of *City of Elizabeth*, which found experimental use in six years of road travel by all members of the public – several of the factors favor π's interpretation, or at least do not harm it as

severely as the panel majority held – in summary, the "totality of the circumstances" falls far short of the "clearly erroneous" threshold that should have been applied

- Reactions to *Lough*: The panel decision is widely regarded as an error, in light of both precedent cases (*Manville*) and subsequent decisions (*Kolmes v. World Fibers Corp.* (1997): experimental use affirmed in a very carefully-worded opinion)

§4.2[b] Applicant Activities - §102(b) – "On Sale"

- *In re Theis* (1979): π produced an automated question-and-answer device that played prerecorded voice messages and recorded the listener's responses – π sold several such devices to some outside companies, which complained that the devices had many defects and were not useful for their intended purposes – π fixed several of the defects and then applied for a patent (both specifically for use as a telephone system, and generally for use in communication) – the examiner cited the prior sales as an invalidating factor – CCPA affirmed rejection of patent application: §102(b) forecloses patentability for any invention "on sale in this country more than one year prior to the date of the application" – π first argues that the sale was not consummated (title remained with π until after the filing of the application); however, a §102(b) bar is raised if the device is ever placed "*on sale*," even if no sale is ever consummated and no product ever delivered – nothing about this sale (including the invoice) indicates that it is for a "trial period" or "experimental use" – π also argues that the inoperative nature of the sold products nullified their prior-art status – however, the main problem seemed to be use with a telephone; as claimed in π's patent application, the devices could still have been used in other contexts, and this is sufficiently "enabling" to raise a §102(b) bar – moreover, the issue here is not prior art, but an inventor's sale of his own invention; it is true that a "defective" prior art reference will not preclude patenting of an operative implementation of the same concept, but the sale of a device precludes its patenting regardless of its operability
- Sale of patent rights: Does the sale of patent rights constitute a §102(b) "sale" of the invention? – this is especially common in the employment context (see *Moleculon Research Corp. v. CBS, Inc.* (1986)), but cts have often excused this on the basis that this sale must involve a specific buyer and a specific seller, and these entities are hard to differentiate in an employment relationship – however, this isn't clear-cut: *Ferag AG v. Quipp, Inc.* (1995) dealt with a patent sold by a manufacturing company to its exclusive U.S. distributor (over which the manufacturer company retained 50% control); the CAFC invalidated the patent by finding this level of control inadequate – however, *Continental Can Co. v. Monsanto Co.* (1991) dealt with a patent for a bottle design sold (more than one year before patent filing) to a customer that did not use it; CAFC inferred a confidential relationship that precluded the statutory bar
- *Mahurkar v. Impra, Inc.* (1995): The inventor of a double-lumen catheter licensed the invention to an exclusive licensee, conditioned on the sale of some catheters within a certain period – the licensee had manufacturing difficulties (owing to design defects), but in order to remain the exclusive licensee, the company executed a paper sale of 40 catheters to a hospital; the company actually sent an invoice and delivered two prototypes to the hospital, which locked them in a cabinet, but no money changed hands – a defendant in a later enforcement action attempted to assert this "sham sale" as an invalidating statutory bar – CAFC upheld patent: the sale did not result in any meaningful commercialization: no advertising; no money changed hands; no placement of the

invention within the public domain – the only catheters produced were unusable for their intended purpose

- *UMC Electronics Co. v. United States* (1987): Δ, the U.S. Navy, issued an RFP for a high-precision accelerometer – π responded by designing such a device and offered it to Δ and demonstrated a prototype, but Δ declined to license it – π later filed a patent application and asserted infringement by a third-party manufacturer, which won the contract to build identical accelerometers for Δ – trial ct declined to hold this prior offer as a sale under §102(b) – CAFC reversed and invalidated π's patent: the on-sale bar is analyzed by the test created in *Timely Prds. Corp. v. Arron* (1975): "(1) The complete invention claimed must have been embodied in or obvious in view of the thing offered for sale (compete readability of the claim on the thing offered is not required); (2) The invention must have been tested sufficiently to verify that it is operable and commercially marketable; (3) The sale must be primarily for profit rather than for experimental purposes" – trial ct erred in this analysis on three grounds: (1) trial ct found that π hadn't built an embodiment that read on all claims; however, π had not offered to sell the prototype, but the actual invention – (2) trial ct found that π hadn't reaped any commercial gain from the prior activity; however, all that is required to trigger the "on-sale" bar is to have put the invention *on sale*, not to have sold it – (3) trial ct found that the operative concept of π's accelerometer was not apparent or inferable from the prototype; this cuts to the core issue: had π reduced the invention to practice at the time of the offer for sale? – *Barmag Barmer Maschinenfabrik AG v. Murata Mach. Ltd.* (1984) considered whether the creation of a prototype was necessary to trigger the on-sale bar, and held that a substantial offer for sale might trigger the on-sale bar in the absence of any physical embodiment – subsequent decisions have attempted to soften this approach by creating a "*sufficiently* reduced to practice" standard, but this concept violates the Boolean nature of the "reduction to practice" requirement – moreover, the "reduction to practice" concept is used in many contexts in patent law, but it's all the same holding; therefore, every holding on the topic impacts the overall concept and analysis – therefore, this ruling is limited to rejecting π's argument that the absence of an embodiment negates any inference of "reduction to practice"; this is only one factor in the overall test – additionally, an "on-sale bar" can be shown by many factors, including (but not requiring) reduction to practice – here, π's argument rests on the absence of a fully-working model when the offer for sale occurred, which is counterweighed by the firm nature of the offer, the specific design, the amount of the sale ($1.6 million), etc.; the totality of the circumstances suggest this was an offer for sale – Smith dissent: the majority opinion negates the minimum threshold of the "on-sale bar," which lent predictability and consistency to the field – as a result, inventors will be forced to file applications earlier, and with less certainty, before having created and tested a prototype
- The "on-sale bar": A 1992 Advisory Commission Report complained about the uncertainty in the CAFC's "totality of the circumstances" test, and recommended the limitation of the test to actual sale and delivery of the product – others (including CAFC Judge Nies) also complained that this policy does not actually help competitors determine whether or not inventions that are "on sale" can be exploited, since they don't ordinarily see the patent until several years after its filing (though this concern has been somewhat alleviated by pre-grant publication procedures) – more recent CAFC decisions broadly retreat from *UMC Electronics* (*Seal-Flex, Inc. v. Athletic Track and Court Construction*

(1996): in upholding a patent for an all-weather track surface design, the CAFC defined "on-sale" test as "whether the invention was in fact complete and was known to work for its intended purpose," and stated that "the on-sale bar starts to accrue when a completed invention is offered for sale"; CAFC reiterated this standard in *Micro Chemical Inc. v. Great Plains Chemical Co.* (1997), while upholding a patent for a weighing machine for livestock feed)

§4.3[a] Third Party Activities - §102(b) – Informing Uses

- §102(b) activities by others: This section prohibits patents for inventions that are "in public use or on sale in this country, more than one year prior to the date of the application" – this language isn't limited to the patent applicant, and such scenarios commonly arise, e.g., where another inventor kept the invention as a trade secret, or publicly used it in a way that concealed the operative concept from public view
- *Electric Storage Battery Co. v. Shimadzu* (1939): π (Shimadzu) created a method of producing fine-grain lead powder, and designed a machine to perform the method – π sought and obtained U.S. patents for these inventions, and then asserted them against Δ, who had independently developed the inventions and used them (for several years before π's filings) in its factories for the production of commercial quantities of lead powder – trial ct upheld patents – Supreme Ct invalidated π's patents: π defines Δ's use of the invention as secret, and therefore not public; however, "the ordinary use of a machine or the practice of a process in a factory in the usual course of producing articles for commercial purposes is a public use" – although earlier acts (e.g., 1793) enforced the "public use" bar only applied to uses outside the consent of the inventor, the current patent act (of 1839) dispenses with this restriction

§4.3[b] Third Party Activities - §102(b) – Non-Informing Uses

- *Baxter International, Inc. v. Cobe Laboratories, Inc.* (1996): π invented a sealless centrifuge that, unlike others in use at the time, did not rupture platelets in plasma – some inventors at the NIH had previously created the same invention, tested it, and used it freely in its public laboratory – π attempted to assert its patented design against Δ, which asserted the NIH's prior use as an invalidating factor; trial ct invalidated patent – CAFC affirmed invalidation of π's patent: the "totality of the circumstances" clearly indicates that the NIH's use was public – π characterizes it as experimental, but the record indicates that the NIH's use extended much beyond validation and into practice – π asserts that those who saw the NIH's centrifuge were under a duty of confidentiality, but no evidence of this exists; the NIH made no effort to secure knowledge of the centrifuge, and in fact did not even track who had seen it; and the NIH testified that it had a no-confidentiality policy – π also points to the NIH's inventors' declaration, which avers no such public use, but the trial ct properly gave this little weight and found it overcome by the bulk of evidence – Newman dissent: the NIH's use was apparently limited to its laboratory – the use that the majority characterizes as "public" was actually secret and internal to the NIH, and π couldn't even have discovered it – public use is more appropriately defined as it was in *In re Smith* (1983), in which the inventor conducted a public demonstration of the invention before 200 customers; it is difficult to couple that case with the present dispute
- Theft as prior use: If a patentee's invention is stolen and used in the public, does this constitute a patent-prohibiting public use? – *Lorenz-Colgate Palmolive Peet Co.* (1948): "§102(b) contains no qualification or exception which limits the nature of the public

use… there is not a single word in the statute which would tend to put an inventor whose disclosures have been pirated in any different position from one who has permitted the use of his process"

- *Bristol-Myers Co. v. Beecham Group Ltd.* (UK's House of Lords, 1973): π obtained a patent for a new form of a known drug (ampicillin trihydride) and intended to use it against Δ – however, prior to π's patenting, Δ had manufactured tablets via a process that, unbeknownst to Δ, included ampicillin trihydrides, and had sold these to the public – π contended that this was a "secret use," given (a) Δ's unintended use and (b) the fact the chemical analysis of the tablets wouldn't have revealed the presence of ampicillin trihydrides – House of Lords invalidated π's patent: first, Δ's activity definitely constitutes a "use": it intentionally conducted a specific set of steps, and it sold the products that contained ampicillin trihydride; even if it didn't know all of the details of the use, it's still a "use" – π characterizes this use as "accidental or *de minimis*," but this implies some kind of mistake or mishap; the presence of ampicillin anhydride does not constitute either, but simply an unintended side-effect – the more important question is whether this use was rendered "secret" by Δ's lack of knowledge or the inability of the public to determine the presence of ampicillin anhydride by chemical analysis – π's interpretation of "secret" is closer to "unwitting" or "undiscoverable" – in support of this interpretation, π cites *Re Stahlerk Becker Akt's Patent*, in which an unintended use was found to be not "secret" because it could be discovered by reverse-engineering; however, this doesn't support the converse proposition that inability to reverse-engineer implies secrecy – rather, "secret" implies an *intentional* concealment, such as taking steps to hide what would otherwise be obvious – Δ's use does not meet this definition, since they took no steps to obscure the presence of ampicillin trihydrides – thus, Δ's prior, non-secret formulation and sale of ampicillin trihydride invalidates π's subsequent patent filing
- European patent law view of "prior use": *Bristol-Myers* demonstrates the difference between the UK's "non-secret use" provision and the U.S.'s "public use" provision – after this opinion, the UK harmonized its patent laws with international practice and adopted a "public use" standard

§4.3[c] Secret Uses

- *W.L. Gore & Associates v. Garlock, Inc.* (1983): π developed a process and machine for creating flexible Teflon material by stretching the crystalline PTFE component as quickly as possible (which the prior art had taught would render the PTFE unusable) – however, a few years before π's patent application, John Cropper, a New Zealand sole inventor, developed a machine for stretching PTFE material, and sold the machine to a U.S. company ("Budd") under a confidentiality agreement; Budd used the machine to manufacture Teflon tape that was publicly sold – in a later infringement suit against Δ, trial ct invalidated π's patent on the basis of this prior sale and use – CAFC reversed and upheld π's patent: Budd's and Cropper's prior uses only extended to the commercialization of tape, not the secret process used to produce them – the sale of the tape would have triggered §102(b) to block Budd's and Cropper's attempt to patent the machine and process, but do not bar π's unrelated development and patenting of the process
- Secret use standards: Comparing *Gore* with *Metallizing Engineering* raises some issues as to whether commercializing the product of a secret process precludes patenting of the process – both cases agree that commercialization by the patent applicant will preclude

patentability, but *Gore* stands for the principle that secret uses by others do not – this is seemingly at odds with the text of the statute: §102(a) involves a "known or used by others" standard, whereas §102(b) involves a "public use" standard (implicitly, "public use by anyone"); these decisions apparently create a "public use by others" standard – also, the disparate treatment of non-informing public uses and secret uses is difficult to reconcile; compare *Metallizing Engineering* (where Learned Hand found that a non-informing public use may be invalidating, but that a secret use would not) with *Lyon v. Bausch & Lomb Optical Co.* (1955) (where Learned Hand found a secret use to be invalidating, due to the sale of products produced by the secret use)

§4.4[a] Patents, Printed Publications, and "In This Country" - §§102(a) and 102(b) – "Patented"

- Background: §102 includes provisions about information "described in a patent or printed publication," and create different standards for publications "in this country" vs. elsewhere – however, even these questions are not so straightforward (do other countries' "statutory invention registrations" count as patents? does online publication constitute a "printed publication?" how are multinational research and publications treated? etc.)
- *In re Carlson* (1992): π filed for a design patent on a dual-compartment bottle with two spouts – however, a German inventor had secured rights to this design by obtaining a German "Geschmacksmuster," which resembles a design patent, prior to π's invention – though the Geschmacksmuster did not explicitly reference a dual-compartment bottle, the inventor had deposited a model of such a bottle with a local office in Germany for public display – based on these facts, the examiner of π's design patent application rejected it based on §102(a) – CAFC upheld rejection of π's patent application: π disputes the classification of a Geschmacksmuster as a foreign patent, since the German patent office implemented a system closer to registration than examination for such devices – however, a foreign patent need not exactly resemble a U.S. patent to qualify as a foreign patent; it simply must convey rights that are substantial and exclusive – π also argues that depositing a single model in a foreign country is insufficient to put the entire world on notice that it is included in the scope of the design patent – however, the mythical "person of ordinary skill in the art" is presumed to have knowledge of all public information; though it's unfair to expect patentees to scour the earth for potentially invalidating prior art, this constructive knowledge is the legal standard by which novelty is evaluated

§4.4[b] Patents, Printed Publications, and "In This Country" - §§102(a) and 102(b) – "Printed Publication"

- *In re Hall* (1986): π's patent application for 1,4-a-glucanglucohydrolase was rejected on the basis of a doctoral thesis published more than a year prior in Germany – the doctoral thesis was "published" by having a single copy deposited with the university library and included in its index – in determining the critical date of public availability, the BPAI contacted the German library for information about its business processes, and was notified that the ordinary practices of the library when have made the thesis available (early enough to predate the critical date) – CAFC affirmed rejection of π's patent application: this single publicly-accessible and indexed copy of a doctoral thesis is sufficient to preclude patentability – π asserts that the information provided by the library about its business processes is inadequate to prove actual availability of this thesis;

however, traditional rules of evidence permit this inference that the general processes were followed in this instance

§4.4[c] "In This Country"

- *Robbins Co. v. Lawrence Mfg. Co.* (1973): An Australian government group issued a request for offers for tunnel-boring machines for use in Australia – π (in Seattle) responded with an offer, created the machine (in Seattle), and fulfilled delivery by placing the machine on board in Seattle, where it was accepted, shipped to Australia, and used – more than a year later, π filed a patent application for the machine, but the examiner cited this prior sale as a §102(b) "sale" in rejecting the application – appellate ct affirmed: π contests that the sale of a machine to an Australian company for use in Australia does not constitute a sale "in this country" – however, this phrase is to be read liberally; as long as "substantial activity prefatory to a sale occurs in the United States," the sale has occurred "in this country"

§4.5 Abandonment

- "Abandonment": This term is not to be meant literally, but specifically refers to relinquishment of the invention to the public – not simply failure to continue working on an application (though this has some impact on securing a priority filing date)
- *Kendall v. Winsor* (1858): (facts omitted; excerpted as Supreme Ct discussion of abandonment) – the patent monopoly is primarily designed to "promote the progress of the useful arts"; therefore, its rewards are intended for the public, not for inventors (their benefit is merely an incentive) – thus, an inventor who withholds his invention is not supposed to be rewarded at all, since this does not promote science – the public is willing to tolerate some delay in disclosure for the purpose of testing, etc., but if the inventor dedicates his invention to the public (through generosity or forfeit), it cannot be withdrawn, since this would simply detriment the progress of science – thus, the phrase "not known or used before the application for a patent" means that any knowledge and use by another who is not bound to the inventor (e.g., via confidentiality) – similarly, if an inventor conceals the operation of an invention for a long period while publicly using it, and is then allowed to file a patent application for a full monopoly term, this would actually slow down the disclosure of new technology, since inventors would have an incentive *not* to disclose via patenting – thus, abandonment constitutes any use that conveys the knowledge to the public, or that leads to commercialization of its products via a non-informing public use; in these cases, the inventor will not be rewarded with a patent monopoly

§4.6 Delayed United States Filing - §102(d)

- §102(d): This provision is intended to prevent the scenario where patents have expired in other countries but continue in the U.S., thereby forestalling competitive use of the invention by competitors and favoring foreign use – however, this passage is rarely invoked, because foreign patent applications are usually published well in advance of their issuance, and that publication serves as a prior art reference under §102(a) and (b) – the one scenario where §102(d) might be used is in chemistry practice, where an inventor may file for certain species in the U.S., experiment some more, file broader foreign patents claiming more species, and then file a CIP U.S. application for the other species – in this case, the foreign publication will issue 18 months after filing, creating a 12-month grace period, for a total of 30 months from the U.S. filing date; §102(d) may therefore create an earlier bar date than §102(a) or (b)

- *In re Kathawala* (1993): π discovered that some ester prohibit the metabolization of cholesterol, and filed patent applications in the U.S., Spain, and Greece – however, the Spanish and Greek applications were filed more than a year before the U.S. application, and therefore the examiner rejected the U.S. application under §102(d) – CAFC affirmed rejection: π argues that both foreign application only claimed the "process of making" the esters, and should only be considered prior art on those grounds, and not for the method of use and composition claims (which were considered non-statutory in these other countries) – π argues in the alternative that the foreign applications are directed to processes, and that the actual compositions (claimed only in the U.S.) should be considered a separate invention – however, all of the applications are directed toward the same invention – the critical question is whether *some* kind of patent-like protection issued for the invention in a foreign country; it's irrelevant which specific aspects are claimed and protected – though claims are the defining feature of the patent in terms of scope; but the invention is considered as a whole for prior-art purposes, since π's claiming decisions in foreign countries are driven by the laws of each country – this is supported in principle, by the inability of the USPTO to speculate about the scope of protection afforded a foreign patent, and by the policy that inventors shouldn't be able to obtain some rights to an invention abroad and then (much later) obtain rights to different aspects of the invention in the U.S. – π also points out that the Spanish patent officially issued before it was actually published, and the issue date (for the purpose of §102(d)) should be the publication date (which would nullify the §102(d) rejection) – however, the issue date is the formal date on which a nation begins extending protection; even if the patent is sealed but enforceable, the patent is considered "issued" (*In re Talbott* (1971)) – thus, the publication date and constructive public notice are not relevant to determining the issue date of the application
- Foreign patents: As with other subsections of §102, the definition of a "patent" is important here – e.g., the EPO has a "petty patent" system, whereby inventors can receive shorter-term patents (e.g., six years) for inventions that pass a more limited novelty search – should these be considered patents for §102? (under *Kathawala*, most likely so)

Chapter Five: Novelty: Prior Invention

- Background: More important than the statutory bars of §102 is the general concept of novelty, barring inventions "known or used in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent" (§102(a)) – also important to this are §102(e) (involving subject matter disclosed but unclaimed by another inventor) and §102(g) (involving priority in an interference proceeding) – all of these issues are unique to a first-to-invent system, and therefore unique to U.S. patent law – of course, §102(f) invalidates patents filed by anyone other than the true inventor, but this is rarely applied

§5.1 Prior Invention Under §102(a)

- *Woodcock v. Parker* (1813): (facts omitted; excerpted at Judge Story's discussion of prior invention) – in the U.S. system, the first inventor cannot have his rights abrogated by a subsequent inventor, unless the first inventor abandons it and never reduces it to practice
- "First and original inventor": This requirement dates back to the Statute of Monopolies, but U.S. patent law first codified it in the Patent Act of 1836 ("any person having discovered or invented any new or useful art not known or used by others before his or

their discovery or invention thereof may make application in writing to the Commissioner of Patents," etc.) – oddly, inventors are not required to specify their dates of first invention as part of their patent application; this becomes an issue only if an interference or prior art reference is cited

- *Gillman v. Stern* (1940): In an infringement suit over π's patented "puffing machine" for producing yarn, Δ asserted the development of a substantially similar machine by a prior inventor named Haas – trial ct invalidated π's patent – appellate ct reversed and validated π's patent: Haas invented two machines; the first was abandoned (Haas described it as "an unsatisfactory temporary device"), and the second was used in strict secrecy – Haas made a non-instructive demonstration of the second machine for a licensee, and agreed to sell all of the yarn it produced to the licensee; but his use of the machine in a tightly-controlled private setting constitutes a "secret use," not a "public use" – thus, a "secret inventor" is not a "first inventor" for the purpose of novelty – this result would be different had Haas's use constituted a public non-instructive use: although this would educate the public no more than a secret use, the former is still a "public use" for the purpose of novelty
- "Public" knowledge: Cases have brought much confusion to the secret/non-informing public/public trichotomy in §102(a) and §102(b) – cts agree that §02(a) applies only to "public" uses (*Levi Strauss & Co. v. Golden Trade* (1995)), but also define this as constructive public notice (publicly accessible, not actually publicly known) – other decisions are split as to whether the use of the term "by *others*" in the plural indicates that knowledge by a single other inventor does not preclude novelty (*Filterite Corp. v. Tate Eng'g, Inc.* (1970): more than one inventor required; *Spalding & Evenflo Cos. V. Acushnet Co.* (1989): knowledge by one inventor sufficient)
- Novelty standards in Canadian patent law: Canadian case law actually created a pure first-to-invent system; *Christina v. Rice* (1931) held that any first invention, regardless of how the first inventor then used the invention, irrevocably prevented later patenting by another – however, the Canadian Parliament vacated this holding and imposed a U.S.-like first-to-invent system in 1935, and then in 1989 abandoned this in favor of a pure first-to-file system
- "Reduction to practice": Previous decisions (including *In re Schlittler* (1956)) held that "reduction to practice" required the creation of a physical embodiment – this was expressly overruled in *In re Borst* (1965): "constructive reduction to practice" includes any disclosure sufficient to enable one of ordinary skill in the art to reduce it to practice
- Burden of proof: The priority contest places the burden on the alleged infringer both to raise an invalidating §102(a) reference and to prove that its effective date precedes the patentee's date of invention (*Mahurkar v. C.R. Bard, Inc.* (1996)) – this position has been criticized both as unworkable and as inconsistent with the fact that the patent applicant bears the burden of swearing behind prior art references during prosecution
- "Swearing behind" practice: 35 USC §131 sets forth the rules for swearing behind a reference – must provide facts sufficient to show completion of the invention in a NAFTA/WTO member nation – this must include an oath/affidavit, as well as facts (including records, drawings, etc.) sufficient to establish reduction to practice, or conception coupled with due diligence through the filing of a patent application – note that this is not available to swear behind subject matter claimed in a patent (must declare

an interference for this to occur), or to swear behind prior-art references more than a year before the application filing date

§5.2[a] The Elements of "Invention" Under §102(g) – Patent Interferences

- Interference: §102(g) is the basis for patent interference proceedings, where applicants vie for patent rights to the same invention in an *inter partes* proceeding – usually occurs between a "senior party" and a "junior party," based on their filing dates – may be initiated either by an examiner or by one of the applicants
- Interference practice: If the interference is raised by an applicant, the applicant must demonstrate a priority date before the filing date of the earlier reference – this determination is initially made by a primary examiner, and is verified by an examiner-in-chief – if the earlier filing date exceeds the later filing date by more than three months, the junior party bears the initial burden of making a *prima facie* case for priority; if he can't do so, the interference proceeds but with an initial presumption of summary judgment for the senior party, which the junior party must overcome – if the junior party clears these hurdles, each party files preliminary briefs alleging dates of inventive activities and motions for issues to be considered in the interference – the Board might decide the interference at this stage, or it may move to oral arguments before a panel of the Board – of course, the parties may settle the case at any stage (interestingly, under 35 USC §135(c), all settlement agreements must be open to the public; this prevents collusion between competitors to create an anticompetitive cooperation)

§5.2[b] The Elements of "Invention" Under §102(g) – The Rule of Priority

- Priority: Priority is usually awarded to the first inventor to reduce the invention to practice, unless the other inventor can establish (a) an earlier conception date and (b) "reasonable diligence" in reducing it to practice – in this context, the diligence of the second inventor is irrelevant; he wins priority unless the other inventor can successfully backdate

§5.2[c] The Elements of "Invention" Under §102(g) – Conception

- *Oka v. Youssefyeh* (1988): π and Δ participated in an interference proceeding to determine priority in the invention of a set of compounds that inhibit angiotensin-converting enzyme – Δ (junior party) presented a notebook entry (dated February 27th) by an inventor of the structure of this class of compounds, which the Board considered inadequate to establish conception – Δ also demonstrated a method of making a related compound on October 10th, a method of creating a member of this class in "late October," and the performance of this method in December – π demonstrated conception also in "late October" – the Board established Δ's priority date as of the October 10th conception of a method of creating a related substance, and thus awarded priority to Δ – CAFC reversed and awarded priority to π: conception in the chemical arts requires (a) the idea of the structural composition of the compound and (b) the idea of the operative method to create it – the Board's selection of October 10th was clearly erroneous, because the compound known to be created by that method was not of the genus at issue – the fact that this method was later found suitable for making the compound in the claimed genus does not move the conception date back to the date this method was created – neither π nor Δ can specify an exact date of conception, but merely cite October; in such cases, the conception date is established as the last date in this range (*Haultain v. DeWindt* (1958)) – thus, π and Δ are found to have conceived the invention on October 31st, and since π was first to file, it wins priority

- Conception: Evidence of conception is often presented in the form of laboratory notebooks, which may call into question either the sufficiency of the notebooks for teaching the invention to one of "ordinary skill in the art" (moreover, "at the time the invention was made"), or the authenticity of the notebooks – *Loral Fairchild Corp. v. Matsushita Elec. Indust. Co. Ld.* (1996) dealt extensively with an allegedly "doctored" notebook

§5.2[d] The Elements of "Invention" Under §102(g) – Reduction to Practice

- *Scott v. Finney* (1994): π and Δ contested priority over the invention of a penile implant based on hydraulic pumping – Δ had filed earlier, but π asserted prior conception and reduction to practice – as evidence, π presented a videotape of implantation in an anaesthetized patient and successful testing of the pumping mechanism – π also presented expert testimony that the videotape demonstrated sufficient rigidity for intercourse – finally, π presented evidence of leakage tests, studies showing the suitability of the prototype material for this application, etc. – nevertheless, the Board rejected π's evidence as establishing an earlier date of conception, holding that π must have shown its suitability in actual or simulated use – CAFC reversed and awarded priority to π: in order to show actual reduction to practice, the party must demonstrate "suitability for its intended purpose" (*Steinberg v. Seitz* (1975)) – the amount of evidence required varies with the complexity of the invention: simple inventions may be presumed to work simply based on their design (*King Instrument corp. v. Otari corp.* (1985)), while complex inventions require the inventor to "accurately duplicate actual working conditions in practical use" (*Elmore v. Schmitt* (1960)) – thus, the focus of inquiry is not what kinds of tests were conducted, but whether they together demonstrate that the invention will work as intended – neither commercial perfection nor actual use in the field is required in any case; these are required for FDA approval, but not for patenting – here, the invention is a simple prosthetic, borrowing heavily from prior, thoroughly tested prototypes; compatible materials and the physiologic suitability of the inflation technique are well-known – the only new concepts are the implantation technique and the hydraulics, which were obviously shown to be suitable
- Constructive reduction to practice: In order to retain priority through reliance on a patent application, the application must continue to be prosecuted – if abandoned, the filing fails to demonstrate reduction to practice; however, the filing date may be relied on to show conception
- *Amgen, Inc. v. Chugai Pharmaceutical Co.* (1991): π and Δ disputed priority over the isolation of erythropoietin (EPO) and its use as a diagnostic for bone marrow problems – π demonstrated isolation of EPO in 1983; Δ demonstrated isolation in 1984, but the idea of isolating it and using it as a marker in 1981 – trial ct found for π – CAFC affirmed verdict for π: chemistry inventions require the inventor to know and disclose the structure of the composition – in the case of natural proteins, conception really requires isolation of the structure of the protein, which also (simultaneously) serves as reduction to practice – this conclusion is supported by testimony that the state of the art in 1981 was such that conclusions about the structure of EPO would have been speculative or deductive, but likely wrong

§5.2[f] §5.2[e] The Elements of "Invention" Under §102(g) – Diligence

- *Gould v. Schawlow* (1966): π and Δ disputed priority over patent rights to the design of a laser – Δ obtained status as the senior party by establishing an earlier filing date than π;

neither party could show actual reduction to practice before their filing dates – π sought to establish an earlier date of conception, plus diligence through the date of filing for the patent application – π's evidence consisted primarily of his own lengthy testimony about his development of the laser over the course of several years, including time spent during a graduate program at Columbia and during employment with a development company – π also presented his (mostly undated) notebook, which he claimed to have developed consistently over several years, and testified that not a single week had passed in the interim where he did not spend substantial time in developing the laser – nevertheless, the Board rejected π's evidence as insufficient – CCPA affirmed inadequacy of π's evidence and awarded priority to Δ: π's voluminous testimony is corroborated by very little evidence; while his diligence may be surmised, the patent laws require objective evidentiary proof – some evidence shows the periodic development of the laser, but with several intervening months where π's diligence is evidenced solely by π's testimony

- Diligence: This concept exists to aid small inventors who may be unable to file until the invention is proven to work – several points to remember: diligence is only an issue where an inventor claims an earlier conception date but later reduction-to-practice date; only that party's diligence is at issue; and the conception date need not be firmly established, but must be shown to predate the other party's conception date – development gaps will be tolerated only if adequately explained (e.g., waiting on the delivery of machinery) and properly evidence – note that diligence is even important during conceptual reduction to practice; a patent attorney hired to draft the application must consistently work on it through the date of filing to show backdating diligence (*Gould v. General Photonics Corp.* (1982))

The Elements of "Invention" Under §102(g) – Corroboration

- *Hahn v. Wong* (1989): π and Δ disputed priority over patent rights to a novel polymer – π sought to overcome Δ's earlier filing date by showing prior conception and diligence through reduction to practice – π's evidence, in addition to his testimony, consisted primarily of his extensive laboratory notebook, containing sequential pages (some dated by hand, some dated by machine, and some undated) and some spectroscopy charts attached as exhibits – in order to corroborate this evidence, π presented affidavits by two colleagues, averring that they had "read and understood" certain pages of π's laboratory notebook, and affirming their existence as written on particular dates – the examiner-in-chief held this evidence insufficient to establish π's *prima facie* case – CAFC affirmed and awarded priority to Δ: π's corroborating affidavits establish only that the notebook existed as written on those dates, not that the experiments had actually been done as and when described – π relies on *Berges v. Gottstein* (1980) in asserting the sufficiency of this evidence – the *Berges* holding indeed considered a similar notebook in contributing to the sufficiency of such evidence, but the *Berges* plaintiff also offered extensive evidence about the company's policies, the overall progress of the research team dedicated to working on a specific project, etc – the *Berges* court thus found a "web of allegedly corroborative evidence" that would have been difficult to falsify – π's notebook, on its own merits and with two limited affidavits, does not meet this same threshold, and is therefore inadequate
- Corroboration: The federal courts set a very high threshold for corroboration of prior conception and diligence, owing to the ease and high incentive for falsifying such data – the courts even reject the "Shopbook Rule," Federal Rule of Evidence 803(6) (which

gives credibility weight to evidence of regular business practices), as inapplicable in the context of an interference proceeding – however, this strictness is offset by an unusually broad scope of admissible evidence; cts are required to consider all evidence that may be relevant, and to rule on the totality of such evidence – e.g., *Price v. Symsek* (1993) involved a drawing exhibit and an affidavit by a secretary that she recalled seeing the drawing on a particular date; although the Board rejected this evidence (since it did not suggest that the secretary understood the content of the drawing), the CAFC reversed and found this evidence relevant – the rule from this case: inventors' testimony and statements (including those in a lab notebook about test results) need to be corroborated, but the content of a physical exhibit does not need to be corroborated; thus, the exhibit is relevant if the inventor's testimony of its date of creation is corroborated

- Foreign activities: The patent law in 1939 disparately treated the impact of foreign patent activity, and actually created inconsistency: if a U.S. inventor conceived an invention and reduced it to practice before a foreign inventor, he could have obtained a patent with priority; but if he volunteered it to the public, the foreign inventor may have been able to swear behind the U.S. conception, obtain a patent, and sue the U.S. first inventor as an infringer – this discrepancy was repaired in more recent formulations of priority under the 1952 Act

§5.3 Patent Award to the Second Inventor

- *Dunlop Holdings, Ltd. v. Ram Golf Corp.* (1975): π invented and discovered a golf-ball covering with improved durability – Δ, accused infringer, raised a prior use of the same covering by an unrelated inventor, Wagner, who manufactured and sold a great number of golf balls covered with the material more than a year before π's patent application filing – π contended that Wagner's public use was non-informing, and was therefore "concealed or suppressed" such that the use did not constitute prior art – trial ct nevertheless invalidated π's patent – appellate ct affirmed invalidation of π's patent: it is well-settled that a later inventor is entitled to patent an invention that was created by an earlier inventor who suppressed it; the later inventor's efforts constitute a "rediscovery of a lost art" – however, a non-informing public use does not constitute concealment; it would impact that inventor's ability to file for a patent, but does not disqualify the use as a "prior use" under §102(g) – this result is different than the "secret uses" in *Gillman v. Stern* (1940) and *Palmer v. Dudzik* (1973), both of which involved "secret uses" that benefited only the inventor, and which could therefore be patented by a later inventor – however, non-informing public uses are treated differently, for three reasons: the public still benefits from the invention, even if it does not learn its operative principle; if the public use is valuable, competitors will likely discover it by reverse-engineering (as opposed to a secret use); and an inventor is not obligated to file for a patent, and may choose instead to dedicate it to the public
- *Paulik v. Rizkalla* (1985): π and Δ disputed priority over patent rights to a catalytic process for producing alkylidene diesters – π, the senior party, relied solely on his earlier filing date; Δ attempted to take priority by demonstrating an earlier conception and reduction to practice – the facts showed that Δ had conceived and reduced to practice four years prior to both parties' filing dates, but that Δ's internal patent staff had given the invention mid-level priority and waited for four years to file a patent application – however, Δ eventually did initiate work on the patent application (before π's filing date), but ended up filing for the patent after π – on these facts, trial ct found that Δ had

abandoned the invention and was only entitled to its filing date, and therefore awarded priority to π – CAFC reversed and awarded priority to Δ: the critical issue in establishing priority is which party invented first; Δ clearly carries that issue, since it both created and reduced to practice long before π's filing – Δ cannot rely on the earlier activity to establish a priority date, but nevertheless Δ resumed interest on the invention prior to π's earliest date – trial ct's holding creates the odd scenario where one who reduces to practice before another loses priority if he conducted some work even earlier, but waited "too long" before resuming interest and filing for a patent – i.e., the earlier inventor is worse off than if he had not conducted the earlier work at all – the better ruling, applied here, is that the inventor still obtains priority as of the date of his renewed interest in developing and patenting the process – the consequences of concealment have been established through 100 years of case law, and §102(g) is consistently applied in cases of intentional suppression (*Kendall v. Windsor* (1858)) and inferred concealment through an extended delay in filing (*Mason v. Hepburn* (1898); the rule is that one who abandons an invention will lose priority to one who initiates activity during the earlier inventor's abandonment or concealment – however, the present case is different: the later inventor initiated inventive activity after the earlier inventor resumed his efforts – Rich concurrence: the majority rule is consistent with equity principles and the ruling in *Farmer v. Brush* (1880) – the Board's verdict for π placed too much emphasis on diligence, and correlated a lapse of diligence with a permanent penalty of forfeiture, regardless of other circumstances; this is contrary to the relevant principles at issue – Friedmen dissent: the rule formulated in prior cases is that an unreasonable delay between reduction to practice and filing constitutes suppression, which prevents such later filing - §102(g) clearly states that one who suppresses his invention is not entitled to a later-filed patent; this statute contains no language about renewed interest, etc. – thus, the majority opinion interprets the law contrary to its plain meaning and past precedent

- Notes about *Paulik*: This case prompted a 7-to-5 split of the *en banc* 12-judge panel – on remand, the Board again found for Rizkalla, holding that Paulik had not shown diligence between the renewed interest and the filing of the patent application – Paulik appealed again, and the CAFC again found for Paulik, vacated the Board's second judgment, and remanded – note that *Paulik* distinguishes the concept of diligence from the concept of abandonment: these are not simply opposites, but are applied in different contexts (diligence refers to backdating a later-filed application on the basis of priority, and is measured between the date of conception and the date of reduction to practice; abandonment occurs between reduction to practice and filing a patent application) – however, the same acts and facts are used to establish or rebut both findings – finally, note that while abandonment destroys a priority date, it is less harmful than commercialization, which can preclude any later filing of a patent via §102(b), even without a competing application

§5.4 Disclosure in United States Patent Applications - §102(e)

- *Alexander Milburn Co. v. Davis-Bournonville Co.* (1926): π filed for and received a patent on a welding device – Δ, accused infringer, raised as an invalidating factor a U.S. patent filed by another inventor, Clifford, a few months before π's, and issuing a few months before π's, that completely described but did not claim π's patented invention – trial ct found for π, holding that Clifford's patent was not a predating publication that invalidated π's patent – Supreme Ct reversed and invalidated π's patent: had Clifford's

patent issued before π's filing, of course, it would have served as an anticipatory and blocking prior-art publication, even without claiming π's claimed invention – however, the publication was not available until well after π had filed his patent application – yet, the reason for its unavailability is merely the delay of the USPTO in examining and issuing patents; this delay should not be held against Clifford, or anyone else, in allowing a patent to information completely described in an earlier-filed application – thus, as long as the earlier application eventually issues as a patent, it should be considered prior art as of its filing date – naturally, this concept does not apply to abandoned or rejected patent applications

- §102(e): This section creates an odd class of prior art that is secret at the time of another's filing, but that is nevertheless held against the later-filing inventor – though seemingly inconsistent, this approach flows from the first-to-invent system, since (in the absence of any other evidence about prior conception) the earlier-filing applicant qualifies as the first inventor
- Preliminary rejections: A patent examiner encounters a dilemma if confronted with an earlier patent application that discloses (but does not claim) the subject matter of a later patent application: the §102(e) rejection can't be issued until and unless the earlier application issues – the examiner can't cite the earlier application without violating confidentiality rules – in this case, the examiner files a "provisional rejection"; see MPEP §706.02(f)
- European patent practice similar to §102(e): Of course, European patent offices have encountered a similar problem with previously disclosed but unclaimed inventions – they take a similar approach: later-filed applications that claim previously claimed subject matter are rejected on the grounds that the same patent monopoly can't be issued twice; later-filed applications that claim previously *unclaimed* subject matter are rejected on the grounds that only the first person who discloses an invention has the right to claim it (whether or not he actually does claim it is irrelevant to precluding a later-filing applicant from claiming it)

§5.5 Derivation – Theft from a Prior Inventor - §102(f)

- *Agawam Woolen Co. v. Jordan* (1868): (Facts are a little difficult to discern in this old Supreme Ct case, but the following attempt is made) – π developed some experience with wool- and cotton-manufacturing machines – while working in a particular mill, π encountered an improvement to these machines developed by other inventors – π suggested a further improvement that turned out to be useful – π then applied for a patent to the whole improvement, and attempted to assert it against Δ – Δ raised the defense that π was not the true inventor of the whole invention – Supreme Ct invalidated π's patent: π has attempted to claim the whole of the improvement invented by his employer on the basis of his small contribution to it – any attempt to patent an invention without naming its true inventors operates as a forfeiture of the invention, and this must be applied in the present case
- Derivation: §102(f) clearly applies to inventions wholly taken from another, but subsequent CAFC opinions raised an issue as to whether a patent for a modification that would have been considered obvious in light of another's invention can be invalidated on the basis of §102(f) if the inventors of the prior invention are not also named – *Gambro Lundia AB v. Baxter Healthcare Corp.* (1997) refused to so extend §102(f): no

"obviousness" analysis must occur; the sole issue is whether the inventors of the invention are all (and solely) named in the patent

§5.6 A Note on First-To-File Versus First-To-Invent

- Comparative advantages of priority models: Both systems have advantages: adopting a first-to-file system would encourage prompt and thorough filing, which is currently the practice in America as elsewhere; would harmonize U.S. practice with the rest of the world; and would greatly improve predictability of priority and greatly reduce the complexity of these determinations – the U.S. continues to utilize a first-to-invent system because it protects the rights of small and sole inventors from a costly "race to the patent office"; it discourages applicants from filing hasty and incomplete applications; it reduces the possibility of theft; and it streamlines the volume of cases that the USPTO must examine by eliminating needless filings – moreover, the USPTO points out that patents subject to interference proceedings are often of great commercial value, and it's important to grant rights to such patents fairly

Chapter Six: Anticipation

§6.1 The Identity Requirement

- *Lewmar Marine Inc. v. Barient Inc.* (1988): π invented a hand-operated winch for yachting featuring four gears for pulling rope at different speeds – unlike prior art winches, π's winch switched upward through the gears simply by reversing the direction in which the winch was being cranked – Δ, accused infringer, asserted that π's patent should be invalidated as anticipated by a winch existing for many years (the "American Eagle" winch), which also switched gears upon reversal of the crank direction – however, the "American Eagle" winch alternated between gears 1 and 2 with switching, unless the user also manipulated a foot pedal that pushed the winch into higher gears – nevertheless, trial ct found the American Eagle patent to anticipate π's patent and held it invalid – CAFC reversed and validated π's patent: the classic test of anticipation is formulated as: "that which infringes if later in time will anticipate if earlier in time" – however, this statement was formulated at a time when "anticipation" meant more than it does now; anticipation used to include the concept of nonobviousness, which is now separate – this test should now read, "that which *literally* infringes if later in time..." – that is, "anticipation" carries a restricted meaning in current law that a claimed invention previously existed exactly as the patent applicant has claimed it – here, π's claims focus on "means automatically to disconnect the disconnectable drive means only upon reversal of the drive shaft from the given said direction of rotation"; the use of the word "only" was an important feature (as indicated in the specification), and distinguishes π's invention from the "American Eagle" winch, which also required the use of a foot pedal
- The "four corners" defense: The core assertion in anticipation analysis is whether a single prior art reference completely fits the claim language – multiple references cannot be combined to produce an anticipation rejection or defense – nevertheless, some authorities and cases hold that "precise identity" between the prior art and the claimed invention is not required: "it is enough if the two devices are substantially the same, or if the advance from one to the other did not amount to invention, but it is not enough that the two devices perform the same function"
- Case/species claims: In some chemistry cases, a group of related compounds (a "genus") is known, and the inventor claims a subset of the genus (a "species"), the genus will be

found to have anticipated the species unless it demonstrates some improved or distinctive properties over the genus (*In re Kalm* (1967): patent allowed for species that had opposite properties compared with the rest of the genus, and as taught by the prior art) – factors to consider in this analysis: the number of compounds embraced by the most specific prior art description; the structural similarity between compounds in that group; the number of properties shared by compounds in that group; the relationship between the properties of the claimed species and the properties of the prior art; the number of parameters that can be varied among the most specifically described group of prior-art compounds; and whether the claimed materials are physical mixtures or the products of chemical reactions – in the opposite scenario, where a species is known and someone later claims the genus: "when a claim covers several compositions, the claim is 'anticipated' if *one* of them is in the prior art" (*Titanium Metals Corp. v. Banner* (1985))

- *Continental Can Co. v. Monsanto Co.* (1991): π designed and patented a plastic bottle configuration with hollow ribs radiating from the center of the bottom, which lent structural stability – Δ, accused infringer, raised a prior art reference also using structural ribs at the bottom of the bottle – π characterized Δ's design as having solid ribs, whereas the patented ribs were hollow (defined at trial as "the inside contour of the ribs generally follows the outside contour thereof") – trial ct granted summary judgment to Δ – CAFC reversed summary judgment: Δ contended that its prior ribs were explicitly hollow, but expert testimony strongly indicates that the ribs shown in Δ's designs were solid – Δ alternatively argues that the ribs are inherently hollow: even though hollowness was not explicitly set forth, the blow-molding process was likely to produce hollow ribs – inherency is present where "the missing descriptive matter is necessarily present in the thing described in the reference, and would be so recognized by persons of ordinary skill" – however, this can't be a mere possibility: "the mere fact that a certain thing *may* result from a given set of circumstances is not sufficient"; inherency requires that "the natural result flowing from the operation as taught would result in the performance of the questioned function" (*In re Oelrich* (1981)) – it is not clear that Δ's ribs were intrinsically hollow, and this issue should be decided at trial, so summary judgment reversed
- Inherency: This concept may appear in a few different scenarios – it is insufficient if the prior art references *accidentally* give rise to the claimed feature (*Tilghman v. Proctor* (1880): patent for a novel chemical process upheld over prior-art processes that included this process as an unintended side-effect) – it is also insufficient if the prior art references would have produced a novel compound in undetectable amounts (*In re Seaborg* (1964): patent for a novel atomic element upheld over claims that a particular nuclear reactor must create it, because such creation would have been in the amount of one-billionth of a gram in 40 tons of uranium fuel)

§6.2 The Enablement Requirement of Anticipation

- Enablement: Of course, a prior art reference can only anticipate if it is sufficiently enabling – the prior art reference must "contain sand exhibit a substantial representation of the patented improvement in such full, clear, and exact terms as to enable any person skilled in the art or science to which it appertains to make, construct, and practice the invention to the same practical extent as they would be enabled to do if the information was derived from prior patent" (*Seymour v. Osborne* (1870))
- *Titanium Metals Corp. of America v. Banner* (1985): π attempted to patent an alloy primarily made of titanium and containing 0.6%-0.9% nickel, and 0.2%-0.4%

molybdenum – examiner rejected as anticipated by a Russian prior-art article ("Investigating the Mechanical Properties of Ti-Mo-Ni Alloys"), which was not very verbose but which included some charts including, among others, results of testing a titanium alloy containing 0.75% nickel and 0.25% molybdenum – trial ct reversed, holding that π's patent taught much more about this range of compounds, including corrosion-resistant properties and the elimination of iron contaminants – CAFC reversed and rejected π's patent application: the critical question, quite simply, is whether the claimed compound is new – the Russian article clearly indicates that at least one species of this genus had previously been made, and therefore the alloy is not new and cannot be patented – π asserts that the Russian article is non-enabling, but expert testimony indicates that the alloy could be prepared "by at least three techniques," so enablement is sufficient – thus, π's claimed invention falls victim to the principle that a claim to a genus is anticipated by the prior creation of any one species

- Genus-species enablement: The typical rule for anticipation by species, *In re Von Bramer* (1942), is actually formulated a little too broadly – a genus is still patentable over a previously known species if the species only "theoretically" existed, such that no one knew how to make it (*In re Brown* (1964)), or if the species was taught only as a typographical error in a prior-art reference (*In re Yale* (1970))
- "Use" aspect of enablement: *In re Schoenwald* (1992) stands for the principle that a prior-art teaching of a compound will anticipate a later claim to the compound even if no practical use for the compound was known or taught in the prior art – according to the CAFC, finding a use for a known compound does not render the compound "new" or patentable as a composition (though its new use is patentable)

Chapter Seven: Nonobviousness

- Nonobviousness: This is the most difficult test of patentability: patents are rejected under 35 USC §103(a) "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains" – this analysis is less mechanical than an anticipation test, sometimes boiling down to a qualitative and subjective judgment of the value of the claimed invention over the prior art; terms like "inventive step" suggest this focus – the core principle behind nonobviousness is that trivial advances over the prior art should not be awarded patents; technological advancement always involves a continuous process of refinement, and this flow would be disrupted by awarding patents to minor steps along this path – two additional complications: defining the knowledge of "one of ordinary skill in the art," and doing so retroactively, at the moment the invention was conceived

§7.1 The Historical Standard of Invention

- *Hotchkiss v. Greenwood* (1851): π sought a patent on a method of making doorknobs out of clay and porcelain – during infringement trial, ct instructed jury that if the design was previously known for metal knobs, and if the use of clay or porcelain was only a substitution of one material for another, and if no additional skill were required for the use of clay or porcelain, then the patent was invalid – trial ct invalidated patent – Supreme Ct affirmed invalidation of π's patent: the novelty in this invention consists solely of taking one part of a known design and recasting it in a different material – although the substitution may lead to a cheaper or more durable article, this doesn't result

from any new technology; this difference is purely formal, not inventive – "the improvement is the work of the skillful mechanic, not that of the inventor"

- History of nonobviousness: Though not so codified in the Patent Act of 1790, this statute did state that patents should only be awarded for "sufficiently important" inventions – prior to the Act of 1952, which created the current system, courts applied a series of "negative rules" to decide which inventions were trivial: no patents for non-functional changes of material, proportion, or form; no patents for simple combinations of known mechanisms – some experts point to *Hotchkiss v. Greenwood* as the first statement of this requirement, and suggest that the 1952 Act draws directly from this case; though prior cases articulate the same concept, *Hotchkiss* was the first to characterize it as a "doctrine" of its own merit – until this "doctrine" was formalized, courts applied a wide array of standards for it: "inventive effort," "a substantial invention," "inventive skill," and even "something new, unexpected and exciting" – in the 1930's, the Supreme Court set a very high standard for patentability, requiring inventions to demonstrate "the flash of creative genius"; accordingly, the Court invalidated most patents that it encountered ("the only patent that is valid is one which this Court has not been able to get its hands on" (*Jungerson v. Ostby and Barton Co.* (1949))
- *Great A. & P. Tea Co. v. Supermarket Equipment Corp.* (1950): π created a three-sided box for use with a grocery counter, which, when mounted on guide rails in the counter, pushed customers' goods down the counter toward the checking clerk – during infringement trial against Δ, trial ct held this combination valid – Supreme Ct invalidated π's patent: combination patents face a "rather severe test" of inventiveness – combinations must demonstrate some new quality over the individual elements to attain patentability; while this commonly occurs in chemical and electrical patents, this rarely occurs with mechanical combinations – "the mere aggregation of a number of old parts or elements which, in the aggregation, perform or produce no new or different function or operation than that theretofore performed or produced by them, is not patentable" (*Lincoln Engineering Co. of Illinois v. Stewart-Warner Corp.*) – courts are therefore instructed to scrutinize mechanical combination patents "with a care proportioned to the difficulty and improbability of finding invention in an assembly of old elements" – Douglas concurrence: patentable inventions must not only be new and useful, but also must demonstrate "inventive genius" – indiscriminately allowing patents on "trifling devices" endangers the continued development of technology and "embarrasses the honest pursuit of business with fears and apprehensions of concealed liens and unknown liabilities to lawsuits and vexatious accountings for profits made in good faith" – the USPTO trend toward more liberal granting of patents exceeds the mandate of the Constitution
- Obviousness in the 1952 Patent Act: In direct response to the Supreme Ct's stance on patentability (as shown by *Great A. & P. Tea Co.*), Congress passed the 1952 Act with a more definite concept of nonobviousness; it is noteworthy that the entire act moves away from the "inventiveness" concept – this standard was then applied in three important cases: *Graham v. John Deere*, *Cook Chemical*, and *Adams*, which became known as "The Trilogy"

§7.2[a] The Modern Standard of Nonobviousness – The Trilogy

- *Graham v. John Deere Co.* (1966): (This case starts with a long discussion of the changes in 1952 revision; facts follow below) – 1952 Act added an obviousness test that

formalizes and stems from judicial precedents derived from *Hotchkiss v. Greenwood* (1850) – Congress is under an obligation to limit patents to those that "promote the progress of the useful arts," etc., against the backdrop of the Statute of Monopolies, which limited the Crown in granting monopolies as a political favor – Jefferson: patents should be limited to "the things which are worth to the public the embarrassment of an exclusive patent" – this obligation creates a standard of patentability that Congress may clarify by setting up tests that the USPTO will apply – *Hotchkiss* involved a patent application for a substitution of materials (making doorknobs made out of clay or porcelain instead of metal or wood), and the Court denied it, noting that "unless more ingenuity and skill were required than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which constitute essential elements of every invention… the improvement is the work of the skilful mechanic, not that of an inventor" – this test set forth the functional approach to patentability questions, eventually crystallizing into the obviousness test of the new §103 ("a patent may not be obtained if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains" – this test replaces the "flash of creative genius" test in *Cuno Corp. v. Automatic Devices Corp.* (1941) – the obviousness test involves three factors: 1) the combined teachings of the prior art, 2) the differences between the prior art and the claims at issue, and 3) the level of ordinary skill in the art – secondary considerations include commercial success, long-felt but unresolved needs, failure of others, etc. – facts of case: π's device is a spring clamp for plow shanks, allowing them to raise up over obstacles – the component at issue is a hinge that allows the shank to compress upward over obstacles, and a spring that forces it back down after the obstacle is cleared – this avoids a problem with prior clamps used on rocky plains, in which hard obstacles would break the inflexible shanks – π designed and patented a spring claim design, and sold several such clamps; π then improved the design, patented the improvement, and later sued Δ for infringement of the improvement patent – trial ct invalidated π's improvement patent as an obvious improvement of the earlier design – Supreme Ct affirmed invalidation of π's improvement patent: (Ct engages in long discussion of features, and concludes that the improvement functioned in the same basic way as the original design, with no functional improvement) – "certainly a person having ordinary skill in the prior art, given the fact that the flex in the shank could be utilized more effectively if allowed to run the entire length of the shank, would immediately see that the thing to do was what Graham did, i.e., invert the shank and the hinge plate" – π argues that the improvement has some additional and crucial benefits that are not actually discussed in the patent – prior Ct decisions have called such post-hoc arguments "an afterthought… if this were so vital an element in the functioning of the apparatus it is strange that all mention of it was omitted" – though π's arguments were sufficient to satisfy the examiner as to the prior art before him, some of the references raised by Δ render the improvement clearly obvious

- *Calmar, Inc. v. Cook Chem. Co.* (1966): π, Cook Chemical, invented a novel spray bottle design for household chemicals – π, Calmar, accused infringer, asserted invalidity of patent; in support of validity, π offered evidence of market success, long-felt need, and the inability of others to solve the problems that the patented device solves – Δ contends

that the improvements are inconsequential, and that the device as a whole was obvious to one of ordinary skill in light of the prior art – appellate ct found that the elements were not novel per se, but that nothing in the prior art suggested combining these old features to solve problems which had plagued the industry for years – however, π's claims rested on a sealing mechanism that is strikingly similar to a feature of a prior patent (U.S. Patent No. 2,715,480) that the examiner did not consider – this patent functions very similarly in its mechanical closure mechanism (the push-down cap sprayer) to π's, and taken together with the prior art, leave no nonobvious invention – π points to other advantages and features offered by its design, but the prosecution history indicates that patentability hinged on the sealing mechanism, so that is the sole basis of novelty (which is not present here) – π's evidence of secondary considerations was given undue weight to lower cts that did not understand the technical issues, and here, they cannot outweigh the technical analysis – π's device rests on "exceedingly small and quite nontechnical mechanical differences in a device which was old in the art" – thus, π's patent fails §103 and is hereby invalidated

- *U.S. v. Adams* (1966): π invented and patented a novel battery design with several advantages over the prior art (could be stored on a shelf for years without losing capacity; activated simply by adding water of any kind; provided a surprising amount of power at a constant voltage, regardless of current drawn) – π offered his device to the U.S. government, which expressed disbelief at his claims – however, the government then began broadly using the design, while denying π's requests for information about its uses of his design – π sued the federal government for infringement, which contested its novelty over the prior art – Supreme Ct held π's patent valid and infringed: Δ asserts invalidity, even in light of its significant advantages over the prior art, by characterizing it as "a patent on the essentially old formula" for a battery – Δ relies in part on *Sinclair & Carroll Co. v. Interchemical Co.* (1945), which invalidated a patent for a novel compound consisting of a known ink and a quick-drying solvent; this cases stands for the principle that "selecting the last piece to put into the last opening in a jig-saw puzzle" does not support a patent for the whole invention – however, π's invention is not merely the selection or substitution of material suitable for a known task; π's design demonstrates significant advantages over the prior art – further evidence of nonobviousness consists of Δ's initial disbelief that it could work as well as claimed, very quick adoption by the community (including Δ), and the USPTO's inability to turn up a single anticipatory reference in a very crowded field of prior art
- Question of law or fact: The *Graham* opinion characterizes nonobviousness as both a question of fact and law: the conclusion of validity is legal, but the specifics are factual – this dichotomy has significant procedural ramifications, which lead to tactical considerations
- "Synergy" in combination inventions after *Graham*: *Sakraida v. Ag Pro, Inc.* (1976) seems to indicate a resurrection of the "synergy" requirement for combination devices – this case dealt with a novel barn design, where cleaning is performed by flooding it with a ton of water stored in a tank or pool, and then removing the water via direction to drains by sloped floors – Supreme Ct invalidated patent, noting that it "simply arranges old elements with each performing the same function it had been known to perform, although perhaps producing a more striking result," and finding this deficient under patent law standards – however, this "synergy" requirement was repudiated by early CAFC

decisions, which noted that "synergy" appears nowhere in the Patent Act, nor any indication that combination patents should be held to a stricter level of scrutiny than other kinds

- "Ordinary skill in the art": *Environmental Designs, Ltd. v. Union Oil Co.* (1984) highlighted some factors for establishing the level of "ordinary skill in the art": (1) the educational level of the inventor, (2) the educational level of active workers in the field, (3) the types of problems encountered in the art, (4) prior art solutions to those problems, (5) the pace of innovation in the field, and (6) sophistication of the technology
- Combining prior art references in an obviousness rejection: Some cases have held that references can only be combined if the prior art teaching contains some suggestion of combining them – however, this is not actually the right test – *In re Oetiker* (1992): "the test is: 'whether the teachings of the prior art, taken as a whole, would have made obvious the claimed invention,' and 'the prior art as a whole must suggest the desirability of making the combination'" – thus, this suggestion need not be explicitly taught, but must merely be apparently useful in light of the prior art
- "At the time the invention was made": This requirement creates significant hindsight problems, especially in quickly-evolving fields
- "Patentability shall not be negatived by the manner in which the invention was made": This phrase is clearly intended to deprecate the "flash of inventive genius" test previously applied by the Supreme Ct to invalidate dozens of patents – this establishes the intent of patent law to reward inventions born of genius on the same basis as those born of accident or luck

§7.2[b] The Modern Standard of Nonobviousness – The Objective Tests

- *Newell Companies, Inc. v. Kenney Mfg. Co.* (1988): π invented a window shade design, featuring (1) a roller (mounted at the top of the window) comprised of two sections connected in telescoping fashion, such that the width of the roller was adjustable; and (2) a window blind design with perforated vertical strips on one side that could be torn off to match the width of the blind to the adjusted width of the roller – though such perforated blinds already existed, π's perforations improved over the prior art by not transmitting light if left untorn – Δ, accused infringer, asserted obviousness of the patent in light of prior art references for telescoping rollers with adjustable widths containing cuttable blinds, combined with references to perforated blinds (inferior, and lacking a matching roller) – jury found for π, but trial ct entered directed verdict for Δ on the issue of infringement – CAFC affirmed verdict for Δ: the trial ct's standard of review in considering directed verdict for Δ was to find "clear and convincing evidence" of invalidity – the trial ct found no anticipatory reference, but found relevance in testimony that experts in the field regularly attached the (inferior) perforated blinds to the telescoping rollers – the court found that "nothing could be more obvious" than this combination, even in light of π's presumption of validity – in opposing this finding, π first contends that its patent named "securement means" between the roller and the blinds, that the prior art references only used adhesive, and that his patent could use other means; however, this argument does not help π, since the broader reading still contains the narrow use that existed in the prior art – further testimony damaging to π's case arises from its admission that the key inventive element, the blind perforation, was a prior art concept; under *Calmar, Inc. v. Cook Chemical Co.* (1966), no patent should be awarded for "exceedingly small and quite non-technical mechanical differences in a device which

was old in the art" – even more, the USPTO did not consider (and π did not disclose) the most relevant prior art references of perforated blinds – in opposition of these facts, π proffers secondary evidence of nonobviousness, including commercial success and copying – however, these factors are secondary to the central question of nonobviousness, which is clearly absent

- Secondary evidence of nonobviousness – commercial success: In order to evidence nonobviousness, a patentee must show both commercial success and some nexus between the success and the nonobviousness – i.e., success must be shown in the absence of other explanations, such as a non-competitive market, or the use of the patented element in a larger device popular for other reasons (*Demaco Corp. v. F. Von Langsdorff Licensing Ltd.* (1988)) – however, this doesn't really require the patentee to show the complete absence of other explanations, only that the nonobviousness was the reason for the commercial success of the invention – however, some have criticized this inference of nonobviousness as resting on four weak assumptions: (1) the commercial success is due to the innovation, (2) the anticipation of commercial success by the patentee in inventing the invention, (3) the causal relationship behind the perceived commercial success and the efforts to create the invention, and (4) the failure of other efforts by those of ordinary skill in the art due to the patentee's successful reduction to practice – this analysis also inverts the patent reward: if the invention is likely to be commercially successful, then it does not need the promise of a patent as an incentive and reward – this evidence can include commercial success outside the U.S. (*Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Co.* (1984))
- Secondary evidence of nonobviousness – other factors: Copying is strong evidence of nonobviousness, especially where the copying infringer has struggled to differentiate his invention with trivial changes (*Specialty Composites v. Cabot Corp.* (1988)) – failed attempts of others to solve a problem that a new invention successfully resolves is "virtually irrefutable" evidence of nonobviousness (*Panduit Corp. v. Dennison Mfg. Co.* (1985)); however, this is inadequate if the field of invention was paid little attention, or if knowledge was simply lacking for creating a solution (*In re Sneed* (1983)) – evidence that others, especially competitors, have licensed the invention is strong evidence of nonobviousness – "long-felt need" is good evidence of nonobviousness, either by resolving a long-standing problem or by creating a new commercial want or need (*Leinoff v. Louis Milona & Sons* (1984)) – unexpected results are strong evidence; proof of "synergy" is not required, but may promote a finding of nonobviousness (*Specialty Composites v. Cabot Corp.* (1988)) – prior skepticism in the efficacy of the invention, which demonstration of the invention refutes, is strong evidence of nonobviousness (*In re O'Farrell* (1988))
- Prima facie case for nonobviousness: The examiner bears the initial burden of making a *prima facie* case – if not satisfied, the applicant is awarded a patent; if satisfied, the applicant bears the burden of coming forward with evidence, and then the court makes a determination by a preponderance of evidence – this process was reviewed and affirmed in *In re Oetiker* (1992)

§7.2[c] The Modern Standard of Nonobviousness – Case Exploration of Nonobviousness

- (Eloquent statement from textbook): "The seemingly endless variety of factual pattern present in technology leads the experienced patent law student to realize that no

encompassing theme can be developed to distinguish obvious from nonobvious inventions"

- *Hybritech Inc. v. Monoclonal Antibodies, Inc.* (1986): π created an improved immunometric ("sandwich") assay utilizing two monoclonal antibodies – Δ, accused infringer, asserted that the patent was obvious in light of previous "sandwich" assay designs, citing a combination of eight prior art references; trial ct invalidated π's patent – CAFC reversed and validated π's patent: The standard of review at this stage is whether the trial ct's §103 finding was "clearly erroneous" in light of the prior art contents, the differences between the prior art and the claimed invention, and the level of ordinary skill in the art at the time of invention – first, four of the eight references used by the trial ct actually follow the date of conception, and so are not relevant; the other four suggest experimentation with monoclonal antibodies but not teaching uses even approximating π's (two discuss monoclonal antibodies, but not "sandwich" assays; the other two discuss polyclonal antibody "sandwich" assays) – π also presents two arguments for secondary evidence of nonobviousness: first, commercial success (e.g., doubling of revenue in one year); trial ct ignored this as due to "the sudden availability of starting materials," and Δ links this to π's extensive marketing; however, these assertions are unsupported by the record (biotech changes so quickly that new materials are "suddenly available" every day) – second, unexpected advantage (e.g., expert testimony of prior skepticism and similar kits that didn't work at all); trial ct simply ignored this – in general, the 20 prior-art references cited by Δ skirt the invention, and sometimes teach away from it; and while π's product was indisputably marketed, its commercial success (both in quantity and in duration) is attributable to the merits of the invention – thus, trial ct's verdict of obviousness is clearly erroneous, and π's patent is reinstated
- *In re O'Farrell* (1988): At the time of π's patent application, biotechnology had advanced to the stage where a known bacteria could be induced to synthesize a eukaryotic gene by (a) restricting a bacterial plasmid for beta-galactosidase (used to metabolize lactose), (b) splicing a desired gene just past the beta-galactosidase gene, and (c) inducing expression of beta-galactosidase by adding lactose (leading to very tight regulatory control of gene expression) – a prior paper by Polisky taught a method of doing this by splicing in some ribosomal RNA (not usually translated, and therefore producing junk, but useful for studying the technique) – π's patent application claimed the same technique, only splicing in a gene for a specific protein – the examiner and Board rejected the application as obvious in light of the Polisky paper – CAFC affirmed rejection of π's patent application: the technique is the same regardless of whether ribosomal RNA or π's desired protein gene is spliced in, and the results are identical (same gene orientation, same reading frame, etc.) – although the Polisky paper teaches the insertion of RNA, and this is not identical as with DNA, another paper by Bahl teaches the adaptation of the technique for DNA – Polisky and Bahl together teach all of π's technique – π contends that it wasn't certain that this would work for heterologous proteins, that the Polisky paper depends on predictions only obviously true in hindsight, and that at most the publications suggest that their claimed technique was "obvious to try" but not reduced to practice (which prior decisions have rejected as improper grounds for a §103 rejection) – a fair reading of Polisky doesn't just predict the success of the technique, but actually demonstrates its successful use, and it would have been a trivial step to conclude that "since nonsense RNA produced nonsense polypeptides, if meaningful was inserted

instead of ribosomal RNA, useful protein would result" – while "obvious to try" is not adequate grounds for an obviousness rejection, it is also not a minimal threshold of nonobviousness, since every obvious invention would be "obvious to try"; the question is whether an invention that was "obvious to try" is nevertheless nonobvious – the "obvious to try" concept has been held inapplicable to reject (a) multiparameter techniques, where the particular parameters must be delicately chosen, and (b) techniques within new approaches that seemed generally promising – both circumstances require "undue experimentation" which defeats a finding of obviousness – the Board's rejection rested on neither scenario, but on a fairly straightforward and predictable technique with demonstrated success in a very close context – thus, π's technique had a "reasonable expectation of success" under Polisky and Bahl, and is therefore obvious and unpatentable

- Reconciling *Hybritech* and *O'Farrell*: These cases are difficult to contrast in order to formulate rules – three potential grounds for distinguishing: the concept is suggested in the prior art without reference to the applicant's specification; the references suggest a reasonable expectation of success; and the reference must suggest detailed methodology for practicing the technique
- *In re Vaeck* (1991): π invented a technique for isolating *Bacillus* insecticidal gene and inserting into cyanobacteria to create a "chimeric gene" – USPTO rejected application in light of two references: one generally describing the process of creating chimeric genes, and one describing he insertion of the same *Bacillus* gene into other bacterial hosts – CAFC reversed: prior art didn't suggest a good chance of success in cyanobacteria, owing to significant differences in bacteria – CAFC distinguished *O'Farrell* by noting that the latter case involved an explicit suggestion in the prior art to try that insertion, and a particular process for performing it
- "Obvious to try" rejection: This rationale for rejection has been very frequently criticized, since a superficial similarity plus hindsight can render make many improbable inventions "obvious to try" (*In re Fine* (1988): "To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher") – in other words, the USPTO cannot create a "mosaic" out of prior art references without some additional prior-art glue

§7.2[d] The Modern Standard of Nonobviousness – Comparative Standards of Inventive Step

- *Carbonless Copying Paper* (1981): (European Patent Office Board of Appeal decision) – π applied for a patent for carbonless copying paper – the examiner rejected the application as lacking an "inventive step" over a prior German unexamined application for carbonless copying paper; the only difference between the applications was π's selection of a suitable isocyanate, and this isocyanate was shown to react with the other compounds in the copying paper by both a U.S. patent and another German application – Board allowed π's patent: π persuasively argues that the use of this particular isocyanate showed an unexpected superiority to equivalent compounds, characterizes the U.S. patent and German inventions as an inferior implementation, and provides persuasive test results showing the superiority of his invention as evidence of an "inventive step" – moreover, the prior art is found to give no suggestion for the particularly suitable selection of this

isocyanate; and one of ordinary skill in the art would not have successfully prepared the solution suitable for this purpose without π's specific technique

- The EPO's "problem-solution" approach: EPO guidelines require patents to be written as first describing a problem to be solved, and then the solution – examination similarly proceeds by identifying prior art, establishing a technical problem to be solved, and determining whether the applicant's solution would have been obvious to a skilled practitioner – this leads to the same basic problem as the USPTO and CAFC face in determining obviousness; however, at least the question can be analyzed to see if it contains part of the applicant's solution, or is formulated with pointers toward the solution – e.g., *Profile* Member (1991): in affirming a rejection of an application for a combination invention (a "profile member"), the EPO identified two distinct problems with the prior art, showed that distinct and separate parts of the invention solved each problem in known ways, and that no synergy resulted from joining them ("no discernible combining effect") – the EPO noted that it is permissible to create a "mosaic" of prior art for an obviousness rejection, but "it must be a mosaic which can be put together by an unimaginative man with no inventive capacity"
- U.K. findings of nonobviousness: Some of the most experienced patent judges in the world sit on the U.K. patent courts (Mr. Justice Jacob and Mr. Justice Laddie are renowned experts) – their nonobviousness analysis is similar to ours: (1) identify the inventive concept in the patent, (2) determine the knowledge of the average practitioner at the time of conception, (3) find differences between the claimed invention and the matter "before known and used," and (4) determine whether those differences would have been obvious to that average practitioner (i.e., same basic test everyone else uses) – the U.K. courts note that the "notional skilled but uninventive person in the art" is a legal fiction in two ways: (a) most commercial research is performed by teams, with research departments highly skilled over the "ordinary skill" of the fictitious inventor; yet, the "ordinary skilled" inventor is presumed to know of every public reference, which is hugely unrealistic – thus, the most dispositive evidence is expert witness testimony as to the state of the art and the reasons for and against an obviousness finding – other evidence, e.g. a timeline of developments in the field, is relevant (if it pertains to the relationship between the prior art and the invention), but is still secondary to expert opinions
- Japanese "inventive step" standard: Same as above; "where an invention could easily have been made by a person having ordinary skill in the art to which the invention pertains, a patent shall not be granted") – as above, this hypothetical person "has the common general knowledge in the art, and ha ability to use ordinary technical means for research and development; has ability to exercise ordinary creative ability in selecting materials and changing designs; and is able to comprehend all technical matters in the state of the art" – this seems to be a more permissive standard (note the wording of "is easily made")
- TRIPS agreement standard: All TRIPS countries must utilize either a nonobviousness standard or an "inventive step" standard, but the TRIPS agreement does not define these standards, and the WIPO Patent Law Treaty only clarifies a little: "an invention shall be considered to involve an inventive step (e non-obvious) if, having regard to the prior art, it would not have been obvious to a person skilled in the art"

§7.3[a] Obviousness in Chemistry and Biotechnology – Composite Claims

- Background: Despite ostensibly using the same standard of nonobviousness as for other technologies (*In re Johnson*(1984)), biotechnology and chemistry cases effectively utilize a different standard – elucidating a coherent concept has been difficult for these complex fields – chemistry "entities" are usually far too complex to illustrate via drawings, but structural formula diagrams are provided; this led to the concept of "structural obviousness" (*Bender v. Hoffman* (1950)), which has really been the mainstay analytic test in this field
- *In re Papesch* (1963): π filed a patent application for a structurally complex compound with allegedly unexpected anti-inflammatory properties, in contrast to the prior art, which lacked such properties – examiner and Board rejected application, noting that the only difference between π's invention and the prior art was the use of three ethyl groups at one position instead of three methyl groups – CCPA reversed and granted π's patent: though a structural formula is the main descriptor of a chemical invention, nevertheless patentability attaches to the compound it describes, not the formula – novelty and nonobviousness are still determined by comparing the properties of the old compounds in light of the newly claimed compound – even accepting Δ's argument that the properties between the two compounds are very similar in all respects except anti-inflammatory effect, that is not grounds for ignoring this key property
- *In re Lalu* (1984): π filed a patent application for perfluoroalkyl sulfonyl chlorides as anti-corrosion agents –examiner and Board rejected this invention as obvious in light of a prior-art reference that suggested that these chlorides were not directly useful, but could be converted to acids useful for neutralization – CAFC reversed: A new use for a known compound previously known for a different utility does not render it newly patentable (as a compound) – however, a compound that could have been synthesized using prior-art techniques, but for which there was *no* known motivation for doing so, cannot render a later claim of newly-discovered utility obvious (*In re Stemniski* (1971)) – Δ relies on the previously known use of the chlorides as intermediates as teaching a previous use; however, intermediates are ephemerally made as a step toward other compounds, and the prior art suggests no motivation for stopping the process at the intermediate stage (*In re Gyurik* (1979)) – this is not the kind of "utility" as that term is used in patent law – of course, if the intermediate actually had a known use, it cannot be newly patented for a newly-discovered property
- Structural similarity: *In re Papesch* is balanced by subsequent cases stating that "very close structural similarities and similar utilities" will establish a *prima facie* obviousness case and shift the burden of proof to the applicant (*In re Grabiak* (1985)
- *In re Dillon* (1990): π filed a patent application for tetra-orthoesters as a fuel additive for cleaner emissions – the examiner and Board rejected the application as obvious in light of the prior art use of tri-orthoesters used as a fuel additive for de-watering, coupled with an opinion that the tri- and tetra-orthoesters should function very similarly for both uses – CAFC panel reversed the rejection – upon *en banc* rehearing, CAFC affirmed rejection of π's patent application: the Board's finding was premised on such strong structural similarity that the known compounds should inherently possess the same properties as the claimed similar compounds – thus, (according to the majority) structural chemical similarity can by itself create a *prima facie* case of obviousness, therefore shifting the burden to the applicant of proving nonobviousness (unexpected results, test results distinguishing the known and claimed compounds, etc.) – the mere discovery of a new

use does not by itself defeat this *prima facie* case; and the examiner does not bear the burden of showing that the prior art suggests that the known compounds have the same property, but rather the applicant bears the burden of showing that it doesn't – π has offered no such evidence, and hence has not surmounted the examiner's *prima facie* obviousness case – this finding is consistent with *In re Papesch*, which stood for the concept that the formula and properties of a compound must be considered together; the central point in that case was whether the examiner had to consider the properties of the invention *at all*, which of course is supported here – Newman dissent: the majority holding resurrects the "Hass-Henze Doctrine" that assumed a compound was unpatentable if it is structurally similar to a known compound with a different utility – this doctrine was rejected in 1960, in favor of requiring a *prima facie* case to rest not only on structural similarity but also on a consideration of their shared properties, including that alleged by the applicant – thus, the applicant must now show that its newly-discovered properties were "unexpected" over the prior art, even if the prior art did not teach the newly-discovered properties

- Methods of making: If there is a variant of a known compound with known utility, but the prior art doesn't teach a method of making it, a newly-discovered method of making it suggests that the variant is nonobvious (*In re Hoeksema* (1968)) –
- New uses of inventions with high similarity to known designs: *In re Wright* (1988): (Though not a chemistry or biotechnology case, this was referenced by *In re Dillon*) – π claimed a carpenter's level comprised of a barrel-shaped bubble chamber with a pin containing a pin to slow the momentum of the bubble – the examiner rejected as obvious in light of a prior art reference for a barrel-shaped bubble chamber, and a separate reference suggesting the use of a needle to make the bubble more obvious; the USPTO maintained that the momentum-slowing property was inherent in the prior-art use of the needle – however, the CAFC reversed: the USPTO rejected as irrelevant π's motivation in creating this implementation, but this is *always* relevant: π was working on a different problem, and used the needle for a different purpose – the problem with this opinion is that obvious inventions can be converted into newly patentable inventions by asserting a new motivation; and it should be apparent why *Dillon* cited *Wright* – many follow-up cases criticize the holding for this reason, and CAFC opinions have moved away from it – in such cases, rather than claiming the known and obvious design, the applicant may claim a novel process consisting of the use of a known device or compound for a new purpose – this raises an open question of when a structurally obvious invention with newly-discovered utility can allow a claim to the composition – allowance is supported by IP policy: this will encourage people to find new uses of novel (even if obvious) compositions
- *In re Deuel* (1995): π isolated a naturally-occurring hormone (HBGF) and sequenced the first 25 base pairs – π then ran probes for this 25 base-pair sequence against a library of bovine uterine cDNA library and a library of human placental cDNA, and identified cDNA from each that produced HBGF – π then filed a patent application containing two sets of claims: claims to the specific cDNA found in humans and cows for HBGF, and claims to any DNA sequence encoding HBGF in humans or cows – examiner rejected this application, noting that identifying a naturally-occurring substance via a probe in a DNA library was an obvious technique; the rejection characterized the invention as obvious in light of prior art references suggesting this technique – the Board affirmed this

rejection, further noting that "when the sequence of a protein is placed into the public domain, the gene is also placed into the public domain because of the routine nature of cloning techniques" – π countered that the prior art taught away from the invention by emphasizing that this class of molecules was brain-specific, and thus could not be isolated (as π had done) by probes against bovine uterine tissue and human placenta tissue – the Board responded that the technique was irrelevant, since π's claims were solely to the DNA sequences, not the process – CAFC reversed: the DNA sequences claimed by π are simply not taught in the prior art for making HBGFs; and while isolation/sequencing methods were generally known, they all depend on the cDNA sequence, and in this case no cDNA sequence useful for making HBGF was known – i.e., "a general motivation to search for some gene that exists does not necessarily make obvious a specifically-defined gene that is subsequently obtained as a result of that research" – thus, a prior-art reference disclosing the amino acid sequence of a protein does not automatically create prior art from every known DNA sequence giving rise to the protein (since this is a huge number of sequences, owing to the degeneracy of the DNA code) – also, the Board's rejection focused on the use of well-known techniques, but (as the Board concedes) π's claims are for compounds, so the methods of obtaining them are irrelevant (*In re Bell* (1993)); such evidence is only relevant if the known techniques particularly identify the claimed compound as a product of the process (suggesting anticipation), but no reference denotes this for π's HBGFs – the Board's rejection is essentially based on an "obvious to try" argument, which has long been held inadequate – this analysis demonstrates the patentability of the cDNA sequences particularly identified; however, π also claims every conceivable DNA sequence that encodes human or bovine HBGFs – (the CAFC implies that these are not patentable, but) the Board hasn't articulated a sufficient justification for rejecting them, and so its rejection si reversed and remanded

- DNA patents: The U.S. and Japan have broadly extended patentability to novel DNA sequences, whereas European patent offices have discouraged this – some assert that the U.S. standards are allowing scientists to perform known methods on known cDNA sequences and patent the protein products as novel substances
- Process vs. DNA claims: Like processes, inducing expression of DNA is a means to an end – however, IP protection for each works out differently: while a novel process can be patented, the discovery that renders the DNA useful (its isolation and/or proof that its protein product is useful) must only be done once, and its expression cannot be patented – thus, a useful DNA sequence should be protected by patenting its protein product, if possible
- Method patents: Until 1988, competitors could readily circumvent a U.S. method patent by carrying out the method in a foreign country and importing the unpatented (perhaps unpatentable) product – however, 35 USC §271(g) extended infringement to include the importation of materials made overseas by patented and unlicensed processes – however, method patentees continued to face trouble under the CAFC's analytic principle of separating each claim; known processes used to produce novel materials were nevertheless being held unpatentable as obvious – thus, Congress passed 35 USC §102(b), requiring that in biotechnology patent applications claiming both a composition and the method of creating it, the process must be held patentable if the product was

found patentable – however, this statute was found to be unnecessary in light of the following case, decided only a few weeks after the statute was passed

- *In re Ochiai* (1995): π synthesized a new and unusual cephem compound (of acknowledged patentability) by applying a technique well-known for creating compounds of this class to a novel and unusual reactant – π then filed a patent application for the cephem compound and the process of making it – the examiner allowed the composition claims but rejected the process claims; the Board affirmed, citing *Durden* as a basis of rejection where "a material A subjected to a standard process of reacting with a standard reactant, B, in order to produce the result expected from the reaction of A with B" – π contended that this rejection failed to meet the *Graham v. John Deere* obviousness test of considering the claims in light of all of their limitations, and that this analysis demonstrated the patentability of this process as depending on a hitherto unknown reactant – CAFC reversed rejection of π's patent application: the issue here is the patentability of a well-known process when used on a novel reactant to produce a novel product – one of ordinary skill in the art could not have practiced this invention, as the reactant was completely unknown in the art; and while the reactant could have been synthesized, no motivation for doing so was taught in the prior art (*In re Gordon* (1984)) – the Board's decision turns on a perceived set of *per se* rules in prior CAFC decisions that were, in fact, intended as guiding heuristics, to be considered in light of all of the facts

Chapter Eight: Prior Art for Nonobviousness

- Overview: As a general rule, any prior art reference available for anticipation analysis is also available for obviousness analysis – however, there are a few differences and room for debate: case law has created a few differences; the standard in the U.S. has changed over time, creating historical differences in obviousness analysis; and differences exist between the patent offices of different countries – the most significant difference is that prior art must be taken from the same or an "analogous" field of technology

§8.1[a] Section 103 Art In Terms of §102 - §102(a) Art

- *In re Stryker* (1971): π filed a patent application for a method of preparing polypropylene from a 50%-60% suspension of liquid propylene – examiner rejected under a prior art patent disclosing and claiming the same method, only with a 35% suspension – π attempted to show unexpected results (better yield than anticipated), but this failed – π then submitted a Rule 131 affidavit to swear behind the prior art patent; examiner rejected this as credible for showing use of the method, but not demonstrating the weight differences taught by π – CAFC reversed: in order to defeat a prior art reference cited in obviousness, "all the applicant can be required to show is priority with respect to so much of the claimed invention as the reference happens to show" (*In re Stempel* (1957), applied by *In re Tanczyn* (1965)) – here, the features for which the examiner cited the prior art reference were successfully predated by π's affidavit – refusing to allow it would create an anomalous result: if π broadened his claims by eliminating the weight reference, so that the prior art patent were literally included, π's affidavit would be enough to defeat the reference

§8.1[b] Section 103 Art In Terms of §102 - §102(b) and §102(d) Art

- *Application of Foster* (1965): (Facts omitted; presented only for holding of CCPA) – the question at bar is whether §102(b), which creates as a bar to patentability any publication,

anywhere in the world, of the invention more than one year before the filing of the patent application – some contest that if such a reference is combined with other available prior-art references to create a §103(a) rejection, this can be defeated by swearing behind it – this argument is refused: in both anticipation and obviousness, an inventor who undertakes to "swear behind" a reference is admitting that he created it more than a year after the prior-art references made this information public – however, §102(b) creates a "statutory bar" for filing, in that a inventor must file for a patent application within one year of its entering the public domain, or will irrevocably lose rights – this principle applies equally regardless of whether this obstacle arises by one anticipating reference or multiple references that render it obvious – this position is consistent with the nonobviousness standard created with the Patent Act of 1952; it is conceded (but irrelevant) that it does not reflect the law prior to 1952, and is inconsistent with *In re Palmquist* (1963), which is hereby vacated – also, this holding is limited to references qualifying under §102(b); references qualifying under other sections, which don't have the one-year time bar, don't fall in line with this analysis – Smith dissent: the majority ruling conflicts with the general principle that §103 is only used to decide what is or is not patentable, and that the statutory bars only apply to destroy rights to inventions found patentable – the majority's acknowledgement that the invention is novel and nonobvious should end the nonobviousness test, but the majority then includes it in a statutory bar – whereas §103(a) clearly withholds patents for inventions obvious "at the time the invention was made," the majority applies it to prior-art references created and published *after* the invention was made – the patentee's invention is thereby denied based on hindsight

§8.1[c] Section 103 Art In Terms of §102 - §102(e) and §102(g) Art

- *Hazeltine Research, Inc. v. Brenner* (1965): π invented and claimed a microwave switch, which the examiner rejected in light of two prior art references – one reference was filed three years before the date of π's invention, but issued after the date of π's filing; π therefore contended that since it was not available to the public under the USPTO's secrecy rules, it should not be considered prior art – the examiner and Board rejected this position, holding the prior patent to constitute prior art as of the date of its filing, presuming it later issues as a patent – Supreme Ct affirmed: as per *Alexander Milburn Co. v. Davis-Bournonville Co.*, "the delays of the patent office ought not to cut down the effect of what has been done… the first applicant had taken steps that would make it public as soon as the Patent Office did its work… we see no reason in the words or policy of the law for allowing the second applicant to profit by the delay" – this rationale applies equally well for this obviousness finding as it did in the anticipation holding of *Alexander Milburn*; holding otherwise would be to allow multiple patents for the same invention and its obvious modifications, simply because of the USPTO's slow processing
- "Secret prior art": The holding in *Hazeltine* attempts to choose the lesser of two evils, between allowing multiple patents for the same invention and denying patents based on prior art that was simply unavailable to the inventor – foreign patent offices take a different stance, and rely on this conundrum in publishing all patent applications 18 months after filing
- *In re Bass* (1973): π's invention for an "air control system for carding machines" was rejected as obvious in light of some prior art references – the examiner cited these as together rendering the invention unpatentable under §102(g), noting that the invention

was "invented by another prior to the date of π's invention" and therefore could not be overcome via Rule 131 affidavit – appellants argue that §102(g) can't be applied to prior art combined to form an obviousness rejection – CCPA rejected this argument but validated π's patent: allowing a reference to constitute prior art under §102(g) but not under §103 would create many logical contradictions – *Hazeltine* affirmed this principle for §102(e), and the same rationale applies here – (however, one of the prior art references is rejected on other grounds) – Baldwin concur/dissent: though the majority reached the right conclusion, its holding for §102(g) is incorrect – the majority view would render all prior art references effective as of their date of invention, essentially creating an "obvious in hindsight" standard – the purpose of the complexity of §102 is to limit the use of "secret prior art" to as a basis for rejection; this principle is of long-standing tradition (*Pennock v. Dialogue* (1829): "What the n is the true meaning of the words 'not known or used before the application?' If it were necessary to employ others to assist in the original structure or use by the inventor himself, it can scarcely be supposed that the legislature had within its contemplation such knowledge or use. We think then, the true meaning must be, not known ro used by the public, before the application.") – the Milburn rule allows secret prior art to be used if it is included in an earlier-filed patent application, but the majority extends this principle to *all* prior art – this would render many other sections (including §102(e)) "pur surplusage," since the dates of how a prior-art invention was used are no longer relevant

- "Secret prior art": *In re Clemens* (1980) dealt with an unusual situation: two employees of the same employer invented very similar inventions, and the employer filed patent applications on both – the examiner rejected the later-filed application as obvious in light of the earlier-filed application, citing *Milburn* for the use of the earlier application as "secret prior art" – CCPA reached a different factual conclusion (holding that the later-filed application had been invented prior to the earlier-filed application), but also generally held that the use of this "secret prior art" was appropriate when the later inventor has actual knowledge of the prior invention – CAFC backed away from this position (*Kimberly-Clark Corp. v. Johnson & Johnson* (1984): personal knowledge is of no relevance in prior-art determinations)
- Response to *In re Bass*: The problem with these rulings is that because the courts consider each unique combination of inventors as a distinct entity, the invention of a research group may be held obvious in light of prior knowledge by a part of that group, even by simply a subset of that group – in 1984, Congress amended §103 to add the following: "Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person" – thus, all inventive groups employed by the same company are now considered the same inventive entity; however, this still creates problems in the context of inventions jointly created by collaboration among companies

§8.1[d] Section 103 Art In Terms of §102 - §102(f) Art

- *Oddzon Products, Inc. v. Just Toys, Inc.* (1997): π obtained design patent for a football with a tail fin for improved throwing accuracy – Δ sought to invalidate π's patent by showing that the inventors of π's invention had been shown two very similar designs prior to invention – Δ therefore argued that under §102(f), π's inventors were not the true

inventors, since the invention was obvious in light of the prior disclosures to π – district ct allowed this line of reasoning, but still held the patent valid as not obvious in light of the prior disclosures – CAFC affirmed validity of π's patent, including for §102(f): some §102 subsections ((a), (b), (e), and (g)) pertain to acts that, at some point, make the invention public knowledge; other sections, including (c) and (d), focus on actions by the same inventor that cause him to lose rights, and (f) can be viewed in the same light – *In re Bass* considered the general issue of which §102 subsections extend to §103, and focusing on this distinction, allowed extension for (a), (b), (e), and (g) but denied it for (c), (d), and (f) – the basis for this split is the concept that prior art should only include information that is or will soon become public knowledge – however, the question arises whether such prior art can be considered in an obviousness rejection – according to the 1984 Amendment to §103, prior art that would *anticipate* a patent application should not be held against the inventor under §102(f) if the inventor files another patent application – the issue raised by this language is whether, by specifically specifying §102(f), Congress meant to *allow* such evidence in an obviousness assessment under §103(a) – thus, if an inventor creates invention A, the examiner cannot hold this against him in filing a patent application for invention A'; also, one who had no knowledge of A can file a patent application for A'; but one to whom the inventor discloses invention A is still restricted from filing for invention A' under §102(f) – for this reason, the examiner properly considered the prior disclosures prior art against π's design, but also was correct in finding π's design nonobvious over these prior disclosures – therefore, §102(f) is held to extend to §103 nonobvious analyses

§8.2 Analogous Art

- *In re Clay* (1992): π filed a patent application for a method of filling dead space in a liquid hydrocarbon storage container, comprising filling the dead space with an agent that formed a space-filling gel, and later using hydrogen peroxide to destroy the gel for access to the hydrocarbon – the examiner rejected (and the Board affirmed) the application as obvious in light of two prior patents: one in the same field that suggested filling the dead space with a balloon, and one in the field of hydrocarbon extraction from underground caverns, in which holes in the cavern through which hydrocarbon might escape are plugged with the same gel that π used – thus, "one of ordinary skill in the art would certainly glean that the gel as taught therein would have a number of applications within the storage of hydrocarbon liquid, and the gel as taught by π would function in a similar manner as the bladders in the other patent" – CAFC reversed and found π's invention nonobvious over these patents: one implicit requirement of adopting a prior art reference for an obviousness rejection is that prior art must be "analogous" to the applicant's invention – two factors in this determination: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, or (2) whether the reference is from another field, but is reasonably pertinent to the particular problem that the invention addresses – these uses are too different to make these uses part of the same field – the Board finds "common endeavor" in "maximizing withdrawal of petroleum stored in petroleum reserves," but this doesn't make them "reasonably pertinent": "a reference is reasonably pertinent if it is one which because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem... thus, the purposes of both the invention and the prior art are important" – the problem of

recovering oil from an underground cavern is not "reasonably pertinent" to the problem of storing oil in a tank

- "Analogous" prior art: These arguments most commonly arise in mechanical arts, where simple categories of invention are so dense that almost identical solutions can often be found for very different problems ((*Sage Products Inc. v. Devon Industries Inc.* (1994): patent application for a secure mailbox, designed to allow deposit of mail but prevent withdrawal, was found anticipated by a container for hazardous medical waste; non-analogous fields, but identical problem; *In re Paulsen* (1994): hinges and latches for use in a notebook computer were found obvious in light of similar latches, for piano lids, kitchen cabinets, washing machine cabinets, and audiocassette containers) – in asserting analogy (or absence) of two fields of technology, applicants and examiners often focus on the patent classification system for each invention; this is considered persuasive but not conclusive (*In re Mlot-Fijalkowski* (1982): "considerations in forming a classification system differ from those relating to a person of ordinary skill seeking solution for a particular problem")
- The "Winslow" approach: *In re Winslow* (1966): (Facts omitted; presented simply for an interesting CCPA [Judge Rich] approach to §103 analogy): "We think the proper way to apply the 103 obviousness test is to first picture the inventor as working in his ship with the prior art references – which he is presumed to know – hanging on the walls around him. One then notes that what applicant Winslow built here is basically a Gerbe bag holder… if there were any bag holding problem in the Gerbe machine when plastic bags were used, Winslow would have said to himself, 'Now what can I do to hold them more securely?' Looking around the walls, he would see Hellman's envelopes with holes in their flaps hung on a rod. He would then say to himself, 'I can punch holes in my bags an put a little rod through the holes…" – Smith dissent: this is an unwarranted simplification; the simplicity of π's device has obscured its unobvious merits – (subsequently, this concept was frequently cited in obviousness assertions; Rich later recognized that this concept is just another way of applying hindsight, and therefore limited his approach (*In re Antle* (1971): "as we have often remarked, *language* from an opinion should not be divorced from the facts of the case in which the language was used… *Winslow* does not apply in cases where the very point in issue is whether one of ordinary skill in the art would have selected the particular references, without the advantage of hindsight and knowledge of the applicant's disclosure")

Chapter Nine: The Patent Specification: Objective Disclosure

- Background: 35 USC §112 ¶1 requires applicants to disclose a written description of the invention, as well as "how to make" and "how to use" it; together, these are known as the "enablement" requirement – the term and concept date back to the Patent Act of 1790, which required a "specification so particular as to enable a workman or other person skilled in the art of manufacture, whereof it is a branch, to make, construct or use the same" – the reasons fro the requirement are to enable the public to use it after the patent expires, and to match the scope of the patent with the breadth of the inventor's discovery; one tangential requirement is that claims later added to the patent must be fully described in the original specification

§9.1 Enablement – How to Make

- *Gould v. Hellwarth* (1973): π and Δ each invented lasers in 1959 – π filed first, and appears to have invented first, but in an interference proceeding the Board accepted Δ's argument and evidence that π's specification was non-enabling – CCPA affirmed insufficiency of π's specification: π's patent application describes some features of a laser, particularly the novel features, but does fails to teach one of ordinary skill in the art how to make the laser by omitting many key parameters (reflectivity and curvature of mirror, pressure and temperature of interior cavity, operative conditions, etc.) – this information was released in a publication the following year, but in retrospect π's description appears deficient – π characterizes his invention as an improvement over conventional lasers, but still many parameters must be known (determined experimentally) before the invention can be used – although many physicists were building lasers around this time, they were all based on the earliest laser prototype, utilizing a pink ruby; this was a markedly different technology than π's laser used, and is evidence that the field did not wholesale adopt π's patent – in fact, the most detailed part of π's patent application suggests use of a sodium-mercury gaseous environment that has been shown not to work (the current art uses a helium-cesium atmosphere, which was conceived a few years after π's filing)
- Level of detail: The amount of specificity required to enable a specification is imprecise and variable – *Christianson v. Colt Industries Operating Corp.* (1987): "nothing in the patent law requires that a patentee must disclose data on how to mass-produce the invented product, or disclose dimensions, tolerances, drawings, and other parameters of mass production not necessary to enable one skilled in the art to practice the invention" – however, underestimating this level of detail can be fatal – *Genentech, Inc. v. Novo Nordisk* (1997): π's patent claimed a method of creating a protein by, as one step, "cleavable fusion expression"; Δ argued that the patent did not teach how to carry out this expression, and merely suggested an enzyme used for this purpose – CAFC accepted Δ's position and invalidated π's patent: "no reaction conditions for the steps are provided, no description of any specific cleavable conjugate protein; does not describe a specific material to be cleaved or any reaction conditions under which cleavable fusion expression would work… tossing out the mere germ of an idea does not constitute enabling disclosure" – this case illustrates the heightened standard for enablement in biotechnology
- Undue experimentation: *Consolidated Elec. Light Co. v. McKeesport* (1895): Supreme Ct invalidated π's claims to "an incandescent conductor for an electric lamp, of carbonized fibrous or textile material," because a survey of 6,000 such textiles produced none that worked as suggested – this opened the door for Edison's patent to a particular strain of bamboo worked unexpectedly well for this application
- International standards: The various patent offices apply the same basic standard – EPO: "the European patent application must disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art"; Japan: "The detailed explanation of the invention shall state the purpose, constitution and effect of the invention in such a manner that it may be easily carried out by a person having ordinary skill in the art" – however, most foreign applications are shorter and less detailed than U.S. patents, probably because of the first-to-file aspect of the international patent system
- *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.* (1984): π invented and patented a water-tolerant blasting agent comprising a suspension of ammonium nitrate,

carbonaceous fuel, a diffused gas, and an emulsifying agent (and the claims were structured as a combination substance) – π's patent included a list of ingredients that could be used for each component, including many salts, fuels, and emulsifiers – Δ, accused infringer, argued that π's patent application was invalid under §112 ¶1 for not specifying combinations of ingredients that would work – Δ argued that the disclosed lists could form thousands of emulsions, only some of which worked, and therefore the disclosure required "undue experimentation" – π countered that one of ordinary skill in the art was capable of selecting compatible combinations of fuels and salts, according to a "basic principle of emulsion chemistry" called Bancroft's Rule – trial ct found π's patent enabled – CAFC affirmed enablement of π's patent: claims are not intended to exclude non-working inventions; as long as fewer than "a significant number" of them are inoperative, the patent is enabled (and Δ bears this burden of proof) – Δ referenced π's internal notes, which indicated that of 300 tested combinations, 40% "failed"; however, the trial ct accepted π's characterization that "failure" simply meant "non-optimal," not "inoperative" – π's expert witness provided credible testimony of having made a number of successful emulsions from this formula, and that one skilled in the art could choose a suitable combination

- *In re Wright* (1993): π invented a method of producing a vaccine for Prague Avian Sarcoma Virus (PrASV) by altering the genome of the virus to disable its pathogenicity but preserve its antigenicity – π filed a patent application claiming this process for PrASV, which was allowed – however, π also broadly claimed any vaccine for any pathogenic RNA virus produced in this manner, and also the process of making any such vaccine in this way; the examiner rejected all such claims as non-enabled: since pathogenic RNA viruses are incredibly diverse, using this process and producing a vaccine for viruses other than PrASV would require scientists to engage in extensive experimentation – the examiner focused hypothetically on HIV, noting that if the process were straightforward, an AIDS vaccine should be readily available; the examiner then cited HIV research articles demonstrating the difficulty of disabling the virus – the examiner also cited the lengthy experimentation required by π to produce such a vaccine for PrASV – the Board affirmed, further noting that an "immune response" was not a guaranteed result, and even where it occurred, it was not certain to be immunoprotective (thereby defeating the vaccinating property of the suspension) – CAFC affirmed rejection of π's broadest claims: the cited bases for rejection are reasonable in light of the broad claims – the articles cited years after π's filing date do not constitute prior art, but actually stand for the opposite proposition that even with further advanced technology, π's claimed process could not be easily implemented – π's specification is highly tailored to PrASV, and those claims were properly allowed – π cites a few successful vaccines prepared in the intervening years, but the small number is indicative of the "undue experimentation" required, and even these have dubious immunoprotective qualities – π also offers affidavits from two other scientists, which are completely unsupported and merely state conclusions that π's method is useful – finally, even with respect to PrASV, subsequent articles suggest that genetic diversity limits the immunoprotective effect of the vaccine
- Patent scope: Balancing the inventor's invention and the scope of the patent is difficult; narrowness limits the value of the patent, while breadth gives the inventor a windfall for the use of his invention in other contexts – *O'Reilly v. Morse* (1854): Supreme Ct limited

π's patent for the telegraph by rejecting the following language: "I do not propose to limit myself to the specific machinery… the essence of my invention being the use of the motive power of the electric current, however, developed, for making or printing intelligible characters at any distances"; Ct's response could be characterized today as a rejection based on lack of enablement – also, in a companion case to *In re Wright*, *In re Goodman* (1993) featured a method for producing a particular mammalian protein in a particular plant, which the patentee cited to claim the use of the method for producing any mammalian protein in any plant cell; CAFC affirmed rejection on the basis of great uncertainty in the field, and π's extensive experimentation for carrying out even a few specific instances of the process

- The deposit requirement: The complexity of biotechnology creates the problem that even a full description may be inadequate to allow an ordinary practitioner to use the invention – thus, inventions claiming novel microorganisms often require the submission of a specimen to a repository, much as "models" of machines used to be provided – earlier, such inventors were required to deposit a sample in every nation where protection was sought, but today an inventor can deposit once (with an International Depository Authority (IDA)) and rely on an international certification of its availability – however, examiners usually make mandatory requests only when the claims are very dubious

§9.2 Enablement – How to Use

- *In re Gardner, Roe and Willey* (1970): π disclosed a novel chemical exhibiting antidepressant properties – π's application described in detail the method of making the chemical, suggested formulation "from 10 mg. to 15 mg." and daily dosage from "about 10 mg. to about 450 mg.," and suggested formulation "as solids, powders, solutions, and suspensions; in tablets, lozenges, troches, capsules, or ampules; to be administered orally or parenterally" – the examiner rejected π's application for failing to state the intended target of the drug – human adults, human children, rats, other animals, etc. – and for failing to disclose dosages of sufficient specificity to use the invention – CCPA affirmed rejection of π's patent application: π argues that since antidepressants are well-known in the art, the implicit target is an adult human, and that the dosages can be worked out through experimentation; but §112 ¶1 requires the applicant to instruct readers how to use it, and not to expect them to work out the details for themselves – π damages its case by providing test results on rats, but claiming that rats do not exhibit mental depression, and that the experiments measured "activities merely indicative of an antidepressant activity in humans and not of antidepressant activity per se" – since human doses are likely to vary hugely from effective doses in rats, π's application raises more questions of use than it answers

§9.3 "Written Description" – Proscription on New Matter

- *Application of Barker* (1977): π filed a patent application on a design for wooden shingles that created the impression of haphazard arrangement by preventing tiles from lining up to create a grid-like appearance; the design created this impression by using repeating patterns of tiles of widths varying according to a mathematical algorithm (3" tile, 6" tile, 9" tile, 6" tile, 3" tile, 6" tile, etc.) – a claim inserted by amendment included some language about "selecting elongated backing boards, each backing board having a length at least as great as the aggregate width of at least six shingles," but no motivation for this limitation appeared in the patent – the examiner rejected the claim on this basis, and the Board affirmed, citing a failure of the "written description" requirement of §112 ¶1

("fails to contain a written description of the invention defined in this claim") and §132 ("introducing new matter into the disclosure") – CCPA affirmed: π argues that the specification is described in sufficient detail to enable the application, and this is accepted – π further argues that sufficiently enabled specifications *de facto* satisfy the "written description" requirement, but this argument is refused: these requirements are separate but distinct – every Patent Act has required the inventor to submit a full "written description" of the invention; this is not mere surplusage over the "sufficient to make and use the invention" provision – π argues that the claim limitation is inherent in the written specification, and that one who wanted to use it would obviously carry out this limitation; however, the issue is not enablement, but rather the "written description" requirement, which should not require inductive logic – the claims therefore introduce "new matter" in violation of §132 – Rich concurrence: the majority needlessly delves into §112 ¶1; the claim should be rejected simply because it is not supported by the specification – Markey dissent: by denying the satisfaction of the "written description" requirement for an admittedly enabling specification, the Board and majority place form over substance – the "written description" language of the statute is simply introductory to the real requirement to disclose "in such specificity as to enable one of ordinary skill in the art," etc.

- *Vas-Cath Inc. v. Mahurkar* (1991): Δ filed design patent applications for a double-lumen catheter; in keeping with design patent practice, the applications included no written description of substance, but only some drawings – two years later, π filed utility patent applications claiming priority to the prior design applications – π, an admitted infringer (if Δ's patents were valid), sued for declaratory judgment of invalidity, asserting that Δ couldn't claim priority back to design applications consisting solely of drawings – trial ct granted summary judgment of invalidity – CAFC reversed summary judgment invalidation of Δ's patent applications: trial ct premises its summary judgment ruling on as causing the entirety of the utility patent applications to constitute new matter (and all of the claims to fail the "written description" requirement by reference to the drawings) – the "written description" requirement itself is partly an anachronism, dating back to the Patent Act of 1793, which didn't require claims but did require a "written description" – the core policy behind the "written description" requirement is to ensure that the inventor sufficiently describes the invention to prove that he invented it – this requirement is separate from the "enablement" requirement: the inventor must both recount his invention in enough detail to support the claims, and in enough detail to allow others to use it (*In re DiLeone* (1971): "it is possible for a specification to enable the practice of an invention as broadly as it is claimed, and still not describe that invention… e.g., where the specification discusses only compound A, this may very well enable one skilled in the art to make compounds B and C, yet the class consisting of A, B, and C has not been described") – with respect to priority, "the test for sufficiency of support in a parent application is whether the disclosure of the application relied upon 'reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter" (*Ralston Purina Co. v. Far-Mar-Co, Inc.* (1985)) – district ct correctly found that Δ's drawing enable use of the invention (one must simply make the catheters shown), but the district ct also found that Δ's drawings did not call out specifically what his invention was: the lumens, the tip width, the tip tapering, etc.; the range of variation that the invention encompassed was not shown by the drawings – thus, the court reasoned that the

"written enablement" requirement was not satisfied – Δ claims that one of ordinary skill in the art could tell what was new simply by examining the drawings, which is simply the combination of elements exactly described by the utility application – basically, Δ's drawings reasonably convey to one of ordinary skill that Δ had invented the catheter later recited in the claims, and is therefore sufficient to satisfy the "written description" requirement

Chapter Ten: The Patent Specification: Best Mode

- *Chemcast Corp. v. Arco Industries Corp.* (1990): π invented and patented a grommet for plugging holes in sheet steel without leakage, notably suggesting different parts of the grommet constructed from materials with different hardness ratings – Δ, accused infringer, asserted invalidity of π's patent for failure to disclose the best mode of the invention – CAFC affirmed invalidity of π's patent: the best mode inquiry of 35 USC §112 ¶1 is a separate requirement from the "written description" and "enablement" requirements of the same section – the core of this requirement is that an inventor must disclose the best way of using the invention that he has discovered as of the time of filing the patent application – this is a subjective requirement, focusing on the patentee's knowledge ("there is no objective standard by which to judge the adequacy of a best mode disclosure" (*In re Sherwood* (1980)), but two objective considerations are important: whether one of ordinary skill in the art would have determined the best mode from the specification, and whether the scope of the claimed invention actually includes the best mode that was allegedly not disclosed (*Randomex Inc. v. Scopus Corp.* (1988): π's concealment of a cleaning fluid formula did not violate the "best mode" requirement, because π's claimed invention did not include a cleaning fluid) – thus, this analysis involves two steps: determining whether the patentee knew of a better mode of practicing his claimed invention than he disclosed, and then determining if one of ordinary skill in the art could have practiced this best mode based on the disclosure – this is wholly a factual requirement (*Spectra-Physics, Inc. v. Coherent, Inc.* (1987)) – π's patent application fails the "best mode" requirement by failing to suggest the material best used for the grommet, including its composition, trade name, supplier, and hardness – π contends that the material used is not relevant, as long as it meets the requirements; however, this argument confuses "best mode" with "enablement," and a patent (such as this one) can be fully enabled without disclosing the "best mode" – it appears that π's inventor spent 750 hours developing and selecting a material for these grommets, and the failure to disclose this material violated "best mode" – moreover, this material is not "implicitly" disclosed so that one skilled in the art would know which material to choose – π finally argues that the formulation of the chosen material constituted a trade secret, but this does not exempt π from the "best mode" requirement
- "Best mode" requirement: §112 ¶1 requires the patentee not only to disclose the "best mode" known to him, but also to disclose it as part of the patent application – one way in which patentees sometimes run afoul of this is a patent application filed simultaneously with an academic article that discloses the best mode in more detail – one problem with the "best mode" requirement is that the patentee need not label it the "best mode," and therefore can "bury" it by disclosing a wide number of embodiments; even though it can't be picked out from the crowd, this nevertheless satisfies the "best mode" requirement (*Randomex Inc. v. Scopus Corp.* (1988)) – another way of circumventing the "best mode"

requirement is to craft the patent so that the claimed invention doesn't include the component or step to be kept secret

- Foreign practice: The "best mode" requirement is particular to the U.S.; Canada used to include it, but dropped it in subsequent patent act revisions – nevertheless, foreign inventors often describe the "best mode" anyway, in order to maintain the option of filing in the U.S. while establishing priority based on their foreign filing – similarly, American patentees usually maintain the "best mode" in foreign applications, simply because the U.S. patent will include the information anyway
- *Glaxo Inc. v. Novopharm Ltd.* (1995): π invented an anti-ulcer agent called ranitidine (the precursor of Zantac) – π filed a patent application disclosing and claiming ranitidine and several similar compounds, as well as a method of preparing it (identified as Example 32) – after filing, π prepared large quantities of ranitidine for testing, but instead of using the Example 32 process, they developed and used two other processes, known as Process 3A and 3B; these produced identical compounds, but with slightly better efficiency – one of π's inventors, Crookes, applied Process 3B to produce a new compound, ranitidine hydrochloride, known as Form 2 (the original was retroactively labeled Form 1), which showed better commercial properties – however, Form 2 was harder to measure and dispense, and so other inventors of π developed a new method of creating a pharmaceutical-grade dose of Form 2 – π chose not to claim the pharmaceutical-grade form of Form 2 or its preparation technique, and only claimed the original Form 2 and methods of preparing it – Δ, accused infringer, later asserted the failure to disclose this modified Form 2 or its preparation technique as violating the best-mode requirement – trial ct found π to have met the "best mode" requirement because Crookes, the inventor of Form 2, did not know of the pharmaceutical-grade Form 2 invention or methods of preparing it – in essence, the trial ct found itself unable to impute the knowledge of π's other inventors to Crookes (citing *Texas Instruments, Inc. v. United States International Trade Commission* (1989)) – CAFC affirmed validity of π's patent: the wording of §112 ¶1 is clear on this point: "The specification shall set forth the best mode contemplated by the inventor of carrying out his invention" – as the trial ct affirmed, this inquiry is literally limited to the knowledge of the inventor, and imputing knowledge to him by association is prohibited – Δ asserts that Crookes was intentionally walled off from others for this purpose, but it more realistically appears that Crookes was with a basic research group, while the pharmaceutical-grade ratinidine hydrochloride was prepared by an applied science group – Δ's arguments for imputed knowledge conflict with the realities of corporate research, where different groups in the company cannot be presumed to have full knowledge of each other's activities – Mayer dissent: the majority opinion condones "corporate shell games" that circumvent the best mode requirement – π should be treated as a unit, for which these different inventors are merely agents – it is apparent that many of π's employees found the pharmaceutical-grade preparation to be superior, and the agents responsible for making patent decisions within π intentionally obscured this, intending to protect it as a trade secret – this is a great example of imputed knowledge, and all of π should be viewed as a single entity for this purpose – the majority holding has the unfortunate side-effect of encouraging corporations to isolate research groups and limit communication
- Current views of the "best mode" requirement: *Glaxo* demonstrates the CAFC's refusal to extend the "best mode" requirement – similarly, *Transco Products Inc. v. Performance*

Contracting, Inc. (1994): CAFC held that if an inventor improves a process after filing a patent application, and later discloses a continuation application, the "best mode" requirement does not require him to disclose the improvement in the continuation – the 1992 Advisory Commission on Patent Reform even recommends eliminating the "best mode" requirement, characterizing it both as unnecessary and ineffective, and noting its existence only since 1952; others argue that it is necessary to preserve the "benefit of the bargain for the public" in exchange for the patent monopoly

Chapter Eleven: Claims

- Background: 35 USC §112 ¶2: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention" – the claims are the most important part of a patent, and the technique of drafting them well is subtle and difficult

§11.1 United States Peripheral Claiming Technique

- *Ex Parte Fressola* (1993): π filed a patent application for "a method and system of producing stereographic images of celestial objects which use distance information to offset one of two images produced on a display device" – π's claim 42 was presented as an ombibus claim, simply reading: "a system for the display of stereographic three-dimensional images of celestial objects as disclosed in the specification and drawings herein," which the examiner rejected as noncompliant with §112 ¶2 – Board affirmed rejection of π's claim 42: "omnibus" or "formal" claims used to be accepted, and are still accepted in some patent offices, such as the UK; however, the importance of claims has grown over the years, and their form has changed considerably – the Patent Act of 1870 signaled a shift in claim use; instead of describing the heart of the invention, the claims began describing the periphery – this change in practice followed a change in interpretation, where the claims narrowly describe the invention, although some breadth will be given to encompass equivalents – this change marked the end of "omnibus" claims (*Ex parte Rice* (1874): "the mere reference to the body of the specification by the terms 'substantially in the manner described' is not 'particularly' pointing out and 'distinctly' claiming the alleged invention") – this remains true today: claims are intended to stand on their own without reference to the specification; even if this reference were allowed, the specification also does not "particularly point out and distinctly claim" the invention: like most specifications, this one includes matter that is extraneous or even invented by another, and is written with expansive language ("although described in part by a computer program written in Turbo Pascal for use on an IBM PC, it is apparent that the concepts described can be readily adapted to other computer languages and systems"; "since changes may be made in carrying out the methodology of the invention, it is intended that all matter contained in the above description or shown in the drawings shall be interpreted as illustrative, and not in a limiting sense") – thus, its boundaries are impossible to delineate, thereby failing §112 ¶2
- Claims vs. specification: The claims are intended to stand on their own, without reference to anything except other claims – however, the claims are to be interpreted in light of the specification (*Markman v. Westview Instruments, Inc.* (1996)), especially for means-plus-function claims
- The "one-sentence rule": Every claim must be written as a single sentence – this rule encourages concise claim drafting, and focuses the claim on the most critical elements

- Claim drafting: U.S. patent practice centers on a series of claims, and are usually structured as a "reverse pyramid," beginning with the broadest claim and gradually refining it ("the device of claim 1, further comprising…") – this is done because the patentee wants the broadest possible protection, but wants to enforce the narrowest claim against an infringer, which improves the odds of an infringement verdict and reduces the chances of an invalidity finding – although patentees have considerable latitude in drafting claims, some standard forms have arisen; e.g., most begin by declaring the invention an apparatus, article of manufacture, composition of matter, or method (one of the four statutory classes) – some specialized claim types have arisen for specific purposes: product-by-process, functional, Jepson, and Markush; these are explored in more detail in the following sections

§11.2[a] Elemental Claim Structure

- Preamble: Elemental claims describe the invention as a set of elements or steps of a process – usually begins with a preamble that states the use of the invention ("a method of making coffee…" or "a device for use with a vacuum cleaner…") – the preamble might or might not be read as a claim limitation; reference to the specification is needed to determine if it was intended as a limitation (*Rowe v. Dror* (1997): "the effect preamble language should be given can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim")
- Transitional phrase: "comprising," "consisting of," or "consisting essentially of" – "comprising" (open transition): any device with all of the elements will infringe; "consisting of" (closed transition): any device with all of the elements and nothing else will literally infringe, though others might be considered equivalents (very limited; not often used); "consisting essentially of" (hybrid transition): extra elements are okay as long as they don't "materially affect the basic and novel characteristics of the claimed combination"
- Body: The body of the claim recites elements either structurally or functionally; each element might be designated by a separate letter – certain words used in the claims may have special meaning refined by case law: "integral," "extrinsic," "approximately," "horizontal," "solid" – special attention is paid to articles: "a" denotes a new element; "the" or "said" refers back to a previously identified element – if this is unclear, the examiner might reject the claim for lack of "antecedent basis" – it's noteworthy that *spaces* are almost never included as elements; instead, the claim specifies a "housing," etc. – claims may be dependent on previous claims, reciting additional limitations ("the invention of claim 2, further comprising" [some extra limitation]); this can be drafted as a multiply dependent claim ("the invention of claim 2 or 3, further comprising"), but a multiple claim cannot depend on another multiple claim
- Special terminology: Words are interpreted to have their ordinary meaning in the art, unless otherwise specified – generic terms should be avoided ("gadget," "widget," etc.) – trade names of items (especially materials) are usually refused, based on the uncertain scope and meaning of the trade name (*Ex parte Bolton* (1938): "Formica" rejected); this is also true outside the U.S. – the inventor "is free to be his or her own lexicographer" (*Hormone Research Foundation, Inc. v. Genentech* (1990)), but must define the terms in the specification with a definitive meaning

§11.2[b] Product-By-Process Claims

- Background: Some products are produced by a specific process, and as an alternative to elemental claims, the inventor might claim: "the article produced by the following synthesis steps…" or "the article produced by the process of claim 2" – this raises an interesting question whether a product made in a particularly disclosed way, and claimed by product-by-process, encompasses the creation of *all* such inventions, even if produced by a completely different method (*Scripps Clinic & Research Fdn. v. Genentech, Inc.* (1991): π's manufacture of Favor VIII C from blood, claimed as a novel substance and as the product of the disclosed process, was held infringed by Δ's use of a different method to produce the same product: "the correct reading of product-by-process claims is that they are not limited to product prepared by the process set forth in the claims" – this decision conflicted with standing Supreme Ct precedent)
- *Atlantic Thermoplastics Co. Inc. v. Faytex Corp.* (1992): π invented a shock-absorbing running sole, and patented it with a product-by-process claim – Δ produced the same sole by a completely different method, and the trial ct found for Δ on the issue of infringement – CAFC affirmed non-infringement of π's patent: Earlier treatment of product-by-process claims tightly bound the product to the process (*Smith v. Goodyear Dental Vulcanite Co.* (1877): "The invention is a product or manufacture made in a defined manner, not separated from the process by which it is created") – this view persisted in subsequent decisions (*Cochrane v. BASF* (1884): Ct rejected π's patent as claiming a non-novel product, but held that "every patent for a product or composition must identify it so that it can be recognized aside from the description of the process for making it, or else nothing can be held to infringe the patent which is not made by that process"; *Plummer v. Sargent* (1887): "the new article of manufacture is a product of the use of the process described in the patent; whatever likeness may appear between the product of the process described in the patent and the article made by the defendants, their identity is not established unless they are made by the same process") – the USPTO and CCPA created some exceptions (*In re Painter* (1891): "when an article of manufacture cannot be properly defined and discriminated from the prior art except by reference to the process of producing it, a case is presented which constitutes a proper exception to the rule"), and the exception has been somewhat expanded (*In re Pilkington* (1969): product-by-process claiming allowed to the product as made by any process, despite the existence of methods other than described; *In re Thorpe* (1985): "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself"; i.e., for the process is not an effective limitation for avoiding prior art during prosecution, but is a relevant defense by an accused infringer) – thus, the processes used by each party are relevant to an analysis of infringement of a product-by-process claim; holding otherwise would require ignoring critical claim language, and comparing the infringing product with the patentee's embodiments, rather than the language of the claim – Rich dissent to refusal of petition for en banc rehearing: the opinion of the panel needlessly expounds on a restatement of the law, which is not warranted by the case; hard rules for the interpretation of all product-by-process claims cannot be formulated in this context
- Product-by-process claim practice: Even though every modern product can be described other than by its method of synthesis, patent drafters continue to include them – in *Tropix, Inc. v. Lumigen* (1993), the district ct was required to reconcile *Scripps Clinic* with *Atlantic Thermoplastics*, noted the "open disagreement" among CAFC judges, and chose the traditional rule as per *Atlantic Thermoplastics* (as supported by a majority of

judges) – this practice is also inconsistent in foreign courts: EPO practice follows *Scripps Clinic*, while JPO practice follows *Atlantic Thermoplastics*

§11.2[c] Functional Claiming

- Background: An element of an invention can be specified by its function rather than its structure; this broadens the claim, but may broaden it to encompass prior art – instead, a combined approach may be used, specifying both means and its function, with the goal of capturing not only the means suggested, but also equivalents thereof
- *In re Donaldson Co.* (1994): π invented a vacuum-cleaning pump that eliminated collected dust from the filter surface by reversing the air flow through the filter – π's device also featured flexible housing walls, which flexed in response to airflow changes to break up caked-on dust – π's claim 1 recited the elements of the device, and ended: "arranged and constructed for the collection of particulate matter, having means responsive to pressure increases in said chamber," etc. (means-plus-function claim) – examiner rejected (and Board affirmed) as obvious over a patent by Swift, but held simply that the patent fulfilled the function so specified, not as correlated with a particular means (i.e., the flexible walls) – CAFC reversed: 35 USC §112 ¶6 permits "means-plus-function" claim language, and requires that any such feature must be considered in light of the structure, material, and acts described for that function – the Board argues for different standards of interpreting such language in different contexts (prosecution vs. infringement trial), but no basis for such a distinction exists – this section was added by Congress for the express reason of overruling the Supreme Ct ruling in *Halliburton Oil Well Cementing Co. v. Walker* (1946), which rejected use of means-plus-function language to describe a novel feature – the Board's construction reads the means as comprising *any* means for this purpose, not means approximating the flexible walls earlier disclosed in the claim – the Board also contends that the rigid-walled embodiment described by Swift vibrate in response to pressure change, just like π's flexible walls, but this is complete speculation, and does not connote equivalence
- Use of means-plus-function claim language: The USPTO's MPEP 2181-2186 attempt to guide examiners in reviewing such claims, but creates problems by allowing such claim styling without the use of the term "means" (the MPEP cites with approval *Ex parte Stanley* (1958): "a jet driving device so constructed and located on the rotor as to drive the rotor" is a §112 ¶6 claim), and by allowing "step-plus-function" claims for processes (even though virtually every process lists both a step and its intended function, e.g. [as cited by MPEP]: "reducing the coefficient of friction of the resulting film" recites both a step and its function) – the USPTO has affirmed this trend: recitation of structure in the function clause does not necessarily disqualify it as means-plus-function language, but excessive structural language will (*Laitram Corp. v. Rexnord, Inc.* (1991)) – also, "means" is not required, though its use creates a presumption of intended means-plus-function language (*York Products Inc. v. Central Tractor Farm & Family Center* (1996)); however, some function must be specified, and the "means" must be specified with some kind of range or generic quality (*Cole v. Kimberly-Clark Corp.* (1996): "perforation means" merely means a "perforation," and does not trigger §112 ¶6 interpretation)
- "Equivalents" under §112 ¶6: The use of means- or step-plus-function language triggers an expansion of the so-described element "to cover the corresponding structure, material, or acts described in the specification *and equivalents thereof*" – "in applying the 'means plus function' paragraph, the sole question is whether the single means in the accused

device which performs the function stated in the claim is the same as or an equivalent of the corresponding structure described in the patentee's specification as performing that function" (*D.M.I., Inc. v. Deere & Co.* (1985)) – however, "equivalents" are not determined as per the "doctrine of equivalents" used in infringement analysis; whereas the doctrine of equivalents utilizes a tripartite test of equivalence, "equivalents" under §112 ¶6 are considered as per the "sole question" noted in *D.M.I.* – this discrepancy is due to the differing purposes: §112 ¶6 equivalency is intended to limit means-plus-function language, while the doctrine of equivalents expands patent coverage

- "Single means claims": A patentee cannot use §112 ¶6 to claim the invention simply as a single means for fulfilling a certain function; such a claim violates §112 ¶1 on the basis of undue breadth (*In re Hyatt* (1983): claim rejected for any means for conducting a Fourier transform: "it covers every conceivable means for achieving the stated result, while the specification discloses at most only those means known by the inventor") – thus, every §112 ¶6 "means-plus-function" element must be one of several elements in a combination
- Foreign practice: The JPO has recently expanded its tolerance of functional language (newest revision of its patent act: "the applicant has to state, claim by claim, all the features which he considers necessary for identifying the invention for which a patent is sought"); the EPO allows functional claiming if the device can't be claimed as a structure

§11.2[d] Jepson Claims

- Jepson claim: This style of claim is for an invention, and consists of a preamble reciting the prior art and an "improvement" clause describing how the prior art is enhanced – this style is a throwback to the Patent Act of 1790, which required the inventor to "distinguish the invention or discovery from other things before known and used"
- *In re Fout* (1982): π invented an improvement to a method of removing caffeine from vegetable matter absorbed in a fatty substance – the prior-art method consisted of the addition of water to the fatty substance (which absorbed the caffeine) and the distillation of the aqueous portion from the combined fluid; π's improvement suggested instead evaporating the aqueous portion – the examiner and Board rejected the application as obvious in light of the known method and prior art references suggesting the equivalence of distillation and vaporization – π disputed the use of the prior-art method as a basis for an obviousness rejection, asserting that the examiner was holding the preamble of its claim against the inventor as prior art – CAFC affirmed: the use of a Jepson claim tacitly admits that the improved technology constitutes prior art, which can be used as part of the basis for an obviousness rejection – what is being held against the applicant is not his preamble, but the prior art that the preamble admits that the patentee knew before creating the invention
- Jepson claim practice: Because of the presumption that the improved-upon technology is prior art, this claim form is rarely used (although the prior-art presumption can be refuted if it is in fact the inventor's previous work (*Reading & Bates Construction Co. v. Baker Energy Resources Corp.* (1984))) – these are not often used for this reason, although a Jepson claim was the subject of *Warner-Jenkinson* – however, this style is of continued use in England, Germany, and Japan

§11.2[e] Markush Groups

- Markush group: This is a claim to a family of embodiments (usually molecules in a chemistry invention) that share a specific structure; the claim featuring the Markush

group is intended to encompass all of them – though useful, these claims can be difficult to describe, with one claim running for several pages; however, if the critical novelty feature is not part of this Markush group, the description might alternatively read "or a pharmaceutically acceptable _____" – the EPO and JPO allow Markush-group claims and evaluate them by similar standards

- *In re Harnisch* (1980): π invented a class of coumarin compounds useful as dyes, and filed a patent application containing Markush group claims – the examiner and Board rejected the claims as drawn to an improper Markush group which "does not belong to a known or recognized genus and possesses widely different physical or chemical properties," and for which the species "are so dissimilar and unrelated that it would be repugnant to associate them as a generic group" – CCPA reversed and allowed π's Markush group claim: π argues that the examiner improperly cited a "judicially created doctrine" as the basis for rejection, which π characterized as improper without a basis in 35 USC; however, no such reliance is apparent or was relied upon – π also argues that its Markush group claim was appropriate, and this has merit – Markush grouping practice was created in a patent application by an inventor named Markush who sought to claim a range of compounds sharing the same chemical structure – it evolved as simply another claim style, and is evaluated the same as other claims, without any special "doctrine" of construction – this court has previously indicated a doctrine of "improper Markush grouping," but this case allowed the claiming of widely different kinds of molecules (aliphatic, aromatic, aralkyl) that share the same nuclei but different side-chains; this commonality is the core of the Markush group – however, this analysis does not include the structure or function of the side-arms; these may be very different – this case also requires the species of a genus to be compared *in toto*, not merely by focusing on chemical composition – here, π's claimed genus shares a distinct advantage," and should be allowed

§11.3[a] Claim Definiteness – Particularly Pointing Out and Distinctly Claiming…

- *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.* (1986): π invented an improved wheelchair designed for easy loading and unloading into the seat of a car – the claim read: "In a wheelchair having a seat portion, a front leg portion, and a rear wheel assembly the improvement wherein said front leg portion is so dimensioned as to be insertable through the space between the doorframe of an automobile and one of the seats thereof…" – Δ, accused infringer, argued that this limitation does not "particularly point out and distinctly claim" the feature, because it is not apparent how it should be dimensioned for any particular automobile – jury found for π, but judge granted JNOV for Δ, invalidating π's patent as not sufficiently specific –CAFC reversed and upheld π's patent: the judge failed to read the claims in light of the specification, which clearly stated how to apportion the wheelchair for any particular car – the claims are not intended to be full and complete descriptions of the invention, but rather to be read in view of the specification – π had offered several expert in the art who testified that they understood what this term meant, which testimony the judge dismissed these claims as conclusory; on the contrary, this testimony suggests that experts could make and use the invention with little difficulty, and this is all that §112 ¶2 requires – the judge's ruling essentially requires the patentee to claim specific lengths for every possible automobile, which of course is not required

- Definiteness: As noted in *Orthokinetics*, §112 ¶2 only requires patents to be understandable to a skilled artisan; even generic terms like "in close proximity" may be sufficiently specific with adequate background knowledge – most patent claims include "weasel words" intended to broaden the limitations, like "about," "approximately," "Substantially equal," or "closely approximate," which the CAFC generally disparages but tolerates – however, *Amgen, Inc. v. Chugai Pharmaceutical Co.* (1991): the CAFC considered a claim that characterized a protein as "of at least 16,000 IU per absorbance unit"; the CAFC rejected this claim, noting that biological assays are too imprecise to provide consistent measurements, and that "'about' 160,000 gives no hint as to which mean value between the prior art value of 128,620 and the mean specific activity of 160,000 constitutes infringement" – nevertheless, the CAFC was careful to note that "about" is often sufficiently specific in other contexts
- "Whereby" clauses: "Whereby" is often used to specify how a component operates, but its effect depends on whether the description is intended to limit the element or simply describes the inevitable result of its operation (which has no effect) – *Texas Instruments Inc. v. United States International Trade Commission* (1993): in evaluating claims ending with "whereby the fluid will not directly engage the device and electrical connection means at high velocity" and "whereby the conductors will be secured against appreciable displacement by the fluid," the CAFC refused to consider these as limitations: "a 'whereby' clause that merely states the result of the limitations in the claim adds nothing to the patentability or substance of the claim" – however, if the effect described in the "whereby" clause does not flow from the preceding description, it will serve as a limitation

§11.3[b] Claim Definiteness – …What the Applicant Regards as His Invention

- *PPG Industries, Inc. v. Guardian Industries Corp.* (1996): π invented a formulation of automobile glass that filtered out most UV light – π's patent application claimed the glass as "exhibiting ultraviolet transmittance no greater than 31%," but admitted in its specification that, based on its experiments, most commercial furnaces would have trouble creating glass of this caliber – Δ, a competitor, developed its own formulation which π tested and found to exceed 31%, and therefore not infringe – however, Δ's tests indicated that its formulation did in fact fall below 31% – π realized that its testing equipment was exhibiting a 3% error; as a result, the glass it had patented was easier to produce, and Δ's glass infringed its patent – π therefore sued for patent infringement – Δ countered that π's patent indicated that Δ's manufacturing technique probably wouldn't work, and that this teaching-away excludes the use of that method from π's patent – trial ct held that Δ nevertheless infringed – CAFC affirmed infringement of π's patent: the claims literally read on Δ's formulation – the question is not whether Δ's formulation met the metrics of the claim as measured on π's faulty equipment, but whether met those metrics *at all*, which of course they do – Δ also asserts that π has failed to "distinctly claim the subject matter which he regards as his invention," because at the time of filing, π didn't believe that Δ's formulation infringed; however, π's patent facially claims a certain range of embodiments, and its subjective belief as to what it was actually claiming is not relevant

Chapter Twelve: Prosecution

- Overview: Patent prosecution refers to the administrative process of obtaining a patent, and makes up the largest share of work within patent law – this chapter will not only describe the process of prosecution, but also the issue of inventorship and inequitable conduct (the failure to disclose relevant prior art, and double patenting)

§12.1 Overview of Patent Prosecution

- U.S. filing: The USPTO is one of the U.S.'s oldest administrative agencies, and it utilizes a complex processing system, comprised of many regulations and procedural rules – these are described in the Manual of Patent Examining Procedure (MPEP), but this is an agency guidebook, not binding law (*In re Recreative Technlogies* (1996)) – inventors may file patent applications, but most pay a professional to draft and prosecute for them – if the invention needs more work but should be filed, the inventor may choose to file a provisional application; these do not include claims, are not examined, and must have a full nonprovisional application filed within one year (or else the provisional is abandoned and priority is lost) – important note: the provisional does not run against the total term of the patent
- U.S. examination: When a nonprovisional application is filed, the USPTO assigns it a filing date and serial number, and then forwards it to the appropriate Examining Group and assigned to an examiner – each examiner maintains a docket, and normally evaluates applications in order of filing date; most applications wait about 18 months for first action – the examiner may reject it outright if it doesn't meet the requirements of filing (lack of specificity, missing parts, etc.), or may conduct a prior-art search and issue a rejection (as per 35 USC §132, every rejection must cite the basis and references) – upon receiving the examiner's report (an "Office Action"), the patent attorney may choose to respond to rejections by refuting the examiner's arguments ("traverse"), or by amending the patent application (however, also as per §132, "no amendment shall introduce new matter into the disclosure") – this exchange continues until the examiner issues a "Notice of Allowance," which entitles the applicant to pay a fee and have the patent issue, or a "Final Rejection" – in the latter case, the patentee choose to abandon the application, may appeal to the Board, petition the Commissioner to address the issue, or may file a "continuing application" (a new application)
- Continuing application practice: (Most of this material arises from the summary in *Transco Products Inc. v. Performance Contracting, Inc.* (1994)) – a prior application may be refiled as a "continuing" application, if it is filed during the pendency of the previous application, and if the prior ("parent") and continuing ("daughter") applications share at least one inventor – the new application might also be continued, leading to chain of continuing prosecution, stemming from the "original" application – the purpose of such continuation is that each continuing patent receives priority based on the earliest filing date in the chain of filing – three kinds of continuing applications: (1) "continuation" application: claims the same invention as the parent application (no more or less); helpful if the examiner dismisses the application too quickly, and gives the applicant another chance to be heard – (2) "divisional" application: as per 35 USC §121, a patent can claim at most one independent and distinct invention; if more than one exists, the examiner issues a "restriction requirement," which delineates the inventions and requires the applicant to choose one for this application; each other invention may be claimed by filing a "divisional" application (which claims less than the parent application) – (3)

"continuation-in-part" ("CIP") application: claims some of the matter disclosed in the prior application (for which it receives filing priority), as well as "new matter" (which holds priority only from the filing of the CIP); these are usually used if a question arises about the sufficiency of disclosure of the prior application, but this is so rarely needed that only the U.S. and Canada allow this practice – however, CIP practice has several problems: recent decisions have created a presumption of estoppel in the filing of a CIP (*Waldemar Link, GmbH & Co. v. Osteonics Corp.* (1994)); the expiration is measured from the earliest filing even for claims unsupported by the original application; and even obvious modifications of the parent application do not secure priority by claiming them in a daughter application

- Appeal and petition practice: A final rejection can be contested either by appealing to the Board of Patent Appeals and Interferences (35 USC §134) if the basis is substantive, or by filing a petition to the Commissioner if the basis is procedural – the Board is comprised of panels of three experienced patent examiners (dubbed "administrative patent judges") who issue rulings specific enough to satisfy FRCP 52(a) – nevertheless, the Board reports to the Commissioner, which may override their ruling – the decisions of the Board and Commissioner can be appealed to the federal district courts by any of several mechanisms (e.g., filing a civil action against the Commissioner), and further appealed to the CAFC, and finally to the Supreme Ct - the CAFC usually applies a "clearly erroneous" standard of review, though the USPTO has argued that it should apply an "arbitrary and capricious" standard (which would lower deference due to lower cts, but raise deference due to the USPTO, and for this reason the CAFC has opposed this suggestion)
- Patent term: Patents issuing before the Uruguay Round Agreements Act (adopted in 1995) were afforded a patent term of 17 years from the date of filing – today, patents have an effective term of 20 years from the date of first filing – this change was adopted in direct response to the "submarine" patent strategy that plagued particular industries and certain inventors (particularly Jerome Lemelson), which were intentionally stalled by the applicant during prosecution for many years while the industry matured, and were then allowed to issue – the 20-year term may only be extended in response to delays caused by interference proceedings, secrecy orders, appeals, petitions, or litigation, and then for a maximum of five years – the patent term may be cut short by express abandonment, by filing a terminal disclaimer (voluntarily surrendering a portion of the tail end of the patent, often done as a prosecution tactic), or by failing to pay a "maintenance fee" (due at four, eight, and twelve year anniversaries, in growing fee increments)
- Foreign prosecution practice: Although most foreign patents are handled by patent counsel local to each country, patent practitioners benefit from an understanding of foreign patent practice, because they can help coordinate international efforts – the biggest difference between U.S. and foreign prosecution is the mandatory publication of every foreign application eighteen months after filing (highly contrary to the USPTO's secrecy rules), though efforts are pending to bring U.S. practice into conformity with other nations – also, U.S. continuation practice is more generous, potentially allowing prosecution throughout the potential 20-year term – also, whereas the USPTO requires filing in the names of the inventors, foreign patent offices allow filing in the name of an assignee (though this is mostly a procedural differences, this creates an important

substantive issue regarding "best mode," as noted above) – finally, whereas USPTO examiners both search and examine the examination, foreign offices employ separate units for these two tasks (the EPO relies on an International Search Authority residing in the Hague)

§12.2 Inventorship

- Overview: As per 35 USC §102(f), the USPTO requires inventions to name the true inventors – individuals may be named as joint inventors "even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent" (35 USC §116) – *Mueller Brass Co. v. Reading Industries, Inc.* (1972): "The exact parameters of joint inventorship are quite difficult to define. It is one of the muddiest concepts in the muddy metaphysics of the patent law. On the one hand, it is reasonably clear that a person who has merely followed instructions of another in performing experiments is not a co-inventor… to claim inventorship is to claim at least some role in the final conception of that which is sought to be patented"
- *Kimberly-Clark Corp. v. The Procter & Gamble Distributing Co.* (1992): π's employees invented an improvement to a disposable diaper – one of Δ's employees, Enloe, invented the same improvement three years later, and π and Δ filed against each other for infringement and a declaration of priority – Δ attempted to secure priority by asking the court to add another of its employees, Buell, as an inventor; unbeknownst to Enloe, Buell had created the same invention several years earlier – Δ therefore contended that both of its employees should be named as joint inventors, thereby predating π's earlier filing date – trial ct found for π, refusing to add Buell as an inventor – CAFC affirmed verdict for π and denied addition of Buell as an inventor: the requirement for joint invention requires some kind of collaboration between the inventors – Δ contends that the 1984 amendment to the Patent Act eliminated this requirement by allowing inventors to be named jointly "even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim" – these limitations do not suggest that inventors need not collaborate at some point to constitute joint inventors, but that the requisite collaboration should not be construed too strictly – the 1984 amendment was a codification of the court's reasoning in *Monsanto Co. v. Kamp* (1967): "A joint invention is the product of collaboration of the inventive endeavors of two or more persons working toward the same end and producing an invention by their aggregate efforts. To constitute a joint invention, it is necessary that each of the inventors work on the same subject matter and make some contribution to the inventive thought and to the final result." (then reciting the same factors listed in the 1984 amendment) – the term "joint" is not simply surplusage; there cannot be joint invention when inventors work completely independently of each other
- Inventorship and §102: One key feature of inventorship is that any prior application naming or excluding any one of the inventors constitutes a different inventive entity – this is important for the purpose of §102: an invention by two inventors may have a previous article written by only one of them cited against the application as constituting knowledge "by another" – this may require the deletion of the second inventor and all claims to which he contributed

- *Hess v. Advanced Cardiovascular Systems, Inc.* (1997): Two physicians, the founders of Δ, collaborated to produce a new kind of angioplasty catheter – they encountered difficulty with the balloon material, and contacted π, an engineer with a company called Raychem, and described the properties required for the balloon, including the seal around the inflation mechanism – π suggested the use of Raychem's proprietary material, and taught them how this would be used for the construction of their balloon (though π characterized his teachings as the "basic principles" of a "generally known process" described in several textbooks) – the physicians started with π's teachings, and worked for several months to develop a suitable implementation using Raychem's material; this was commercialized by Δ with great success – during a later infringement suit against another company, π sought to establish himself as an inventor – trial ct allowed suit but denied that π was an inventor, holding that his contribution "didn't rise to the level of conception," and that he merely told them what was available in the marketplace and how it worked – CAFC affirmed denial of π as an inventor: π's contribution was limited to showing the physicians a currently existing material and technique that would meet their requirements – all of the work in customizing the Raychem material for the invention at issue was conducted solely by Δ – the fact that π knew nothing about catheters or the design of this invention is relevant: *O'Reilly v. Morse* (1853): "no invention can possibly be made, consisting of a combination of different elements, without a thorough knowledge of the properties of each of them, and the mode in which they operate on one another; and it can make no difference in this respect whether the inventor derives his information from books or from conversation with men skilled in the science" – everything that π told the physicians was well-known prior art, and did not rise to the level of conception, as trial ct properly found
- Inventorship in foreign applications: Though correct identification is equally important in foreign patent applications, it's easier to satisfy because foreign patent offices allow the assignee to be named as inventor; this greatly reduces the chance of misjoinder and non-joinder of inventors, especially in corporations with large research teams
- Inventorship and ownership: In the U.S., every inventor has an undivided interest in the whole patent, regardless of what or how much they actually contributed – this often transforms co-inventors into business competitors, but it greatly enhances predictability and simplicity of patent use

§12.3 Inequitable Conduct

- Overview: The *ex parte* nature of patent prosecution requires the applicant to disclose potentially damaging, which creates a conflict of interest – this is resolved by obligating the inventor to disclose all relevant references known to him, and by granting an incentive in the form of a stronger patent (rather than one with doubts about its validity in light of certain prior art)
- The duty to disclose: 37 Code of Federal Regulations §1.56: The public interest is furthered by having the USPTO consider all information relative to patentability during examination – everyone working with the USPTO (inventors, patent practitioners, and everyone else substantively involved in prosecution and associated with the inventor, assignee, etc.) bears a duty of disclosing relevant prior art; this duty exists with respect to every pending claim, throughout the period of pendency – this includes all references cited in the search report of a foreign patent office for a counterpart application – a reference is considered material if (1) it is not redundant with other material already

considered, and (a) it establishes a prima facie case of unaptentability, or (b) it refutes an argument by the applicant regarding patentability – the conventional threshold test of patentability, as cited in *Molins PLC v. Textron, Inc.* (1995), is whether "there is substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a patent"; this test is still used in cases, and this §1.56 should be considered a clarification of that rule

- *Kingsdown Medical Consultants, Ltd. v. Hollister Inc.* (1988): π invented an ostomy pouch and engaged in a very lengthy patent prosecution exercise, featuring many revisions and many claims – an important feature of the device was the physical coupling between a body-mounted pad and the pouch aperture (designated claim 50)– in pursuing this claim, the patent attorney responded to an indefiniteness rejection by amending the claim, which the examiner admitted to be allowable – π later filed a continuation application and transferred all of the claims of the prior application; in so doing, π accidentally transferred the original, unamended claim 50, rather than the amended claim 50, and asserted that the examiner had allowed it – this unamended claim was allowed on this basis of this assertion, and appeared in the eventual patent – in a later, lengthy infringement suit, Δ, accused infringer, discovered the mistake and asserted it as evidence of inequitable conduct that rendered the patent unenforceable – trial ct agreed, inferring either intent to deceive or gross negligence, questioning "how an experienced patent attorney could allow such conduct to take place" – <u>CAFC reversed and upheld π's patent:</u> Δ is correct in asserting that inequitable conduct with regard to any one claim bars enforcement of the entire patent – however, the actions in question involve a ministerial task, which may be prone to errors of inattentiveness, not intentional wrongdoing, nor "gross negligence" (which, even if proven, does not automatically give rise to indicia of intent) Δ charges that π intentionally amended its claim in order to ensure coverage of its accused device; but even if this occurred, this is a perfectly valid action – thus, it appears that a mistake occurred, but the trial ct clearly erred in construing this as inequitable conduct
- <u>Inequitable conduct:</u> In 1988, the USPTO announced its inability to investigate assertions of inequitable conduct under Rule 56 (37 CFR §1.56), citing inadequate resources to conduct an inquiry sufficient to satisfy *Kingsdown* – inequity may be an issue in an interference proceeding, and of course in disciplinary proceedings before the patent bar – cases before the CAFC are rare, but not nonexistent (*Fox Industries, v. Structural Preservation Systems* (1990): inequity found in the patentee's own sales brochure, published more than a year before filing, and which π's patent attorney used as the basis of the application), and the CAFC holds that "the duty of candor extends throughout the patent's entire prosecution history," including reissue practice – three levels of misconduct: "inequitable conduct," which renders the entire patent unenforceable; "exceptional misconduct" sufficient to justify an award of attorney's fees to the other party under 35 USCA §285; common-law fraud or antitrust conduct
- *Molins PLC v. Textron, Inc.* (1995): π invented two systems of batch processing of machine parts and filed patent applications in the U.S. and several foreign countries – during foreign prosecution, π's patent attorney encountered a prior art reference by Wagenseil that fully anticipated one of the systems and impacted the other; π cited it in the foreign applications, acknowledging it as the most relevant prior art, and made several amendments to avoid it, but failed to disclose it in the U.S. application – this

patent attorney retired, and the successor, upon discovering the Wagenseil reference, cited it in a request for reexamination of the U.S. patent for the first system, and disclosed it for the pending applications for the second system – the examiner affirmed the validity of the patent in light of Wagenseil, and π excluded the claims in the second system that Wagenseil rendered unpatentable – Δ, accused infringer of the second U.S. patent, raised this background as evidence of inequitable conduct sufficient to bar enforcement of either patent – trial ct affirmed, describing this scenario as "the exceptional case among exceptional cases" – CAFC affirmed invalidation of π's patents: the facts indicate that π's experienced patent attorney knew of a reference highly material to the U.S. application, and did not disclose it, though he disclosed it to several foreign offices – the trial ct was not "clearly erroneous" in construing this as "overwhelming circumstantial evidence" of intentional concealment – π contends that the reference was not material, because the examiner of the reexamination did not cite it to reject any claim; however, several claims rejected as obvious (citing several sources) would have been clearly anticipated by Wagenseil – thus, it is clearly material simply by being the closest prior art, as π repeatedly conceded to foreign patent offices – the fact that π eventually cited this prior art to the USPTO is inadequate; π failed to cite it at the appropriate stage, where it may have been more fully considered – it is true that charges of inequitable conduct are so common (and groundless) as to "have become an absolute plague" (*Burlington Industries, Inc. v. Dayco Corp.* (1988)), and the inevitable occasion of references "falling through the floorboards" in the complex field of patent prosecution with crowded prior art; but the trial ct's inference of intentional concealment is not "clearly erroneous"

- Purging inequitable conduct: *Molins* demonstrates an (insufficient) attempt to reverse the damage of prior inequitable conduct – however, this is possible with the following steps: the applicant must advise the USPTO of the inequitable conduct, disclose the appropriate facts and the potential need for further examination in light of these facts, and of course prove that the invention is still patentable in light of the previous facts (*Rohm & Haas Co. v. Crystal Chemical Co.* (1983)) – dicta from *Molins* indicates that inequitable concealment may be negated by the examiner's own discovery of the prior art (during the appropriate stage of discovery), but other opinions, including a dissent in *Molins*, dispute this result
- International practice: "Inequitable conduct" is actually not a defense to a foreign patent, but anyone can bring a "nullity action" against an issued patent on this basis – the action is heard by a specialized patent tribunal, and these proceedings are much faster and more affordable than infringement trials in the U.S., and because of the English routine rule of shifting litigation costs to the losing party, the applicant may not only find his patent invalidated but may have to pay for the whole nullity action

§12.4 Double Patenting

- Double patenting: 35 USC §101 states that an inventor of a new process may receive *a patent* for it; this implies only one patent, and the courts have used this as the basis for a double patenting rejection – this is a distinct and important area of patent law, since some sections of 35 USC §102 render prior art relevant only if it's "by another," and patentees might otherwise obtain a multiplicity of patents on the same or obviously similar inventions
- *Miller v. Eagle Manufacturing Co.* (1894): π invented an improved spring component of a plow for improved leverage on beam components of the plow – π filed a patent

application for the spring that resulted in two divisional patents: one claiming the use of the spring for lifting and depressing the beams, and one for designing the spring for dynamic strength of beam lifting proportional to the movement of the beams – the patent applications featured identical drawings and near-identical specifications – Δ, accused infringer, asserted that π had engaged in double patenting that should nullify both patents – trial ct found for π – Supreme Ct reversed and invalidated π's later patent: π's invention consists of a spring for moving the beams of the plow up and down; it functions identically in both patented devices – the second patent merely focuses on a different result achieved by the same invention, but this is not the proper delineator of inventions – the former invention wholly includes the latter, which merely focuses on a different property of the same invention – a patentee may file a second application for an obvious modification of a prior invention, but cannot file a second application that is wholly anticipated by the first – had these two patents been granted to different parties, the latter would clearly infringe the former, and the patentee of the former would have been entitled to the use of the latter

- Design patents: It is relevant that an inventor may properly obtain a utility patent for the functional aspects of an invention, and also a design patent for the aesthetic aspects of the same invention; this is appropriate as §101 does not apply to design patents
- *In re Vogel* (1970): π patented a method of packaging pork with reduced spoilage by encasing it in an airtight casing while still near natural temperature – π then filed a second patent application, claiming the use of the same method for any meat in general, and with a dependent claim for beef in particular, while also providing more specifics for the air permeability of the packaging – trial ct rejected all of π's claims on the grounds of double patenting, holding beef and pork to be equivalent – CCPA reversed in part, allowing some of π's claims: double patenting my take the form of same-invention double patenting or obvious double patenting – the former, on which the trial ct ostensibly relied, asks if the same invention claimed in the prior and current applications – one way to answer this question is to consider whether any of the claims of the earlier application would anticipate a claim in the latter application – the latter, obvious double patenting, focuses on whether any claim of the latter application is an obvious variation of the former application – this is a very difficult question, because the actual specification can't be used against the inventor to create an obviousness rejection; however, the specification can be used to demonstrate an invention under the former application that might be useful for this test – i.e., although the teachings of the prior application are unavailable for this test, the embodiments taught in it should be used to consider whether any claim in the latter application is an obvious modification – the consequence of these tests is that "same invention" double patenting is strictly prohibited, whereas obvious double patenting is allowed if the applicant files a terminal disclaimer for the obviated material – here, the "same invention" is not being claimed twice, because pork is not the same as beef or meat; as for "obviousness" double patenting, the claims for "beef" do not read on the "pork" packaging method of the earlier patent, but the claims for "meat" do read on it – thus, the beef claim is allowed, but the "meat" claim will not be allowed absent a terminal disclaimer
- Difficulty of double patenting analysis: As evident in *Vogel*, the test for double patenting requires the comparison of one set of claims with another, combined with a review of the prior art for an obviousness-type evaluation ("Des any claim in the application define

merely an obvious variation of an invention disclosed and claimed in the patent?") – ostensibly, this is conducted without reliance on the specification as prior art; however, the CAFC adopted the CCPA approach of relying on the embodiments set forth in the specification (*In re Braat* (1991)), while denying that it was relying on the specification as prior art

- Two-way double patenting analysis: In the ordinary case, the pending application is compared against the claims of the patent, but not the other way around – in rare cases, both analyses must be conducted: where a later-filed application issues before an earlier-filed application; then, the court must also consider whether the patent discloses and claims any invention disclosed and claimed in the pending application – in this case, double patenting will only be found if both tests are satisfied; this test is more favorable to the patentee/applicant
- Terminal disclaimers: An obvious-type double patenting rejection may be overcome by filing a terminal disclaimer, under 35 USC §253, disavowing the end portion of the patent; this is done by filing a statement with the USPTO, which is then incorporated into the specification – this disclaimer may apply to the whole patent, or only to one or several claims – one additional problem is the situation where a patentee obtains several very similar patents to the same invention and assigns them to different parties, such that multiple parties now each own a patent to the same invention; an accused infringer then may face multiple infringement suits; therefore, §253 requires the disclaimer to state that the patents involved in the double patenting rejection will only be enforceable if commonly owned
- "Continuation policy": *Vogel* gives rise to a strategy of maintaining several close patent applications to the same application, letting one issue, monitoring competitors' responses, and modifying the other patent applications to encompass the competitors' deisgn-around efforts – since modifications can be made more easily to pending patent applications than to issued patents, this gives the applicant an advantage – this doctrine was found to be proper use of the patent process (*Bott v. Four Star Corp.* (1987)), and such later-issuing patents are known as "*Vogel* trailers" for this reason – of course, this would be infeasible if the U.S. conformed to the European practice of publishing pending applications 18 months after filing

Chapter Thirteen: Post-Grant Procedures

- Overview: Though most prosecution work ends with the issuance of a patent, some clerical matters may still be present – certificate of correction (§254): allows for correction of clerical and typographical errors in the issued patent; if the errors were caused by the PTO, this may even be allowed without a fee – reissue proceeding (§251): allows correction of more significant errors that may affect validity or enforcement; sometimes used to prepare for litigation – reexamination proceeding (§302): the patentee or a third party may request the PTO to consider validity in light of prior art not considered during prosecution – finally, some post-grant processes have relevance to foreign patent prosecution

§13.1 Reissue

- *Hewlett-Packard Co. v. Bausch & Lomb Inc.* (1989): π developed a plotter device that receive strong commercial acceptance – Δ discovered that a previous inventor, Yeiser, had developed a similar device and patented it; while the claims did not encompass π's

device, the specification anticipated or obviated it – Δ purchased the Yeiser patent and filed a request for reissue in order to add dependent claims that would cover π's device – Δ filed an affidavit, signed by Δ's vice-president, alleging that the patent was "partly or wholly inoperative by reason of the patentee claiming less than he had a right to claim in that he had a right to claim it more specifically," and that omission occurred "because of an oversight and without deceptive intent" – in truth, no one had contacted Yeiser at this point, and Δ's patent attorney simply told Δ's VP to sign it and not to ask any questions – the examiner rejected this affidavit as failing to specify any error or how it had occurred – Δ then contacted the (retired) patent agent, Fleming, who had filed the application, who stated that he had had little guidance from Yeiser and asserting that further claims were possible – the examiner also rejected this affidavit as failing to show who had decided the scope of the original claims – Δ then filed another affidavit by Fleming, asserting that he had only been granted a two-hour exposure to a prototype, and was then required to draft claims without any guidance from Yeiser – the examiner allowed this request; Δ obtained a reissue patent, including original (unmodified claims 1-9 and new dependent claims 10-12, and filed infringement suit against π – citing this prosecution history, π asserted invalidity, and trial ct invalidated all claims – CAFC affirmed invalidity of new claims 10-12 but upheld claims 1-9: reissue is allowed under 35 USC §251 "whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, by reason of a defective specification or drawing, or by reason of the patentee claiming more or less than he had a right to claim in the patent" – two types of error must therefore be present: the patent must be defective (partly inoperative or invalid), and the patentee must show an error during prosecution that occurred without deceptive intent – Δ attempts to satisfy both requirements simply by showing that Yeiser claimed "less than he had a right to claim" – even foregoing the questionable accuracy of the affidavits submitted to support the request, Δ's argument fails to satisfy this test – courts have repeatedly noted that "the reissue statute was not enacted as a grant to the patentee of a second opportunity to prosecute de novo his original application"; if this were true, every patent could potentially be reissued – "error" requires "accident, inadvertence, or mistake," not merely "insight resulting from hindsight on the part of new counsel" – the result of Δ's failure to demonstrate this error operates to invalidate the new claims – however, the "carry-over" claims should be permitted to stand; since Δ has not shown evidence of inequitable conduct that would justify invalidation of the entire patent, §253 should apply ("whenever, without deceptive intention, a claim of a patent is invalid the remaining claims shall not thereby be rendered invalid")

- Reissue procedure: If the patentee's request for reissue is accepted, prosecution begins *ab initio*, and this prosecution is open to the public; resulting either in a new patent (with the original surrendered and canceled) or an abandonment of the reissue application and a return of the original application (this is a bad result, since competitors can cite the abandonment of the reissue as evidence that the original is inoperative)
- Reissue practice: Patentees request reissue for three reasons: in order to add narrowing claims, in order to add broadening claims, and in order to correct errors in the specification – "broadening reissue" requests can only be made within two years of issuance, according to §251, but other grounds have no deadline – however, some errors may be so serious that reissue is inappropriate, e.g., a non-enabling specification, inequitable conduct, or anticipation – also, a "broadening reissue" cannot be used to

reclaim parts of the specification that the patentee expressly disclaimed during prosecution; this is known as "the recapture rule"

- *Ball Corp. v. United States* (1984): π filed a patent application for an antenna useful on missiles – π's original patent application featured claims focusing on the attachment of feedlines to the antenna to provide power and communications; one claim specified the use of one feedline, while another specified a plurality – the examiner rejected the single-feedline claim as anticipated by a patent to Cork, but allowed the multiple-feedline design – the patent issued, and within two years of issuance, π filed a request for reissue including claims for a single-feedline design with a somewhat different antenna configuration – the reissue was allowed, but Δ (U.S. Navy), accused infringer, cited it as an attempted recapture sufficient to invalidate that claim – trial ct denied Δ's request for summary judgment, which Δ appealed – CAFC affirmed denial of Δ's motion for summary judgment on π's patent claim: different courts apply different standards in deciding what to allow in a reissue application; the CCPA held that deliberate cancellation of claims did not automatically negate an assertion of error (sufficient to support reissue), while the Ninth Circuit applied a strict rule: "when the chief element added by reissue has been abandoned while seeking the original patent, the reissue is void" (*Riley v. Broadway-Hale Stores, Inc.*) – the former position is adopted here; cancellation may occur for many reasons, and in scenarios like this, Δ bears the burden of showing that the cancellation occurred because the claim was unpatentable – here, π has not added the same claim that the examiner rejected as anticipated by Cork; although technically broader (since increased breadth in any one aspect constitutes a broadened claim, even if it is narrower in other respects), the new claim is broader in some respects and narrower in others, i.e., different – thus, the test applied by the Ninth Circuit is inappropriately rigid
- Recapture rule: This rule is analogous to prosecution history estoppel, though it arises in a different procedural context – *Ball Corp.* suggests a very subjective standard and weak rule, but some circumstances are clearly disallowed; e.g., when an examiner receives a restriction requirement and elects one invention, but fails to file a divisional application for the non-elected invention(s), those inventions are considered abandoned (*In re Watkinson* (1990))

§13.2 Intervening Rights

- Intervening rights: 35 USC §252 provides that broadened claims in a reissue patent that were not in the original patent cannot be used against anyone else who, prior to reissue, began using (or substantially prepared to use) the later-claimed invention – a court may issue a protective order specifically permitting this third-party activity – this scenario rarely occurs, since it requires a broadening reissue of a claim that is infringed by activity beginning prior to reissue – i.e., the activity must infringe none of the claims in the original application (*BIC Leisure Products v. Windsurfing International* (1993)) – this creates two kinds of rights: an "absolute" intervening right to use anything made prior to reissue, and an "equitable" intervening right to continue infringing conduct that began prior to reissue – the former is absolute ("no reissue patent *shall* abridge or affect…"), while the latter is discretionary (the court *may* provide for the continued manufacture, use, or sale…")
- *Seattle Box Co. v. Industrial Crating and Packing, Inc.* (1985): π patented a method of bundling stacked pipes for shipment, comprising the insertion of doubly-concave wooden

spacer blocks between each pipe – the concavity stabilized each pipe and separated them from other pipes on the same level, but more importantly, the height of the spacer was claimed as "greater than the diameter of the pipe," so that each spacer bore the load of the levels above it – after π's patent issued, Δ, a competitor, sought to "design around" the patent by using wooden spacer blocks slightly less than the diameter of the pipe (so that they did not exhibit any weight-bearing feature); Δ therefore used such blocks, made out of inventory on hand, and ordered more blocks that would not infringe – π later obtained a reissue patent, claiming the use of blocks of height "substantially equal to or greater than" the pipe diameter, and sued Δ for infringement – Δ asserted intervening rights, but trial ct denied such defense, because Δ had received its order for infringing blocks and used them after π's reissue – CAFC reversed and allowed Δ's use as intervening right: two facts weigh in favor of Δ's defense: first, its order for shorter blocks was an intentional (and successful) attempt to design around π's original patent; second, Δ's order for additional blocks constitutes a contractual obligation that Δ would have had to break (or fulfill for no value) in light of π's broadening reissue, which would constitute a "gross injustice" – another important factor in such circumstances is the cost to the accused infringer of mitigating damage; the strength of its claim for intervening rights is directly proportional to the cost of mitigating infringement – however, this is irrelevant here, as Δ had already used all of its infringing spacer blocks prior to infringement litigation – based on these facts, Δ's use of the spacer blocks is protectible as an intervening right, and Δ is not entitled to damages for such use

§13.3 Reexamination

- Reexamination: This proceeding is used to consider any "substantial new question of patentability," and is an equivalent to the opposition proceeding allowed in many foreign nations – anyone can request reexamination, including the patentee, a competitor, a member of the public, or the Commissioner of the USPTO
- *In re Recreative Technologies Corp.* (1996): π created a cleaning device (a towel/brush combination) to be attached to golf bags – the examiner cited a reference by Ota as obviating prior art, but π traversed this rejection, and the patent issued – Δ, accused infringer, requested reexamination on the basis of several references, including Ota; the request was granted, and the examiner rejected π's patent as obvious in light of Ota – the Board affirmed, only shifting the basis as anticipation in light of Ota – CAFC reversed and vacated the result of the reexamination: reexamination proceedings are intended to strengthen the presumed validity of patents by dealing with new questions of patentability – however, the scope of §303 is limited to "substantial new questions of patentability"; this expressly rejects a reconsideration of previously adjudicated issues, which would allow competitors to harass patentees with repeated requests for reexamination – the Commissioner relies on an MPEP section authorizing the use of all prior art in a reexamination proceeding once it has been commenced, but this section obviously exceeds the limitation of §303, and is therefore held void – whether or not the patent is invalided by Ota, the reexamination proceeding is vacated, because Ota should not have been available for consideration
- "Substantial new question": Many cases have arisen that deal with whether a question of patentability is "substantially new" – *In re Portola Packaging, Inc.* (1997): patent application for a bottle design was initially rejected either as obvious in light of Hunter, or as obvious in light of Faulstich and others; the patentee traversed this rejection and

obtained a patent – ten years later, π's patent was reexamined, and the examiner rejected it as obvious in light of both Hunter and Faulstich – CAFC reversed, holding that even though this particular rejection was not cited during prosecution, nevertheless the availability of the references to the examiner prevented them from raising a "substantial new question"

- *Ex parte* examination: When reexamination is requested by a member of the public, he files an initial request for the reexamination; the patentee may then respond or file an amendment, and the public member may reply – this ends the public's involvement in the proceeding, effectively transforming the proceeding from *inter partes* to *ex parte*, though it remains public – some initiatives are under way to create a full *inter partes* examination process [and were passed after the authorship of this text, as part of the American Inventors Protection Act], but the USPTO [at the time of this publication] opposed this initiative, citing its inability to handle a full adjudication in the context of an administrative hearing
- Presumption of validity: Although 35 USC §282 creates a presumption that an issued patent is valid (shifting the burden of proof to the defendant), the CAFC has held this rule inapplicable to reexamination proceedings (*In re Etter* (1985)) – the disparity is due to the different context: patents are presumed valid in an attack against an accused infringer, but in the context of a proceeding to determine its validity, presuming it to be valid would substantially answer this question
- Prior art citation: Rather than requesting reexamination, an accused infringer may simply cite prior art to the USPTO after the patent issues (35 USC §301); this does not instigate any kind of proceeding, but it simply makes the prior art a matter of record – in exceptional cases, this may encourage the USPTO to initiate reexamination *sua sponte* (e.g., Compton's multimedia patent, U.S> Patent No. 5,241,671)

§13.4 Overview of Post-Grant Procedures Abroad

- Foreign post-grant proceedings: Japan and the EPO both allow opposition proceedings (conducted by the foreign patent office, and must be filed within nine months of issuance) and nullity proceedings (usually adjudicated before a specialized patent court, and can be brought at any time)

Chapter Fourteen: International Prosecution

- Overview: Each patent provides protection in one country, so inventions with international markets require simultaneous prosecution of many patents – this can be difficult to coordinate, especially given the disparate patent procedures and standards of various countries – some conformity and consistency is provided via the Paris Convention Treaty (PCT), which consolidates many countries under one set of rules

§14.1 The Paris Convention

- Paris Convention for the Protection of Industrial Property (1967): The Paris Convention consolidates international protection of copyright and trademark laws, but its most significant impact is the guarantee of international priority for patent applications: the filing of a patent application in one Paris Convention signatory country conveys priority for all Paris Convention signatory countries, as long as subsequent applications are filed in other countries within 12 months (limited to 6 months for design patents) – this filing deadline is very strict, but it is also limited to the dates of filing; even the abandonment of the original patent application does not affect the later-file applications – also, priority

only applies to matter disclosed in the original application, but how the claims are structured is irrelevant – also, both applications must be filed by the same applicant, must be for the same invention, and must be for a "patent" (however such protection is allowed in the Paris Convention nations in question) – finally, the applicant must declare that the filings are occurring under Article 4, Section D, §119(b) of the Paris Convention

- *In re Gosteli* (1989): π filed a patent application in Luxembourg with a Markush group claim for a class of materials – later, π filed a U.S. application claiming a broader Markush group, which the examiner rejected in light of a prior art reference by Menard that published between the Luxembourg application and the U.S. application – π asserted priority for the U.S. application based on the Luxembourg application, which the examiner rejected since the applications did not claim "the same invention" - CAFC affirmed rejection of π's priority claim: 37 CFR §1.119 allows applicants to establish priority based on an earlier foreign application, but only if it claims "the same invention" – π argues that the Luxembourg specification encompasses the teaching of the Menard reference, but this is not part of the priority test – π also asserts the Luxembourg reference as evidence of prior reduction to practice, in order to "swear behind" the Menard reference under 37 CFR §1.131 – however, this requires evidence of activity demonstrating prior conception to have occurred in this country; the Luxembourg reference does not indicate activity in the United States, and is therefore inadequate to support an antedating affidavit – π can claim priority by limiting his current patent application to the subgenus claimed in the Luxembourg application, but not by claiming the whole genus
- Antedating activity overseas: The TRIPS agreement requires amendment of 35 USC §104 to allow evidence of prior conception by overseas activity, which would have caused a different result in *Gosteli*

§14.2 The Defensive, Patent-Defeating Right

- International standards: The minimal Paris Convention rule of priority is that when a patent issues, everything that is claimed is given priority (and will defeat subsequently-filed applications) as of the date of the first priority document (usually the Paris Convention publication) – however, many nations have broadened this rule to include everything that the patent discloses, and this matter is given priority as far as it can be traced back in the chain of publication – the U.S. rule is different, and is illustrated by *Hilmer*
- *In re Hilmer* I (1966): π filed a German patent application on July 31, 1957, and a U.S. application on July 25, 1958 – another inventor, Habicht, filed a similar application in Switzerland on January 24, 1957, and filed in the U.S. on January 23, 1958 – π and Habicht engaged in an interference proceeding that Habicht won, requiring π to remove a few anticipated claims – the examiner then rejected the rest of π's patent application as obvious in light of the Habicht patent, which the examiner accorded priority based on the interference finding – π asserted that this was inappropriate, since he was entitled to a priority date from his German filing, but the Habicht patent only counted as prior art under §102(e) as of its later U.S. filing – the Board affirmed the prior-art status of the Habicht patent – CCPA reversed and allowed π's claims: the Board's finding overturns a long-standing doctrine of priority – its finding is based on conflation of "priority" in different contexts: award of patent rights and designation as prior art – a mechanical application of the rules of priority allows π to claim priority back to his German filing,

but the plain language of §102(e) restricts consideration of Habicht's patent to the U.S. filing date – a lengthy review of the statutes follows: §119, the basis for awarding priority through an interference proceeding, clearly focuses on priority in an interference proceeding; the congressional report supporting the legislation even states: "this statutory provision has no bearing upon the right of another party to a patent except in the case of an interference where the two parties are claiming the same patentable invention" – §102(e), the prior art statute under which Habicht was used, is a patent-defeating statute, not a comparison of priority; this statute grants prior-art status to applications that later issue as patents upon their earliest filing with the USPTO – no basis exists for contravening the plain language of §102(e) – taken together, §102, §103, and §104 indicate that knowledge in foreign countries should not automatically preempt U.S. patentability

- *In re Hilmer* II (1970): Upon remand from *Hilmer* I, the Board again rejected π's application, this time as obvious in light of Habicht and Wagner under §102(g), read in light of §119 and §104 – the Board's reasoning was essentially the same: §102(g) bars patents for inventions that were previously invented by another; in considering when Habicht invented his technology to determine if it was "previous," some date must be selected, and it may as well be the U.S. filing; and under §119, the U.S. filing date should be taken as the date of the Swiss application from which it stems – CCPA reversed and allowed π's claims: for the same reason as in *Hilmer* I, this reasoning is rejected; the §119 filing date adjustment is only relevant to determination of priority in an interference, which is not happening in this case – the rules for determination of priority are completely different from designation as prior art
- Consequences of *Hilmer*: Many consider *Hilmer* a violation of the Paris Convention Treaty – most patent practitioners simply avoid running into this problem by filing first in the U.S., which can be achieved by filing a provisional if the claims aren't yet ready – this practice is at odds with EPO and Japanese practice, which considers a reference prior art as of its earliest reference anywhere – however, *Hilmer* clearly favors U.S. patentees, who will otherwise have their U.S. applications anticipated or obviated by foreign filings; therefore, a 1992 commission on patent law reform recommended against abandoning *Hilmer* except as part of a harmonization effort that had other clauses favorable to the U.S.
- *In re Deckler* (1992): π engaged in an interference proceeding with another patentee, Grataloup, and lost on the basis of Grataloup's claim of priority based on earlier foreign filing (in fact, π had conceived first, but had concealed the invention and lost priority) – π's claims were found to be anticipated by Grataloup's, and so the examiner rejected them on this basis – the Board affirmed on the basis of *res judicata*, noting that "the same issue" had been considered in the interference as was being considered in prosecution – CAFC affirmed rejection of π's patent: π argues that the ruling in *Hilmer* should control, and should disqualify Grataloup as prior art; however, *Hilmer* was premised on an obviousness rejection, whereas this is an anticipation rejection, so this logic does not extend – the rejection of π's patent application as anticipated by Grataloup's is therefore affirmed
- Reconciling *Deckler* and *Hilmer*: It is difficult to reconcile these cases; commentators have interpreted *Deckler* as overruling *Hilmer*, although some consider *Decker* an

erroneous result, since it ignored the §102(g) term "in this country" on which the *Hilmer* decision hinged

§14.3 Complementary International Agreements

- Paris Convention Treaty: The PCT sets forth a unified initial process for international patent filings – within one year of filing in the home country of the inventor, the application may be filed as a PCT application, designating states in which protection will be sought – the application is automatically published 18 months from its priority date, and then may (if the applicant so requests) undergo international preliminary examination – within thirty months, the applicant must convert the PCT application into a series of "national-stage" parallel foreign applications, which all begin with the international preliminary examination report – the timing of these requirements is meant to encourage international filing by granting the applicant time to find a licensee willing to pay the substantial national-stage filing costs
- European Patent Convention: Many European countries join together to allow one application and patent to be enforceable in all of them – each country assigns its own rights to the patent based on its laws

§14.4 A Multinational Technology Protection Primer

- Overview: International patent protection should be regarded in three stages: preliminary application, perfected application, and improvement applications – the preliminary application should be filed as early as possible, anywhere, to secure a filing date – the "worldwide," perfected application is filed within 12 months, and should be filed with any refinements made in anticipation of filing in separate countries; this step is made considerably easier by PCT patent practice, but attention should be given to which body is chosen to examine the application (the search authority in the Hague is currently much better than the USPTO's agents) – some PCT deadlines may be deferred by prospectively waiving a claim of priority – the selection of countries can be considered well after the filing of the PCT application, and should consider prosecution differences in each country

Chapter Fifteen: Infringement

- *Autogiro Co. of America v. United States* (1967): (provided only for background) – infringement actions were first codified by the Patent Act of 1952 as 35 USC §271, but this merely reads: whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefore, infringes the patent" – no statement of relief, procedure, etc.; all details regarding infringement actions are judicially-created concepts – the basis of any infringement action is the set of claims in the patent, but this is complicated because no claim is clear and unambiguous; as Frankfurter noted: "unlike mathematical symbols, the phrasing of a document, particularly a complicated enactment, seldom attains more than approximate precision; if individual words are inexact symbols, with shifting variables, their configuration can hardly achieve invariant meaning or assured definiteness" – thus, courts must consider what idea each claim was intended to capture, and must take into account the specification, drawings, and file wrapper, as well as the terminology in the field of art – the file wrapper is also useful for establishing file-wrapper estoppel, where the applicant inserts limitations and restrictions in exchange for issuance, and therefore disavows any

later claim that such are covered by the patent – once the claims have been interpreted, the court "reads the claims on the accused structures" to determine infringement, which exists if a claim literally covers the accused invention, and also if the structures "do the same work, in substantially the same way, and accomplish substantially the same result" (*Dominion Magnesium Ltd. v. United States* (1963)) – thus, literal infringement is not the only step in the test – on the other hand, if the claims do not literally read on the device, infringement may still exist if the doctrine of equivalents if the structures "perform substantially the same function in substantially the same way and for substantially the same purpose" – this range of equivalence varies per patent: pioneer patents, and those that diverge from the prior art by a wide margin have broader scope than those in a crowded field – the key test is whether practitioners of ordinary skill in the art would have considered the structures interchangeable

- Interpretation vs. construction: Prior to *Markman*, the USPTO viewed "construction" as the judicial parsing of the claims, and "interpretation" as the USPTO parsing of the claims – the purpose of this dichotomy was to separate USPTO interpretive doctrines from CCPA/CAFC interpretive principles (*Burlington Industries v. Quigg* (1987)) – the CAFC has acknowledged that claims should be interpreted more broadly during prosecution (when the claims are still malleable) than in litigation, but *Markman* consolidated some of this parsing logic
- Exhaustion: The "first sale" or "exhaustion" doctrine states that a purchaser of an embodiment of the patentee's technology may use, resell, or repair that embodiment; the patentee's patent enforcement rights cannot be used against this activity (*Adams v. Burke* (1873)) – however, the purchaser doesn't have any other rights under the patent (e.g., can't reproduce the embodiment and sell copies) – the patentee and purchaser may limit or extend these rights through a license agreement

§15.1 Literal Infringemetn

- *Markman v. Westview Instruments, Inc.* (1995): π invented a computerized method of tracking clothing in a dry-cleaning environment, identifying each garment by a bar code and keeping a computerized record of the progress of the garment through the system – π's claims disclosed a system with an input device, a data processor, a dot-matrix printer, and an optical scanner, and a dependent claim adds a keyboard – Δ was accused of infringing through sales of its DATAMARK and DATASCAN system, which labeled garments with barcodes but only tracked the invoice number, date, and cash total; no data about the processing of the garment was tracked – district ct instructed the jury about infringement, and then asked it to interpret the claims and decide infringement; jury found for π on several claims, but ct granted JMOL for Δ, primarily because Δ's device lacked the claim 1 element of "means to maintain an inventory total" (with "inventory" being interpreted as an individual garment, not a batch of clothes, a cash payment, or an order receipt) – CAFC affirmed verdict for Δ but changed the basis for the verdict: infringement analysis is carried out in two steps: determining the meaning of the claims and applying it to the accused device – the court is supposed to conduct the first part, claim interpretation, and the second part is left for the jury – the first step is a matter of law, for several reasons: longstanding precedent (*Levy v. Gadsby* (1905): "the construction of a written evidence is exclusively with the court", and *Bates v. Coe* (1879), confirming that a patent is primarily a "written instrument"); judicial construction has more weight as precedent ("it is as if the construction fixed by the court had been

incorporated in the specification"); predictability and consistency (*Merrill v. Yeomans* (1877): "nothing can be more fair and just, both to the patentee and to the public, than that the former should understand, and correctly describe, just what he has invented, and for what he claims a patent") – π contends that the jury interpreted the term "inventory" did not mean specific articles, but rather orders, and therefore argues that the trial jury's interpretation was more correct than the Board's – the evidence bearing on this issue includes intrinsic evidence (the specification, the drawings, and the file wrapper), which cannot "enlarge, diminish, or vary" the limitations of the claims, and extrinsic evidence (expert testimony, reference to other texts, etc.), which the court "may" consult in its discretion (*Seymour v. Osborne* (1871)) – in accepting certain evidence and rejecting other evidence, the court is not ruling on the credibility of any evidence, but is simply fulfilling its duty of interpreting the claims – here, the court properly accepted expert testimony that was helpful to explain the claims, and rejected testimony that contradicted the intrinsic evidence and rendered some of it nonsensical – the former interpretation is also consistent with many statements in the specification and prosecution history suggesting "inventory" meant "item of clothing" – in support of the jury's interpretation, π offered his own testimony, as the inventor, and that of his "patent expert"; but these are due no weight, as they are merely legal conclusions, which the court had complete discretion to reject – π also offered some sales literature and the testimony of Δ's president, but this is extrinsic evidence that would change the meaning of the claims as suggested by intrinsic evidence – π argues that allowing the judge to construe the claims effectively deprives him of the right to a jury trial, but claim interpretation is analogous to statutory interpretation, which has always been the province of the judge, even when it is the dispositive issue in the case – Mayer concurrence: the majority opinion "jettisons more than two hundred years of jurisprudence and eviscerates the role of the jury, and marks a sea change in the course of patent law that is nothing short of bizarre" – in light of the fact that claim interpretation disposes of almost every case, this ruling effectively removes the jury from the trial process – while the scope of a patent is a question of law, claim construction is not necessarily so; past decisions have presented it as a mixed question of law and fact (*Arachnid Inc. v. Medalist Mktg. Corp.* (1992): claim construction "may require the factfinder to resolve certain factual issues such as what occurred during the prosecution history") – the old English courts gave deference to jury verdicts in such cases, and the Patent Act of 1790 expressly granted the jury the duty of awarding damages – Newman dissent: the majority opinion effectively casts infringement as the jurisdiction of administrative judges – this is at odds with the nature of infringement as a factual question, depending on terms of scientific art and technology, previously clarified by expert testimony, and previously considered "underlying facts" – the entire question here is whether "inventory" includes individual garments, and the majority ruling grants judges exclusive right to decide this question – this raises a serious question about the Seventh Amendment right to a jury trial

- Consequences of *Markman*: The Supreme Ct affirmed the CAFC's holding in *Markman* on the basis of historic precedent – this rule was intended to improve uncertainty in trials, and to encourage settlement of litigation faster by getting a critical ruling in a limited hearing – however, legal rulings carry less weight on appeal than factual inquiries, so some of the benefit may have been negated by more frequent appeal of district ct rulings to the CAFC, and more frequent appeal of CAFC rulings to the Supreme Court – an

important footnote in the *Markman* majority opinion indicated that this ruling had no impact on determinations of equivalence under §112 ¶6

- Extrinsic evidence: The CAFC has repeatedly noted that the sole purpose of extrinsic evidence is to clarify the meaning of the claims – it cannot change or contradict the claim language in any way, so when the patent scope is clear from the intrinsic evidence, the judge should exclude extrinsic evidence – prior art references are usually more dispositive than expert testimony, since it is not usually written with an eye toward litigation; and as noted in *Markman*, the testimony of the patentee and legal counsel have no weight, since they're obviously self-serving
- Literal infringement analysis: The test of literal infringement is to see whether every limitation of a claim reads exactly on the claimed invention (*Lantech, Inc. v. Keip Machine Co.* (1994)) – a common, but completely incorrect, test is to compare the patentee's commercial embodiment with the accused infringing technology; the CAFC has repeatedly rejected this test (*Zenith Labs v. Bristol-Myers-Squibb Co.* (1994)) – the claims are intended to be read in light of the specification, but limitations in the specification are not supposed to be imported into the claims, though this balance is difficult to achieve
- *Unique Concepts, Inc. v. Brown* (1991): π invented a framework for a fabric wall hanging, consisting of straight edge pieces and right-angle corner pieces – Δ, competitor, made a similar frame comprised solely of edge pieces, and with the ends mitered into 45-degree pieces; Δ's frame lacked any right-angle corner pieces, but the frames were nearly identical when assembled – trial ct found that Δ's frame did not literally infringe π's patent – CAFC affirmed lack of infringement of π's patent: claim 1 unambiguously includes a right-angle corner piece as a component, but Δ's implementation has no such component – π argues for considering the structure as a whole, but this would violate the "all elements rule," which focuses on whether every element of a patent is represented in the accused infringing device – π also cites part of the specification that suggests replacing the pre-formed corner pieces with frame pieces with mitered corners that abut against a spacer element; however, this specification passage cannot change the clear language of the claims; thus, it appears that this embodiment was disclosed but not claimed – because every limitation in a claim must be given effect in interpretation (*Perkin-Elmer Corp. v. Westinghouse Elec. Corp.* (1987)), π's right-angle edge piece cannot be disregarded – Rich dissent: Δ's embodiment inevitably creates corners, in the same manner as π's corner pieces – also, "pre-formed" is not written anywhere in the patent; it seems that the majority is importing this limitation from the specification – also, the "all elements rule" is satisfied, since claims aren't being combined or overlooked; they are simply being considered as forming a border piece, which Δ's elements perform in conjunction
- Limitations imported from the specification: A companion case to *Unique Concepts* is *Wolverine World Wide Inc. v. Nike, Inc.* (1994): π patented a "slipper-sock" built into a shoe with an elastic fore portion that gripped the front of the foot, and claimed "a forefoot-enveloping and gripping elastic slipper sock," and π sued Δ for infringement based on its version that included an elastic band around the instep but stopped before the toes – CAFC refused to find infringement, based on the specification limitation that suggested including the toes; ostensibly, the CAFC interpreted the term "forefoot" based on its use in the specification – the high-water mark in this trend is *North American*

Vaccine v. American Cyanamid Co. (1993), where π's invention (involving a linkage modification in "a terminal portion" of a vaccine to improve the immune response) was held not infringed by Δ's version (which linked across both terminal ends); the CAFC held that "a" meant "one," because π had consistently suggested this linkage in the singular (the dissent argued that π's specification contained no suggestion of singularity)

- Claim differentiation: This principle holds that if the invention includes multiple claims, especially ones that depend on each other, then each should be interpreted as claiming the invention in a distinct way; i.e., different words should be presumed to have different meanings – however, "claim differentiation is a guide, not a rigid rule" (*Laitram Corp. v. Rexnord, Inc.* (1991)), implying that this doctrine is seldom used, and then only to support a construction reached on other grounds
- Limitations imported from prosecution history: *J.T. Eaton & Co., Inc. v. Atlantic Paste & Glue Co.* (1997) involved an improved glue for a mousetrap, which π defined as novel according to its "plastic flow temperature above 120 degrees" – the claims stated that the glue could withstand upside-down positioning at 120 degrees, or sideways positioning at 77 degrees, which covered Δ's glue – however, the CAFC also interpreted this to mean that the glue must be capable of withstanding a vertical tray positioning at 120 degrees (since 120 degrees was an integral limitation of the claim), basing this conclusion on a single declaration made to the examiner during prosecution; the CAFC thus denied an infringement verdict because Δ's glue could not withstand this test – the dissent called this conclusion idiosyncratic, as it was based on a few notes in a 1,400-page file wrapper, notes that the absence of this qualification in the claims refutes its importation, and even noted that the limitation excluded the preferred embodiment disclosed in the patent – as per *York Prods., Inc. v. Central Tractor Farm & Family Ctr.* (1996), such limitations can be read in if made to avoid an examiner rejection based on prior art (file-wrapper estoppel), but *Eaton* seems like an amazingly broad enforcement of this rule; but as per *Modine Mfg. Co. v. U.S. Int'l Trade Comm'n* (1996), an interpretation that excludes the preferred embodiment should usually be rejected

§15.2 The Doctrine of Equivalents

- *Graver Tank v. Linde Air Products Co.* (1950): π, Linde Air Products, created and patented a welding flux called Unionmelt Grade 20, a novel composition of alkaline earth metal silicate and calcium fluoride; the commercial formulation used calcium and magnesium as the alkaline earth metal silicates – Δ, Graver Tank, competitor, produced a similar flux called Lincolnweld 660, which substituted manganese silicates for Unionmelt's use of magnesium silicate, on the premise that manganese is not an alkaline earth metal; despite the substitution, the products produce the same kind and quality of weld – trial ct found Δ to have infringed π's claims under the doctrine of equivalents, and appellate ct affirmed – Supreme Ct affirmed Δ's infringement of π's patent: infringement analysis begins with consideration of literal infringement, going by the words of the claims – however, a negative result does not constitute non-infringement; courts also evaluate the equivalence of the inventions, because "to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing"; this is important because most copying makes some changes in an attempt to avoid infringement – thus, in the absence of literal infringement, courts apply the doctrine of equivalents, originating in *Winans v. Denmead* (1853), which considers whether the accused invention "performs substantially the same

function in substantially the same way to obtain substantially the same result" (*Sanitary Refrigerator Co. v. Winters*) – this logic may also be applied against the patentee to exclude an invention that literally infringes, but operates in a substantially different way (*Westinghouse v. Boyden Power-Brake Co.*) – applying this doctrine requires consideration of the purposes and function of each component, both in isolation and in conjunction with the rest of the invention – one important test is whether one "reasonably skilled in the art": would recognize the interchangeability of the component with its equivalent – this is a subjective test, because it is based on subtle technical details, and considerable deference will be given to the trial ct finding – here, chemists in the field and metallurgists testified that magnesium and manganese performed identically in these circumstances, and several prior art references indicated the same; also, Δ has no evidence of independent formulation of Lincolnweld – the trial judge viewed movies of the welding operations, and even visited laboratories to view welding experiments – his ruling is consistent with all of the evidence; "it is difficult to conceive of a case more appropriate for application of the doctrine of equivalents," and Δ's changes appear to be merely "colorable" – Black dissent: the majority's extension of π's patent violates the Congressional directive that the patentee "particularly point out and distinctly claim" his invention; this directive prohibits the modification of unambiguous claim language – the basis for this restriction is that subject matter not explicitly claimed is dedicated to the public (*White v. Dunbar*) – the majority applies the doctrine of equivalents in order to avoid unfair hardship on the patentee, but Congress created reissue practice to avoid this hardship; even this amelioration was supposed to be "the exception and not the rule" (*Miller v. Brass*) – the doctrine of equivalents is certainly useful, but should not be applied in the absence of unequivocal claim language – its applicability here is negated by π's extensive experimentation with manganese silicate as a welding material, and subsequent failure to claim it – Δ had a right to conclude that manganese silicate, which was not covered by the patent – this ruling sets a bad precedent for businesses striving to avoid infringement – Douglas dissent: manganese silicate is not an alkaline earth metal, and so is not covered by the patent – the majority holding grants a patent monopoly to an unpatentable formulation

- Application of the doctrine of equivalents: This doctrine is most often used to correct claim-drafting errors that would otherwise allow a competitor to exploit a loophole – *Graver Tank* is unusual for not addressing an error; rather, the claims that specifically covered the accused product were rejected as non-enabling, but a different claim was used to fill the gap – more typical example: *Maxwell v. J. Baker, Inc.* (1996) (one of ordinary skill in the art, when shown the efficacy of magnesium silicate, should know without experimentation that manganese silicate would function identically; thus, the failure to exclude the latter from the claim by including "alkaline earth metal silicates" is a claim-drafting error of the kind remedied by the doctrine of equivalents) – *but see Sage Products, Inc. v. Devon Industries, Inc.* (1997) (CAFC refused to apply doctrine of equivalents to a very narrow claim with several structural limitations; the patentee should know that this claim is of narrow construction, and if he wanted broader protection, he should have argued for it during prosecution)
- "Function-way-result" test: Though oft-used, this test has little value, and subsequent cases have not clarified its meaning – usually, this test collapses to "way," since devices that don't perform the same function, or with the same result, are rarely accused of

infringement – thus, other decisions criticized its use as a "ritual which has so little meaning" (*Claude Neon Lights, Inc. v. E. Machlett & Son* (1929))

- *Hilton Davis Chemical Co. v. Warner-Jenkinson Co.* (1995): π patented an ultrafiltration technique for purifying food-additive dyes, first filing a narrow patent, and after additional experimentation, filing a CIP application with broader claims – the CIP expressly claimed the process "at a pH from approximately 6.0 to 9.0" in order to avoid prior art that operated above pH 9, and optimally at pH 11 – Δ developed a similar ultrafiltration process for the same dyes that operated at the same temperature and pressure, but at pH 5 – π sued for infringement; trial ct affirmed infringement and permanently enjoined Δ (but found infringement to be unintentional, and awarded only 20% damages) – CAFC affirmed Δ's infringement of π's patent: this case allows a reaffirmation of the doctrine of equivalents, created by Circuit Justice Story shortly after the passage of the Patent Act of 1790 (*Ordione v. Winkley* (1814)) to protect patents from infringers who make "merely colorable" modifications – its use was more recently affirmed in *Graver Tank v. Linde Air Products Co.* (1950), holding that affording only literal infringement protection against a patent "would place the inventor at the mercy of verbalism and would be subordinating substance to form" – the doctrine of equivalents has long been applied by use of the function-way-result test (*Gray v. James* (1817)), but this test is more applicable to simple mechanical inventions than the complexities of newer technology; thus, other factors of relevance are considered, such as whether one of ordinary skill in the art would recognize the original and varied components as interchangeable, and evidence of copying by the accused infringer – the purpose of the doctrine of equivalents is to prevent "fraud on a patent" (*Graver Tank*), but this doesn't imply that intent is an element; in fact, it's irrelevant except for damages – on the other hand, evidence of designing-around is very relevant, the right of competitors to design around the patent is an important public benefit (*State Indus., Inc. v. A.O. Smith Corp.* (1985)) – evidence of independent development helps rebut a suggestion of copying, but doesn't help determine the substantiality of differences – equivalence is a question of fact, and relevant evidence includes expert testimony, technical documents, and the prior art; however, the judge is responsible for determining which evidence is relevant – if the case is tried by the court, its decision should be reviewed on a "clearly erroneous" standard; and although this doctrine is called an "equitable" test, it's purely a legal determination, so equity concepts like "clean hands" don't apply – here, the question is the substantiality of pH 5.0 over pH 6.0 in this ultrafiltration process: experts (even Δ's) testified that π's process would work fine at pH 5.0, or any pH above 2.0 – while the doctrine of equivalents is rendered unavailable by file-wrapper estoppel (*Insta-Foam Prods., Inc. v. Universal Foam Systems, Inc.* (1990)), the court must consider whether why the patentee limited his claim; here, the limitation was made to exclude pH above 11, with no regard to the lower range boundary – thus, the court's verdict was adequately supported and is not clearly erroneous – Newman concurrence: doctrine of equivalents cases arise primarily in four scenarios: 1) the patent claimed the infringing use, but the broad claim was invalidated or limited (*Malta v. Schulmerich Carillons Inc.*(1991); 2) the patent simply failed to claim the infringing use (*Rite-Hite Corp. v. Kelly Co.* (1987)); 3) the accused infringer made "obvious" changes to avoid the patent (*Laitram Corp. v. Cambridge Wire Cloth Co.* (1988)); 4) technological advancement has rendered a step or component unnecessary (*Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.* (1989)) –

however, in each scenario, equivalence can be found in one case but not found in a very similar case – unfortunately, no better test of equivalence has been conceived, so the doctrine of equivalents will have to be used – Plager dissent: the patent act contains no general mention of "equivalents," but does require the inventor to "distinctly claim" his invention; Congress explicitly included "equivalents" in §112 ¶6, and its absence elsewhere implies its unavailability – the doctrine of equivalents is a judicially-created concept, and courts should hesitate to create or apply such concepts in light of directly contravening legislature – the majority use of this test clouds the interpretation of unambiguous claim language, which even courts of equity (in which system the doctrine of equivalents sounds) took such measures only in rare cases – Lourie dissent: the majority relies on the function-way-result test, which is unclear and should be discarded: even together, these three aspects don't really define what the invention is, let alone its substantial similarity to an infringing device; and occasionally, devices that perform in the same "way" but should not be considered equivalents – e.g., in chemistry, many classes of compounds may perform the same function in the same way and reach the same result, but exhibit such structural dissimilarity that they do not infringe each other – also, *Pennwalt Corp. v. Durand-Wayland, Inc.* (1987) encouraged use of the function-way-result test for each element, but often (especially in chemistry) these facts aren't known for a particular component – Nies: though the fact-finding process in the doctrine of equivalents is a question of law, the ultimate issue of claim interpretation remains a question of law

- Scope of equivalents for "pioneer" patents: Most prior descriptions of equivalence mention that pioneer patents are due broader scope, but *Hilton Davis* is notably silent on the issue – most patentees seem to claim pioneer status, and the CAFC has acknowledged the difficulty of formulating a test of pioneer-ness (*Sun Studs Inc. v. ATA Equip. Leasing, Inc.* (1989)) – however, the Supreme Ct review of *Hilton Davis* mentions this aspect (see below)
- Non-obviousness as refutation of equivalence: Where the USPTO grants a patent on the accused infringing product, the CAFC has been apt to recognize that the USPTO did not consider the accused device to be an equivalent (*Hoganas AB v. Dresser Industries, Inc.* (1993)); the conclusion is substantial, but not dispositive ("the fact of separate patentability presents no legal or evidentiary *presumption* of noninfringement")
- *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.* (1997): (Supreme Ct appeal of CAFC ruling) – same facts as above – Supreme Ct reversed and remanded: the doctrine of equivalents is intended to cover an implementation of a patent that avoid literal infringement by substituting components with differences that are "only colorable" – Δ contends that the doctrine of equivalents is incompatible with the 1952 Patent Act focus on "distinctly claiming" the invention, but this was also present in the 1870 Act, and the doctrine of equivalents certainly survived that era – Δ also argues that the use of "equivalents" to §112 ¶6 tacitly limits it to this section, but this express allowance does not also give rise to a negative inference for other sections; Congress could have expressly limited its use in other sections, but did not – however, Δ persuasively argues that the CAFC's use of the doctrine of equivalents "has taken on a life of its own, unbounded by the patent claims" – one solution is to limit the doctrine to a substitution test, instead of allowing wholesale broadening of the claims; this approach is expressly adopted – the "function-way-result" test may be applied on a per-element basis, but this

is only useful in mechanical inventions; future decisions will need to clarify what constitutes "insubstantial" modification in the other arts – Δ has argued in the alternative for different constructions: Δ notes the counterbalancing effect of the doctrine of prosecution history estoppel, and suggests that the motivation for the limitation should be irrelevant; but a retreat from a broader claim may be unrelated to patentability, and so should be considered (and the USPTO routinely investigates this in its decisions) – in cases like the one at bar, where no reason is given for the limitation, the patentee should not simply be permitted to broaden, because the claims are intended to serve a notice function; rather, this creates a rebuttable presumption against broadening, requiring the patentee to show why the claim was so limited – no reason has given for the pH 6.0 limitation, and this issue should be explored on remand – next, Δ argues that the absence of substantial differences is not sufficient, but a necessity that triggers an equity analysis; however, the doctrine of equivalents was not intended as an equity concept, and is intended to be facially neutral (intent to infringe is not an element, is intended to encompass independent development, etc.) – consideration of these elements is permitted, but not required – finally, Δ argues that the doctrine of equivalents should be limited to those expressly suggested in the patent, but this defeats the purpose of the doctrine of equivalents to apply the "ordinary skill in the art" to the equivalence analysis – π argues only that the judge should be empowered to conduct equivalence analysis, but precedent permits the CAFC's finding of this as a question of fact for the jury (*Winans v. Denmead*), and there is no reason to perturb this holding – in sum, this decision upholds the doctrine of equivalents (which should be applied on a per-element basis) and prosecution history estoppel (with the patentee bearing the burden, in the absence of evidence, of showing why a limitation was used) – Ginsburg concurrence: the only point to add to the majority holding is that the rebuttable presumption against the patentee should not be retroactively applied to standing patents, as this would be unfair to those patentees who had no notice of this rule of construction

- Hilton Davis on remand to the CAFC: On remand, the CAFC again held pH 5.0 as equivalent to pH 6.0, and began formulating a test for "insignificant" substitution in the chemical arts: essentially, the court held pH to be one "element" of the invention – the CAFC cited all of the same reasons in its first opinion (expert testimony of equivalent operation, function-way-result language, etc.); the CAFC then remanded to the district ct for resolution of the prosecution history estoppel question
- The "Dolly doctrine": *Dolly, Inc. v. Spalding & Evenflo Cos. Inc.* (1994): in comparing claims for a child's playchair featuring a rigid frame with an accused chair that had no frame, but imply a rigid back and seat, the CAFC held that the limited doctrine of equivalents test "cannot embrace a structure that is specifically excluded from the scope of the claims" – however, this rule (the "*Dolly* doctrine") has limited application, since negative limitations in claims are extremely unusual; applying this to the process in *Warner-Jenkinson* would have required a claim like "pH 6-9, but not pH 5" – a misapplication of the *Dolly* doctrine is *Athletic Alternatives, Inc. v. Prince Manufacturing, Inc.* (1996), in which the CAFC construed as "expressly excluded" a limitation that was only implicit; this would essentially negate the doctrine of equivalents

§15.3[a] Limitations on the Doctrine of Equivalents – The "All Elements" Rule

- *Pennwalt Corp. v. Durand-Wayland, Inc.* (1987): π invented a fruit sorting machine equipped with weight and color sensors that distributed fruit to different collectors based

on quality – Δ, accused infringer, produced a "Microsizer" device that sorted by weight (only) and a "Microsorter" device that sorted by weight and color – trial ct found π's patent valid but not infringed, finding certain functions missing from Δ's devices and others present but operating in a different way: π's patent featured shift registers that moved data on each piece of fruit from one memory location to the next (as fruit advanced down the conveyor); Δ's devices did not track the position of any item, but merely stored the data for each item in a database, and a pointer associated with each cup with a database record – CAFC affirmed non-infringement of π's patent: the doctrine of equivalents can be applied to find infringement where the two devices "perform substantially the same overall function or work, in substantially the same way, to obtain substantially the same overall result"; however, the doctrine will not allow one to ignore a claim limitation that has no equivalent (*Perkin-Elmer Corp. v. Westinghouse Elec. Corp.* (1987)) – the proper test is to compare the role of each limitation in the claim with the role of each component in the accused device (*Lemelson v. U.S.* (1985)) – this patent lies among particularly crowded prior art, and while the claims are broad as to what kinds of fruit it can be used to sort, the claims are narrow regarding how the sorter operates – Δ's patent lacks an equivalent to the position-tracking element of π's patent, and this limitation was crucial to π's patentability; π's expert argues that the position of each item in Δ's device could be calculated, but this is different from storing it in memory – similarly, Δ's device also lacks functionality whereby the data is "responsive to" certain control signals of the "position indicating means," which was one of π's patent claim limitations; since Δ's device has no "position indicating means," this responsiveness is absent – π argues that Δ's invention merely implements in software what π's patent taught in hardware, but this doesn't free it from its express claim limitations; these limitations were accepted in order to obtain a patent in a crowded field, and π cannot now ignore those limitations to extend the patent to encompass a competitor – Nies concurrence: the doctrine of equivalents must be carried out as an "all-elements" test; it cannot be otherwise evaluated – Bennett dissent: the district ct and majority opinion improperly apply the doctrine of equivalents as a very limited "all-elements" test, essentially limiting it to a recasting of the test for literal infringement – although π's patented device explicitly stores positional information, the key is that both devices store data about the fruit until it reaches the proper drop location based on that data – π's use of shift registers is equivalent to Δ's use of database records – the majority focuses on π's claim limitation of "continuously indicating" the position, but the pointers used in Δ's machine also "continuously indicate" which cup contains the item – finally, the "responsive" part of π's claim indicates a function that is merely carried out at a different stage in the process: the color of the item is evaluated against a reference and stored with the "position indicating means," whereas Δ's machine stores the color of the item directly, and evaluates it against a reference when the item reaches the sorter – this difference conveys no substantial benefit – Newman dissent: the majority limits the doctrine of equivalents to a literal infringement test in contravention of *Graver Tank*, essentially adopting the dissenting position in that case – this "bright-line test" also nullifies a key advantage cited in *Paper Converting Machine Co. v. Magna-Graphics Corp.* (1984): "the doctrine of equivalents has been judicially created to ensure that a patentee can receive full protection for his or her patented ideas by making it difficult for a copier to maneuver around a patent's claims"

- "All-elements rule": As noted in other decisions, this test is largely limited to mechanical devices; a claim to "7-(3-hydroxy-2-(3-hydroxy-1,5-octadienyl)-5-oxocyclopentyl)-5-heptenoic acid" can't be divided into elements (*In re Bergstrom* (1970)) – one advantage of this rule is that it encourages succinct and careful claim drafting; a claim with too many elements will allow a competitor to practice the heart of the invention in a slightly altered form
- *Corning Glass Works v. Sumitomo Electric USA, Inc.* (1989): π licensed the "pioneer patents" to the first fiber optic cables, which relied on the principle of a light-conducting core surrounded by a cladding having a lower refractive index to create an optical waveguide – this was accomplished by adding a dopant to the core that raised its refractive index – π sued Δ for patent infringement based on its sale of an optical waveguard operating on the same principle, but designed by adding a dopant to the cladding that reduced its refractive index – trial ct found for π – CAFC affirmed Δ's infringement of π's patent: π's patent expressly calls for a dopant added to the core to increase its refraction, so Δ's use does not literally infringe – however, Δ's use functions in substantially the same purpose and result as π's; the only question is whether Δ's use functions in substantially the same way (*Perkin-Elmer Corp. v. Westinghouse Electric Corp.* (1950)) – this test will be considered via an all-elements approach (*Pennwalt v. Durand-Weyland, Inc.* (1987)) – Δ argues for a per-ingredient analysis, but it is more appropriate to view each "element" as a limitation, not a single component, and it may be necessary to read several components together as one limitation (*Julien v. Zeringue* (1989)) – trial ct took the approach of comparing the function/way/result of the substitution with the function/way/result of the claim limitation; this approach is acceptable – Δ argues that expanding π's patent to cover π's use would stretch it to encompass the prior-art embodiment featuring an undoped core, but this argument admits that the element in question is interchangeable with the prior-art limitation; this is classic evidence of equivalency (where one of ordinary skill in the art would find the parts interchangeable)
- The "all-elements rule" under *Corning*: *Corning* approved the interpretation of several elements as one limitation, which adds some flexibility to the "all-elements rule" – ater affirmed (*Sun Studs, Inc. v. ATA Equipment Leasing, Inc.* (1989: "one-to-one correspondence of components is not required, and elements or steps may be combined without *ipso facto* loss of equivalency") – however, this approach was apparently rejected in *Perkin-Elmer Corp. v. Westinghouse Electric Corp.* (1987): "nor, as Perkin-Elmer here requests, should a court convert a multi-limitation claim to one of [fewer] limitations to support a finding of equivalency"

§15.3[b] Limitations on the Doctrine of Equivalents – Prosecution History Estoppel

- *Southwall Technologies, Inc. v. Cardinal IG Co.* (1995): π invented a type of heat-shielding glass comprised of alternating layers of dielectric and silver; the claim recited that the silver and dielectric were "contiguous," which π admitted during prosecution meant "no nucleation layers present between two 'directly contiguous' layers or between layers which are laid down 'directly' on one another" – Δ created a heat-shielding glass design comprising dielectric #1, silver, dielectric #2, dielectric #1, silver, dielectric #2, dielectric #1, dielectric #2, and dielectric #1; the second dielectric was a "sacrificial barrier layer" intended to protect the silver from oxidation – π sued Δ for infringement – trial ct focused on the use of the term "sputter-deposited dielectric," which π's patent

described as a one-step process, and found non-infringement in the fact that Δ's design required a two-step process (first depositing titanium metal, then oxidizing it into titanium dioxide) – CAFC affirmed non-infringement of π's patent: π's definition of "contiguous" during prosecution clearly defines away from Δ's design (the examiner had expressed confusion over the term, and stated in an office action that he had to interpret the term "broadly" [therefore encompassing prior art] unless π offered a narrowed definition; π responded by giving a specific definition to the term "contiguous") – thus, π expressly disclaimed – therefore, π's patent does not literally infringe, as there is no "sputter-deposited dielectric" layer "directly contiguous" to the silver – however, π characterizes Δ's process as equivalent, noting Δ's use of a sputtering technique for depositing the dielectric –the doctrine of equivalents is not intended permit expansion of the patent after allowance, and is expressly limited by the doctrine of prosecution history estoppel – however, every claim limitation must be examined as to its motivation – here, π's limitation was made to avoid a previous patent to Frantz that taught a two-step process involving heating (different from Δ's); therefore, π argues that prosecution history estoppel should only restrict the expansion to cover the Frantz technique, not any such technique – this argument is rejected for two reasons: first, the one-step nature of π's process was an important factor in the improved process; second, Δ's process differs from the Frantz prior-art process in only trivial ways – π alternatively argues (citing *Read Corp. v. Portec, Inc.* (1992)) that prosecution history does not attach to the circumstance where the applicant offered multiple bases for distinguishing, and where at least one way of distinguishing the prior art from the patented device does not also distinguish the accused device (i.e., the patentee distinguishes a prior-art patent as differing for reasons A and B, and later accuses a device that differs from the patent only by reason A; reason B therefore permits a finding of infringement) – in short, π argues that each distinguishing statement does not create a separate estoppel, but that they together create one estoppel that is only applicable if all distinguishing factors apply to the accused device – however, *Read* did not create such a broad rule, but merely denied that multiple statements *always* create separate estoppels; i.e., sometimes so, sometimes not – the critical test is whether the patentee distinguished on the basis of both limitations (creating one estoppel), or simply offered them as alternative distinguishing bases (creating multiple estoppels) – here, π cited each factor in the alternative, creating multiple estoppels – finally, π argues that the distinguishing remarks were made about a slightly different term, and in a claim other than the one at issue; however, it would be impossible to trace prosecution arguments to final claims, given the complexity of prosecution; thus, distinguishing remarks for any term are applied to the use of that term, and for equivalent terms, throughout the patent

- Speculative inquiry: *Southwall* indicates that a claim need not be amended for prosecution history estoppel to apply: any prosecution arguments made in order to avoid prior art will trigger the application of the rule, regardless of how the examiner and applicant proceeded (*see also Kinzenbaw v. Deere & Co.* (1985): applicant proposed claim with limitation A; in response to examiner's citation of prior art, applicant added limitation B; after issue, patentee argued that prosecution history estoppel did not apply to limitation A – CAFC denied to engage in such "speculative inquiry," holding that implicitly distinguishing on the basis of limitation A made it proper to attach prosecution-history estoppel to this limitation as well) – these holdings are balanced by *Pall Corp. v.*

Micron Separations, Inc. (1997): "a non-substantive change or a change that did not in fact determine patentability does not create an estoppel," and by *Athletic Alternatives Inc. v. Prince Mfg. Inc.* (1996), where the CAFC asserted that "unmistakable assertions" distinguishing prior art create estoppel, but equivocal statements about the prior art might not

- Prosecution history of related applications: In *Mark I Marketing Corp. v. R.R. Donnelley & Sons Co.* (1996), the CAFC held that the prosecution history of the entire portfolio of related patents was effective against all of them (in this case, prosecution history of an abandoned patent created an estoppel on continuation patents claiming priority on it)
- *Prestige Group (Australia) PTY Ltd. v. Dart Industries Inc.* (1990): (Australian case discussing the basis of prosecution history estoppel) – the practice of reading a patent in light of the formative negotiations (prosecution history) conflicts with the analogy of a patent to a contract, in which the written instrument fully embodies the agreement – it is closer to legislation, in which the legislative history can be used for clarification – it might alternatively be considered an admission against interest, but unlike the rules of evidence, such an admission in patent law must be made to the patent examiner to be effective – also of relevance is the fact that the estoppel power of prosecution history only exists in the context of the doctrine of equivalents (not literal infringement), but may also be used in literal infringement for claim interpretation (*McGill Inc. v. John Zink Co.* (1984)) – of course, evidence of term usage in the relevant art can be used to clarify the meaning of the patent, but only if the claim language does not stand on its own – thus, prosecution history is not relevant or admissible where the patent language is clear and would be contradicted by the evidence

§15.3[c] Limitations on the Doctrine of Equivalents – Prior Art Limitations

- *Wilson Sporting Goods Co. v. David Geoffrey & Associates* (1990): π patented a method of arranging dimples on a golf ball by conceptually dividing the ball into six great circles and arranging the simples so as not to lie along any of these circles – this patent was granted after distinguishing it from a prior-art patent to Pugh that involved conceptually dividing the ball into any regular polyhedron, but that featured dimples intersecting the great circles – π sued Δ for infringement based on its ball dimple design, which also divided the ball into six great circles, but arranged dimples that intersected each circle – trial ct found for π – CAFC reversed in part, finding non-infringement of π's claim 1, and remanded for reconsideration on other claims: the doctrine of equivalents does not change the range of a patent, but merely moves equivalent and infringing embodiments into the scope of the patent – thus, prosecution history estoppel does not limit an expansion (since it is not being expanded), but rather blocks the movement of equivalents into the scope of the patent where this would require also moving prior art (public-domain) inventions into the patent scope – one way of conducting this analysis is to create a hypothetical claim that would have covered the accused invention, and decide whether or not that claim would have been allowable in light of the prior art – this burden falls on the patentee, as part of its burden of proving infringement – here, any hypothetical claim based on independent claim #1 to include Δ's design must be obvious in light of the prior-art Pugh patent; thus, claim 1 is not infringed, either literally or by the doctrine of equivalents – however, a separate question exists as to whether any dependent claim infringes – usually, this is not a consideration; since dependent claims are usually narrower, their consideration is not needed if the broad independent patent is not

infringed (*Wahpeton Canvas Co., Inc. v. Frontier, Inc.* (1989)) – however, this case is different, since a narrower claim might exclude the prior art so that the doctrine of equivalents can be asserted to include Δ's ball – thus, case remanded for trial on this issue

- Limitation of *Wilson Sporting Goods*: This case was criticized as encumbering the patentee with the duty of proposing a hypothetical claim and proving that it would have been allowable – thus, the CAFC retreated from this rule, calling it "not obligatory in every doctrine of equivalents determination" (*Key Mfg. Group, Inc. v. Microdot, Inc.* (1991): trial ct denied availability of doctrine of equivalents to encompass a competitor's shoe featuring a "Pump" mechanism identical to one disclosed in the prior art; CAFC reversed, holding that regardless of which analysis is chosen for applying the doctrine of equivalents, it's improper to look solely at one feature; the invention as a whole must be considered)

§15.4 Reverse Doctrine of Equivalents

- *SRI International v. Matsushita Electric Corp.* (1985): (Excerpted for discussion of reverse DoE) – infringement is the unauthorized making, using, or selling of a patentee's claimed invention; this extends both to products precisely as claimed, and to products that are "substantially the same thing, used in substantially the same way, to achieve substantially the same result" (doctrine of equivalents) – the patentee bears the initial burden of proof of infringement – if literal infringement is demonstrated, the apparent infringer may raise the "reverse doctrine of equivalents," asserting that the product has been so substantially changed in principle that it performs the same function in a substantially different way, even despite literal infringement
- Reverse doctrine of equivalents: This defense is rarely raised and even more rarely successful – its basis derives from *Graver Tank* (no infringement if the device is "so far changed in principle from a patented article that it performs the same or a similar function in a substantially different way") – thus, the purpose is to narrow the scope of a claim with an improperly broad scope (in the absence of prior art that would more strongly narrow it) – the CAFC has compared this analysis to §112 ¶6, holding the latter as actually a narrowing principle: rather than claiming *any* means for satisfying a particular function, §112 ¶6 proposes a more specific (and hence more limited) range of equivalents – thus, §112 ¶6 is not as analogous to the doctrine of equivalents (allowing expanded range of a claim scope) as to the reverse doctrine of equivalents (narrowing the range of equivalents to those approximating the claimed means and function) – the reverse doctrine of equivalents is a defense to literal infringement, and also a question of fact; thus, it can be raised at trial only after literal infringement of the patent claims has been found by the court (*En Liung Huang v. Auto-Shade* (1996))

§15.5 Experimental Use

- Background: The experimental-use exception stems from *Whittemore v. Cutter* (1813) ("it could never have been the intention of the legislature to punish a man who constructed such a machine merely for philosophical experiments, or for the purpose of ascertaining the sufficiency of the machine to produce its described effects"), and was later codified (in part) by 35 USC §271(e)(1), which excludes from infringement any "uses reasonably related to the development and submission of information under a federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products" – this exception was often exercised by competitors near the end of a patent term, to begin product testing in anticipation of its expiration

- *Intermedics, Inc. v. Ventritex, Inc.* (1991): π patented a cardiac assist device – near the end of π's patent term, Δ created a competing product, obtained an Investigational Device Exemption (IDE) from the FDA, and began conducting patient trials in anticipation of full FDA approval ("pre-market approval," or PMA) – π asserted that Δ's activity was not solely related to FDA approval, but to product and market testing in anticipation of term expiration – district ct granted summary judgment to Δ for §271(e)(1) exception: in enacting §271(e)(1), Congress gave priority to the interests of the public in obtaining ready access to competing versions immediately after expiration of a patent over the patentee's financial interests – this experimental-use exception permits experiments so long as they are designed to yield data relevant to FDA approval, so that competitors are not held up by a several-year development phase following patent expiration (which would have effectively extended the patent term by many years) – π argues that Δ's experiments can be used for activities other than experimentation, such as obtaining development funding and establishing business channels – however, Congress's choice of the term "uses," rather than "purposes," is relevant; as long as the activity qualifies under §271(e)(1), it is permitted regardless of how it is eventually used – this is a more objective test, and it also assists patentees by limiting the "uses" in which competitors might engage by asserting an FDA-approval purpose – also, focusing on the "indirect" effects would strongly limit the experimental-use section, where much FDA-approval-related activity would be prohibited because of its indirect effects, especially in the case of very complex inventions (such as this one); "virtually all collateral activities will have a business purpose" – here, the activities cited by π are all protected activities: (1) the manufacture of several hundred devices, which is necessary for generating data for FDA approval; (2) sale of the devices to U.S. hospitals, which is permitted because Δ has strictly limited sales to use in clinical trials (π contends that Δ sold many devices after filing its PMA application; Δ persuasively demonstrated that PMAs are routinely rejected pending the submission of additional data); (3) sale of the devices to international distributors, which Δ limited (via licensing terms) for the purpose of obtaining clearance through customs for delivery to clinical sites overseas; again, all subsequent sales were to FDA-approved clinical investigators); (4) testing of the accused device in Germany, which π characterized as solely to develop approval and marketing in Germany (not to obtain US FDA approval); however, data from German investigators is certainly capable of being submitted to the FDA, and it is in Δ's best interest to use qualified clinical investigators regardless of where they are located; again, Δ's subjective intent is irrelevant, and Δ's objective actions in Germany were solely limited to clinical investigators – thus, all of Δ's activities are permitted under §271(e)(1)
- *De minimis* infringement: AS per *Deuterium Corp. v. U.S.* (1990), *de minimis* infringement is relevant to the question of damages, but still qualifies as infringement, which is an absolute determination with no "degrees" of infringement

§15.6 Indirect Infringement

- Overview: 35 USC §271(b): "Whoever actively induces infringement of a patent shall be liable as an infringer" – 35 USC §271(c): "Whoever offers to sell or sells within the United States or imports into the United States [anything constituting a material part of a patented invention], knowing the same to be especially made or especially adapted for use in an infringement of said patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer"

- *Hewlett-Packard Co. v. Bausch & Lomb Inc.* (1990): π patented and produced an X-Y plotting device that prohibited slippage between the rollers and the paper by incorporating a high-coefficient frictional edge, and its product incorporated pinch rollers coated with rubber – Δ patented and developed a similar incorporating a pinch wheel coated with silicon carbide grit; this grit caused and engaged with indentations in the paper for better hold – Δ later produced a competing "grit-wheel plotter" product, and sold off the corporate division that dealt with this plotter, along with a patent license, to a company called Ametek, which indemnified it against patent infringement – π learned of Δ's grit-edge plotter and sued for infringement; Δ admitted infringement but contended that π's patent was obvious in light of Δ's earlier patent, which, Δ asserted, would produce and engage indentations similar to those in π's device – ct found π's patent valid and held Δ liable for direct infringement, but did not find Δ guilty of actively inducing infringement by Ametek – <u>CAFC affirmed both Δ's direct infringement and Δ's non-infringement by actively inducing Ametek:</u> contributory infringement before 1952 focused on the sale of a component that could be used to infringe a patent, and held that intent was an element but could be inferred from the absence of substantial non-infringing use – this was changed by 35 USC §271, which divided this into "contributory infringement" (including an element of knowledge, instead of actual intent) and "active inducement," which doesn't mention an intent element – however, "active inducement" is intended to be a codification of preexisting precedent, which included an intent element; hence, intent to infringe is an element – this element is missing here: Δ's sale of its plotter division to Ametek was not an inducement to infringe, but a divestment of its assets and liability – Δ did not gain anything by Ametek's use of its resources or its infringement of π's patent – π cites the express inclusion of Δ's infringing grit-edge plotter in the sale to Ametek, but this appears to be part of the intent to sell the division "lock, stock, and barrel" to Ametek – π also cites the indemnification clause, but this is further evidence that Δ didn't care what Ametek did with the device, so long as the activity didn't impact Δ
- <u>§2712(b) vs. §271(c):</u> At first glance, (c) looks like a superset of (b), but (b) essentially defines a greater offense that can constitute patent abuse, whereas (c) is a broader but lesser offense (see §271(d)) – specifically, §271(b) can be used to pierce the corporate veil in order to hold corporate officers personally liable under the tort of inducement where "appropriate circumstances" exist – *Hoover Group Inc. v. Custom Metalcraft Inc.* (1996): personal liability exists "when personal wrongdoing is not supported by legitimate corporate activity… qualified by the distinction between commercial torts committed in the course of the officer's employment, and negligent and other culpable wrongful acts"; relevant factors include "(1)justification for piercing the corporate veil based on such criteria as absence of corporate assets; (2) corporate commitment of a commercial tort caused by an officer acting as an agent of the corporation; (3) culpable intent or bad faith on the part of the officer; and (4) personal commitment of a fraudulent or grossly negligent act"
- <u>Implied right to repair:</u> The sale of a patented product does not entitle one to reproduce and sell it, but does permit the purchaser to repair it, even if this requires buying parts from an unauthorized third party (*Art Mfg. Co. v. Convertible Top Replacement Co.* (1961)) – the following case is also relevant to this issue

- *Sage Products, Inc. v. Devon Industries, Inc.* (1995): π created and patented a sharps container for use in hospitals, comprising a mountable outer shell and a disposable inner container – the inner container can be reused only with difficulty, so naturally, π produces and sells replacements for the disposable inner container – Δ produced replacement inner containers and sold them to hospitals that had purchased containers from π, and π sued for contributory infringement – trial ct found noninfringement, either direct or contributory – CAFC affirmed noninfringement of π's patent: π argued that Δ produced a part that hospitals use to "reconstruct" its patented device; Δ characterized the replacement of the inner container as "repair" permissible under *Aro* – a relevant statement from that case: "mere replacement of individual unpatented parts, one at a time, whether of the same part repeatedly or different parts successively, is no more than the lawful right of the owner to repair his property" – a part of a patented invention is simply an unpatented component, no matter how essential to the operation of the device; and such repairs may be made if they are necessary for "maintenance of the 'use as a whole'", even if they constitute major repairs – π's characterization as "reconstruction" is discredited by its design of the particular part to be disposable, and labeling of the part as "SINGLE USE ONLY" – as per *Everpure* (1989), "it is at least difficult to accept the notion that one who purchases a disposable element of a product under instructions to replace it periodically is guilty of infringement when the buyer does precisely that"
- Repair vs. reconstruction: This distinction is maintained, though the CAFC has permitted a very expansive and permissive interpretation of "repair" (*Kendall Co. v. Progressive Medical Technology, Inc.* (1996): parts intended to be replaced can be purchased from a competing supplier, even if the patent does not openly teach that the part is disposable/replaceable – one of the few CAFC cases to find infringing reconstruction is *Sandvik Aktiebolag v. E.J. Co.* (1997), holding liable a drill repair company that sold replacement drill tips; the CAFC cited the unreplaceable nature of the drill tip in the device and the patentee's failure to sell replacement drill tips
- §271(f): This section defines as infringement the manufacture of the components of a patented article and export of them, in unassembled form, to an outside company with instructions for assembling them – this section was added in the 1984 amendment to the Patent Act, in response to cases like *Deepsouth Packing Co. v. Laitram Corp.* (1972), in which the Supreme Ct held that the company conducting such activity did not "make" or "sell" the "patented device" – the leading case on this new section is *T.D. Williamson Inc. v. Laymon* (1989), in which the trial ct held that many activities regarding the sale of a patented "caliper pig" (used for probing in the interior of a pipeline) were found to violate §271, but the court refused to find infringement in Δ's sale of the product to Venezuela where (a) some parts were manufactured in Venezuela, and (b) the device had substantial non-infringing uses – the CAFC reversed on this last activity, noting that the device was shipped from within the U.S. in a sufficiently complete state that full assembly in Venezuela took two hours – Δ raised lack of intent as a defense, but the CAFC relied on §271(f)(1), which offers an objective test based on whether the completed combination would have constituted infringing use within the U.S. – also, §271(f)(1) finds infringement even if the products are commodities, or capable of substantial non-infringing use

§15.7 Process Patents

- Process Patent Amendments Act of 1988: This amendment, which added 35 USC §271(g), altered the traditional rule that a patent for a process did not reach the product of that process (whether created by that process or another); the amendment characterized as infringement the use, sale, or import of the product of a process patent
- *Eli Lilly & Co. v. American Cyanamid Co.* (1996): π obtained patents for a class of broad-spectrum antibiotic called cefaclor – after these patents expired, Δ applied for and received permission to market a generic version in the U.S.; that same day, π licensed a patent for the process of making "compound 6," a compound structurally similar to cefaclor and that could be converted into cefaclor – π then sought a preliminary injunction against Δ under §271(g) – trial ct dismissed the preliminary injunction request, holding that π was not likely to win at trial – CAFC affirmed denial of preliminary injunction against Δ: §271(g) prohibits the importation, sale, or use of the product of a patented process, but allows such actions for a product that is (a) "materially changed by subsequent processes" or (b) "a trivial and nonessential component of another product" – however, this language is vague and hard to apply – π argues that cefaclor is not "materially changed" from compound 6, and therefore Δ's import of cefaclor violated its process patent for making compound 6 – this argument has considerable appeal, since allowing small changes to escape §271 via §271(g) would considerably interfere with the purpose of the statute – however, π goes too far by urging that §271 should apply whenever such an import is likely to undercut the commercial value of a patented drug; this scheme disregards the substantiality of the changes needed to convert one product to the other (here, converting compound 6 to cefaclor takes four fairly routine steps; π does not suggest a limit past which the changes are "material") – rather, "material" changes must be assessed as that term is used in the relevant art; in the chemical arts, cefaclor and compound 6 "materially" differ by incorporating four different components, and the common element, the cephem nucleus, can be used to create thousands of antibiotics with different properties – each side points to legislative history that is somewhat helpful, but not dispositive either way – Rader concurrence: the majority ruling "creates another massive loophole in the protection of patented processes," essentially limiting the use of §271(g) to finished products – compound 6 has utility only in making cefaclor, and is only four simple chemical manipulations away from the end product
- Domestic application of §271(g): Courts are split on this issue; contrast *Shamrock Technologies Inc. v. Precision Micron Powders, Inc.* (1991) ("the plain language of the statute clearly states that whoever without authority sells within the United States a product made by a patented process shall be liable as an infringer") and *Hughes Aircraft Co. v. National Semiconductor Corp.* (1994) (citing legislative history from the Senate Judiciary Committee: "the primary target of the U.S. process patent holder will naturally be the manufacturer who is practicing the process and importing the resulting goods into the United States")
- Remedies for §271(g) infringement: A complex remedies statute was added as §287(b), including a grace period granting accused infringers an opportunity to avoid liability by halting their activities within a certain timeframe after receiving notice of infringement

§15.8[a] Infringement Analyses Overseas – Europe

- Overview: The EPO grants one patent, but it is actually equivalent to a bundle of national-phase patents, each construed according to the laws of one country (EPC Article 64(3): "any infringement of a European patent shall be dealt with by national law"); these

national laws are harmonized on the main points, but splintered on infringement and claim interpretation issues, with the UK and Germany occupying opposite ends of spectra on these issues – contrasting the following opinions from these companies will illustrate their different approaches

- *Formstein* (1986): (German patent law case) – π patented a road curbstone design with improved rainwater runoff capabilities, comprising a "molded" curbstone with a longitudinal channel and occasional latitudinal outlets directing water into the land – π asserted infringement by Δ, a town that designed its curb by building a channel into the road next to the curbstones and using regular curbstones spaced apart some distance – trial ct found infringement, but appellate ct reversed and dismissed claim – German Supreme Ct reversed and remanded: the appellate ct correctly found no literal infringement, since Δ did not use "molded" curbstones or embed a channel within them – however, π argues persuasively that the accused invention "solved the technical problem by means which were not identical with those protected by the patent, but coincided as to their technical function, i.e., they achieved essentially the same result" – Article 69 requires that the scope of a patent should not be overly tied to the wording of the claims, and should include equivalents, as determined by whether one of ordinary skill in the art would consider to have solved the same problem by using the same effects – the appellate ruling adheres too closely to the claims, and did not consider the nature of the problem and the technique sued to solve it – the principle here is the use of a longitudinal trough with cross-sectional outlet to facilitate roadway drainage; any means of realizing that design, whether by pre-molded stones or arrangement of conventional stones, falls within the patent – Δ argued that its technique was permitted, and not an equivalent, because it did not meet the requirements of patentability; this is a valid defense, but has not been proven, and the burden lies with the defendant; therefore, case remanded for trial for review of π's patent and Δ's use in light of the prior art: infringement has occurred if inventive activity was necessary to apply the infringing activity, and if one of ordinary skill in the art finds that it is based on the same operative principle as π's patent; testimony by an expert in the art should be used for this determination – since blanket injunctions are only awarded for literal infringement, this is an inappropriate remedy for this case; rather, an injunction will have to be crafted specific to these circumstances, including the fact that Δ's use took place inside of the four-week post-issuance "examination period," and is therefore presumptively unintentional
- Patent law in Germany: As *Formstein* demonstrates, German patent officials allow a doctrine-of-equivalents-like reading to broaden the range of inventions that may be encompassed – however, the German court system is organized a little differently; the German patent office is exclusively qualified to determine validity of patents and claims, whereas the courts are exclusively qualified to determine infringement – the office applies a "tripartite doctrine," essentially setting forth three kinds of infringement: "the direct subject of the invention" (analogous to literal infringement), "the subject matter of the invention" (analogous to the doctrine of equivalents), and "the general inventive idea" (a very broad doctrine encompassing "non-equivalent equivalents," based on three conditions: (1) the inventive idea would have been obvious to one of skill in the art at the time of filing, (2) determination of the general inventive idea required no inventive effort, and (3) the inventive idea satisfies all patentability requirements

- WIPO view of the doctrine of equivalents: The WIPO has tried to harmonize international concepts of equivalency: the scope of a patent is determined by the claims, read in light of the specification and drawings, but the patent also reaches equivalents of any element described therein, based on either a function-way-result test
- *Catnic Components Ltd. v. Hill and Smith Ltd.* (1982): (English patent law case) – π invented a design for galvanized steel lintels used to span spaces above windows and door openings, relying in part on a vertical support element – Δ decided to enter the market and knowingly copied this design, leading to an uncontested infringement verdict – Δ then produced a modified product, shifting the vertical support element inward a few degrees at the top in order to avoid π's patent, and intended in part to satisfy customer complaints that the original design (π's) was difficult to plaster – π sued for infringement based on this second design – trial ct denied "infringement in terms" (literal infringement) but found infringement based on the "pith and marrow doctrine" (equivalency) – appellate ct reversed the latter finding and found no infringement, noting that π had made the precisely vertical support element a critical claim limitation – House of Lords allowed appeal of non-infringement finding: this is a simple invention, and Δ's modification provides only a slight reduction in load-bearing capacity – contrary to the lower courts' rulings, there are not two doctrines for determining infringement, but only one substantive test – the patent is comprised of words chosen by the patentee to describe his invention, with the "pith and marrow" of the invention determined by the words used in the claims; the entire patent should be construed based on the purpose of the patent – the question of infringement is: "whether persons with practical knowledge and experience of the kind of work in which the invention was intended to be used would understand that strict compliance with a particular descriptive word or phrase appearing in a claim was intended by the patentee to be an essential requirement of the invention so that any variant would fall outside the monopoly claimed" – in the leading case on this issue (*Van Der Lely v. Bamfords* (1963)), considering whether "hindmost wheels" included "foremost wheels," the court found that those of ordinary skill in the art would have recognized that the difference between the fore and hind wheels was immaterial – the essential question in this case is whether the back supporting plate needed to be vertical to be effective; and it is not clear why π would have so intended, or what benefit a completely vertical element would have created – thus, Δ's modification did not substantially change π's lintel element – only a geometer would have read the claim as so limited; to others, "vertical" means upright, including the substantially vertical elements of a trapezoid
- Patent law in England: The English concept of using patent language to determine the "purpose" of the inventor is squarely at odds with the objective approach taken by the CAFC in *Markman*, both in substance and in the evidentiary value of expert witnesses – England has struggled to unify this test with the European Patent Convention
- Conflicts among EPO nations: The disparate standards of patentability, particularly regarding the doctrine of equivalents, complicate international infringement claims – one illustrative example is Epilady's lawsuits against Remington over different razor designs; the inconsistent holdings in many foreign nations vastly complicated enforcement: England granted an injunction but found no enforcement; Germany and Holland initially denied an injunction but later found infringement; Amsterdam found no infringement, while Italy did not – all of these decisions criticized the holdings of courts in other

nations – the parties finally settled just to end all of this litigation – still, the EU is attempting to solve the problem by creating a central court, like the CAFC, that will handle all patent appeals from EU nations and will reduce the costs of litigating in a dozen nations

§15.8[b] Infringement Analyses Overseas – Japan

- *Genentech, Inc. v. Sumitomo Pharmaceutical Co., Ltd.* (1996): π produced an activator for human plasminogen and patented it with a claimed sequence of 450 amino acids – Δ produced a human plasminogen activator consisting of the same sequence with a single substitution (methionine instead of valine, likely the result of a single-nucleotide polymorphism (SNP) mutation) – π sued for infringement – Osaka High Court found infringement: claims are not to be limited "indiscriminately in every single case" to the selected words; some flexibility must be allowed to encompass equivalents – a claim that is rejected and that does not appear in the patent (in amended form) cannot later be asserted as part of the patent scope, whereas a claim that is amended can be extended – here, Δ's substitution produces no added benefit, since it has no impact on non-primary structure and does not play any role in recognition or binding – moreover, π persuasively argues that SNP mutations occur naturally while cloning such compounds, and usually have no impact – thus, the "average skilled person" would have recognized these compounds as having identical function, and the substitution provides "no significant practical value from the scientific standpoint" – Δ has suggested no facts that would prohibit an extension of equivalency, so this must be permitted
- Patent law in Japan: Japan's patent system is widely criticized for allowing very narrow claim construction and very limited equivalency – recent cases indicate an increasing recognition of the doctrine of equivalents, but progress is very slow – Japanese prosecution is further hampered by language barriers and lack of precedent in many areas – one ameliorating factor is the newly-created Tokyo Institute of Intellectual Property, which produces an English-language periodical describing Japanese patent law

Chapter Sixteen: Equitable Defenses

§16.1 Laches and Estoppel

- *A.C. Auckerman Co. v. R.L. Chaides Construction Co.* (1992): π invented a method and device for forming highway concrete barriers on the fly, without having to construct a mold – in February 1979, π was notified that Δ was using its device, and sent Δ several letters notifying them of their patent and offering a license, but Δ failed to respond – π imposed a July 1st deadline, to which Δ responded with a refusal (and assertion that its business was very small) – eight years passed with no activity, in which Δ continued to use the device and grew its business – in 1987, π sent a few more letters to Δ, and after receiving no response, filed suit – the district court granted summary judgment to Δ on grounds of laches and estoppel – CAFC reversed summary judgment for Δ: Laches is an equitable defense under 35 USC §282 based on two elements: the patentee's delay in bringing suit was unreasonable and inexcusable, and the alleged infringer suffered material prejudice from the delay – a rebuttable presumption of laches is raised where a patentee fails to sue within six years of first learning of infringement – estoppel is a different equitable defense, also under 35 USC §282, based on three elements: the patentee's actions led the infringer to believe that the patentee would not enforce its patent against it, the alleged infringer relied on these actions, and its reliance causes it to

suffer material prejudice – thus, the defendant must be on notice of the patent, but also have relied on the patentee's affirmative action that it would not assert it – here, no presumption is created by a delay, since the timing is less of an issue – in both cases, "material prejudice" may be economic (loss of monetary investments or damages incurred that would not have existed without the delay or detrimental reliance, and where the patentee's change in position was not provoked by other factors [e.g., poverty, illness, intervening dispute over patent ownership]) or evidentiary (the delay in filing suit rendered some exculpatory evidence unavailable) – if successfully proven, the patentee may be denied partial or total relief; one common formulation grants immunity to the defendant for activity during the period of laches or estoppel (but allowing liability for activity continuing past the end of the delay) – however, because these defenses are equitable, they may be waived if the accused infringer has shown "particularly egregious conduct," such as intentional copying – here, estoppel is not proven because π made no suggestion of abandoning its patent claim, since all of its communications threatened to enforce the patent; π's nine-year silence cannot by itself create this inference, unless π had a duty to speak (i.e., to correct an earlier promise not to assert the patent), and here π had no such duty – also, laches is not applicable because π may have fairly decided not to pursue Δ in 1979, when it was a *de minimis* competitor, but this attitude changed as Δ's business changed by 1987

- Notices of infringement: Besides blocking a later defense of laches or estoppel, a patentee's notice to an accused infringer also supports a damages reward under §287, and also may serve the basis for a declaratory judgment action against the patentee
- Estoppel in the context of industry standards: *Wang Laboratories, Inc. v. Mitsubishi Electronics America, Inc.* (1993) dealt with the scenario where a company encouraged an industry to adopt its technology as an open standard to an industry standards body (here, the architecture for a SIMM memory module was pitched to and accepted by the Joint Elecronics Device Engineering Counsel [JEDEC]), but later tried to assert patents for the standard technology against competitors – the district ct prohibited it from asserting the patent on the basis of estoppel, noting that the entire JEDEC group believed that π's offer of the technology for standardization was an implicit abandonment of patent claims covering it, and characterizing π's pitch as facially misleading

§16.2 Shop Rights

- *McElmurry v. Arkansas Power & Light Co.* (1993): π, an employee of Δ, developed a particular kind of ash detector for electrostatic precipitators based on a vacuum – π's work was accepted, and Δ contracted to have such detectors installed on a number of its boilers – π left to form another company, taking the patent with him, and later provided contract services to Δ to install detectors on other boilers – eventually Δ opted to use a third-party vendor to build more sensors at a lower cost, and π sued for patent infringement – trial ct granted summary judgment to Δ, finding that it held a shop right to use the technology – CAFC affirmed Δ's shop rights to use π's technology: "shop rights" are a poorly understood concept – some cts apply it as an implied license, based on the use of the employer's resources; other cts construe it as a form of equitable estoppel; still others view it as a continuing common-law right: "where a servant, during his hours of employment, working with his master's materials and appliances, conceives and perfects an invention for which he obtains patent, he must accord his master a nonexclusive right to practice the invention" (*U.S. v. Dubilier Condenser Corp.* (1933)) – any

characterization is fine, since they all reach the same result – factors to consider: the employment relationship, whether the employee consented to the employer's use of the invention, whether the employer assisted the employer in using the invention, the details of the development process, and the inventor's activities pertaining to the invention after it was invented – in considering these circumstances under principles of equity and fairness, the court then has discretion to find or withhold "shop rights" to the employer – here, π invented the improvement while employed by Δ, using Δ's resources, for the purpose of solving one of Δ's problems, and assisted its installation on a wide number of boilers – in fact, π asserted at trial that he thought Δ had shop rights to the invention – this expresses strong assent to Δ's use of the invention – π contends that Δ exceeded its shop rights by distributing details of the improvement to third parties, but (1) disclosure does not constitute patent infringement (since the information is already public knowledge), and (2) such disclosure was necessary for Δ to exercise its shop rights, since it did not build its own detector devices

- Employee's rights: German patent law includes a "German Employed Inventor's Rights Law" that orders mandatory compensation of employees for the use of their ideas – this also draws a distinction between "tied" inventions (those related to the employer's business or created in the context of the employee's responsibilities, to which the employer holds patent rights, conditioned on the employee's demand for a fair license fee) and "free" inventions (created otherwise, and to which the employer has no automatic rights of any kind) – many in the U.S. have clamored for the adoption of similar rights for U.S. employees, criticizing the routine employment regime of requiring assignment of all inventions without compensation

§16.3 Prior User Rights

- Overview: Prior user rights allow one who was using an invention before any demonstrable priority date of a patentee to continue using the invention (subject to certain limitations) – these rights are not currently allowed in the U.S., but other countries do permit them, and the U.S. is moving in that direction (see efforts to create 35 USC §273: "a person shall not be liable as an infringer if such person had, acting in good faith, commercially used the subject matter before the effective filing date of such patent") – proponents assert that this right is necessary to maintain balance between patents and trade secrets; opponents argue that this right diminishes the incentive to patent by negating the threat that a later inventor might patent the invention and block their trade-secret use – this proposed section would also comport with 35 USC §102(g), which invalidates a patent based on prior use
- *Helitune Ltd. v. Stewart Hughes Ltd.* (1990): (English case in chancery) – π developed and patented a RADS-AT tracking system –in defense to π's infringement complaint, π asserted prior user rights, evidencing its use back to the 1970s – English chancery court found for π: based on Patents Acts 1977 §64: "a person who in the UK before the priority date of the invention does in good faith an act which would constitute infringement of the patent if it were in force, or makes in good faith effective and serious preparations to do such an act… that person shall have the right (a) to continue to do or, as the case may be, or to do that act himself, and (b) to assign the right to do it or to transmit that right on his death to any person who acquires that part of the burden in the course of which the act was done or preparations had been made to do it…" – this section operates as a statutory license to infringe the patent – however, these uses are circumscribed: the license is

limited to the actions taken or products made before the filing of the patent (although the defendant is permitted to further those acts through other non-infringing uses, e.g., altering a patented but previously-used product in a novel way) – here, Δ had developed a prototype before π's patent filing, but had not sold any devices (nor had substantially prepared to do so) and had temporarily abandoned work; thus, Δ's prior-user rights do not extend to sales of π's patented tracking system

Chapter Seventeen: Remedies

- Overview: Remedies for patent infringement are set forth in §283 (injunctions) and §284 (damages: "adequate to compensate for the infringement, but no less than a reasonable royalty for the use made of the invention by the infringer") – these remedies must be considered in conjunction with principles of antitrust and unfair competition law

§17.1[a] Injunctions – Preliminary

- *H.H. Robertson, Co. v. United Steel Deck, Inc.* (1987): π patented a "bottomless sub-assembly for producing an underfloor electrical cable trench" and sued Δ for infringement – π requested a preliminary injunction, predicting "a reasonable probability of eventual success on the patent infringement claim," and citing a prior decision by a district court that found validity and infringement of π's patent by a competitor, Barger, regarding a product that was "the same or substantially the same" as Δ's – district ct held a four-day hearing on the motion, with some expert witnesses and briefs, and then granted the preliminary injunction – CAFC affirmed grant of preliminary injunction: preliminary injunction requests are evaluated similarly in patent law as in other areas of law (although other courts have suggested a heightened standard, citing the "inherently unreliable" and hence unpredictable patent issuances by the USPTO) – however, the standard of appellate review, abuse of discretion, in essentially uncontested – district ct applied the test formulated in *Roper Corp. v. Litton Systems, Inc.* (1985): "(1) a reasonable probability of eventual success, and (2) the movant will be irreparably injured *pendente lite* if relief is not granted… taking into account the possibility of harm to other interested persons from the grant or denial of the injunction, and the public interest" – here, π met its burden of proving reasonable probability by citing the very similar case against Barger, which the district ct here found "persuasive evidence of validity," and by offering expert testimony compelling the district ct to issue a preliminary claim construction ruling favorable to π's case – indeed, the district ct found not only reasonable probability of success but strong probability, which it held to create a rebuttable presumption of irreparable harm, which Δ failed to overcome – finally, the trial ct considered the balance of equities (the hardship to π of denying the motion if π later wins at trial, vs. the hardship to Δ of granting the motion if Δ later wins at trial) – a key factor is whether the injunction is intended to protect past harm, which damages are likely able to compensate, against future harm, which may create market effects of inestimable economic value – the trial ct appeared to consider all such issues, and its decision is afforded some deference in the absence of clear error, which does not appear here, and is therefore affirmed
- CAFC trends regarding preliminary injunctions: In its early days, the CAFC appeared to favor patentees and give broad deference to granted preliminary injunctions – e.g., *Smith International, Inc. v. Hughes Tool Co.* (1983): a strong likelihood of success at trial creates a rebuttable presumption of irreparable harm; and *Windsurfing Int'l, Inc. v. AMF*

Inc. (1986): the defendant's likely insolvency as a result of the preliminary injunction is not usually adequate to deny injunction – however, more recently it has regard them as "a drastic and extraordinary remedy not to be routinely granted" – e.g., *High Tech Medical Instrumentation, Inc. v. New Image Industries Inc.* (1995), holding that the presumption of irreparable harm is not irrefutable, and raising the bar for the certainty of success required to create the presumption; and *Stanford Havens Products Inc. v. Gencor Industries Inc.* (1990): defendant's likely insolvency should be considered in the balance of equities – finally, the CAFC has expressed ambivalence about the comparative strengths of the four elements of the test; clarification is probably forthcoming

- Public interest: The CAFC usually finds that the public has a strong interest in protecting patents via preliminary injunctions, but in exceptional cases this is denied (*Hybritech Inc. v. Abbott Labs* (1987): public interest in healthcare technologies would be damaged by enjoining defendant from making healthcare products)
- Preliminary measures in international patent practice: Italy and Austria allow interim injunctions comparable to those in the U.S. – Britain and France allow preliminary orders permitting discovery to take place in order to flesh out a cause of action – Japan's preliminary injunction practice is very disorganized; it is conducted by a different court than that hearing the actual case, and often takes even longer than the main litigation (contrast with Holland, offering a very fast and useful preliminary injunction practice)

§17.1[b] Injunctions – Permanent

- *Joy Technologies, Inc. v. Flakt, Inc.* (1993): π patented a method of desulfurizing flue gas produced by burning coal, including the principle of partially recycling calcium hydroxide used in the process – π sued Δ for infringement, and the trial ct found infringement and permanently enjoined Δ from direct and contributory infringement, specifically barring Δ, throughout the life of the patent, from entering into any contracts for the sale or construction of any pollution-control system embodying π's patent – Δ appealed, noting that the production of such a system required five years of construction, effectively extending π's patent term by five years – CAFC vacated the injunction and remanded for issuance of a more appropriate injunction: injunction awards are reviewed on a "clearly erroneous" standard, affording considerable deference to the trial ct – however, §283 allows injunctions only "to prevent the violation of any right secured by patent," not for punitive reasons – π argues that the injunction as issued prevents competitors from "making" a device that performs its patented process before the term of the patent, and that a contract for the purchase and sale of the device (complete with schematics) qualifies as infringement – however, prior decisions hold that selling a device that performs a process does not constitute a sale of the *process* (*Standard Havens Products, Inc. v. Gencor Industries, Inc.* (1991)); only one who operates the device to carry out the process commits infringement – by the same token, soliciting anyone else to build such a device is not an inducement of infringement (since the underlying activity is also not infringement) – given the foregoing facts, the injunction awarded to π did not protect a right guaranteed by the patent, but exceeded the bounds of infringement; this is not remedial but punitive, and constitutes legal error – π also argues that the sale of such a device would amount to "a scheme to avoid patent infringement," whereby a competitor obtains a device proven to work past the point of testing, and can use it with impunity near the tail end of the patent – π cites *Paper Converting Machine Co. v. Magna-Graphics Corp.* (1981) for the proposition that the sale of a disassembled kit, which can

be easily assembled and used, nevertheless infringes a patent for the device – again, this case dealt with a patent for a device, whereas the present case involves a patent for a process; Δ may build the machine to perfection as long as the machine isn't operated during the life of the patent – in essence, π is attempting to convert method claims into process claims – π argues that this injunction is necessary to protect against infringement by Δ that would be difficult to detect; this is a legitimate concern, but π's concerns about losing a monopoly at the tail end of its patent do not justify wholesale exclusion of Δ from the market for five years

- Injunctions for enforcement of patent rights: As noted in *Joy Technologies*, injunctions can only enforce rights under the patent, not unrelated rights or punitive measures – similarly, *Kearns v. Chrysler Corp.* (1994) considered an argument by the patentee that Δ's infringement deprived him of part of his exclusive patent term, and should be compensated by granting an injunction extending past the expiration of the patent – the trial ct and CAFC denied this request as an unavailable remedy, since the patent affords no exclusive right after its expiration – note that Israeli courts have previously allowed such injunctions (*see Eli Lily & Co. v. Teva Pharmaceutical Indus. Ltd.* (1995))
- Injunctions in light of the public interest: In the unusual case of *City of Milwaukee v. Activated Sludge, Inc.* (1934), the patentee of a sewer system design won an infringement suit against a city using the technology, but the city vacated a permanent injunction because enjoining the city would have required it to dump untreated sewage into surrounding waters; of additional relevance was the fact that the patentee was not using the patent in any meaningful way
- Injunctions vs. compulsory licensing: *Foster v. American Machinery & Foundry Co.* (1974): injunction withheld from a patentee who wasn't using the technology, in favor of a compulsory licensing scheme that allowed the patent to be exercised – such conduct is often justified for three reasons: public interest (the public wishes to have access to an embodiment of the technology), the balance of equities (where an injunction would harm Δ's business but provide no benefit to π), or unclean hands (since the patentee has committed patent abuse, equitable remedies can be withheld) – this rationale is strong where the patentee demands clearly unreasonable royalties or simply suppresses the technology (*Vitamin Technologists, Inc. v. Wisconsin Alumni Research Foundation* (1944): the patentee of a process for irradiating foods with ultraviolet light to add Vitamin D was a major producer of butter, and structured its licenses to block use of the technology on margarine in order to stifle competition; district ct refused to enjoin WARF, because the public interest in market choice greatly outweighed the patentee's right to protect its market share) – however, this rationale has been criticized as disrupting the bargaining position of the parties in royalty negotiations by granting access to the technology at a court-determined (perhaps arbitrary) "reasonable rate"
- Designing around an injunction: Enjoined competitors often try to design around the injunction, and the patentee files suit for continued infringement and ask for contempt proceedings – CAFC allows contempt proceedings if infringement is proven to have occurred – however, this may open the door to harassment by the patentee

§17.2 Damages

- *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.* (1978): π patented a duct design, which Δ infringed over a period of eight years – on the issue of damages, trial ct appointed a special master who awarded a royalty of 2½% of gross sales price as a reasonable royalty

on Δ's sales – sixth circuit court of appeals reversed damages award: §284 permits monetary relief in the form of "damages adequate to compensate for the infringement" – the Supreme Ct has confirmed (*Aro Mfg. Co. v. Convertible Top Replacement Co.* (1964)) that this is solely a measure of the patentee's damages, without reliance on the infringer's unjust enrichment: "had the infringer not infringed, what would patent holder-licensee have made?" – π asserted damages due to lost sales, which requires proof of four elements: (1) demand for the patentee's product, (2) unavailability of noninfringing substitutes, (3) the patentee's capability to exploit the demand, and (4) the amount of profit he would have made – the special master properly denied damages based on the lack of evidence of π's lost profits – where damages cannot be proven, a reasonable royalty can be assessed, measured as "the amount which a person desiring to manufacture and sell a patented article as a business proposition would be willing to pay as a royalty, and yet be able to make and sell the patented article at a reasonable profit" (*Goodyear Tire and Rubber Co. v. Overman Cushion Tire Co.* (1937)) – the special master's award of 2½% amounts to $44,000, which is clearly inadequate in light of π's substantial lost sales and $400,000 in litigation fees – affirming this award would tacitly authorize infringement, with the guarantee that the intentional infringer will only have to pay a reasonable (perhaps trivial) royalty at a much later date; this makes infringement a viable business decision – in setting the 2½% royalty rate, the special master took into account the following relevant factors: the content of the patent, the extent of the patent taken, the extent of use of the patent, and the usefulness and commercial value over prior art – in deciding value, the special master made four findings: (a) substantial noninfringing substitutes existed in the market, (b) π's high price differential was unsustainable in the face of competition, (c) the assessment of a fair royalty rate was persuasively supported by Δ's expert, and (d) the royalty should be calculated based on Δ's profit margin of 4.04% – each step in this reasoning is erroneous: (a) π had no direct competitors, and the value of its patent is demonstrated by Δ's knowing infringement, as well as the market success of Δ's copied product and Δ's internal memoranda (acknowledging that customers preferred a design like π's patent and hawking its features) – thus, the only alternatives on the market were infringing products and significantly less desirable alternatives that lacked the patented features – (b) π's prices were sustainable in light of no competition and backed by π's patent, and in fact were sustained for the five years preceding Δ's infringement – (c) the testimony of Δ's expert about a reasonable royalty was based on typical licensing negotiations between willing licensor/licensee in the presence of substantial noninfringing uses; a better context would have been a patented product with no reasonable substitutes, where π's prior investment and profits wholly dependent on the market monopoly – (d) the "infringer's profit" element in setting a reasonable royalty is not calculated from their actual profits, but the profit that an authorized licensee would likely have made – case remanded for new damages award

- *Rite-Hite Corp. v. Kelley Company, Inc.* (1995): π patented a mechanism for locking delivery trucks to docking platforms, called the "Dok-Lok" – π invented two different models (automatic, "ADL," and manual, "MDL"), patented them under two sets of patents, and licensed both to many independent sales organizations (ISOs) – subsequently, π sued Δ for infringement of the MDL locking mechanism (but not the ADL model); trial ct found patent valid and infringed, and this case focuses on relief – π asserted that Δ's sales of MDL competing device had caused it to lose sales of both MDL

and ADL devices – trial ct measured relief based on π's lost sales of both models (based on wholesale price), π's lost sales of an unpatented "dock leveler" that usually accompanied the sale of the docking mechanism, and the reasonable royalty rates for all sales that Δ made (plus prejudgment interest) – Δ appealed on four grounds: (1) relief was inappropriate for sales lost for the ADL, which Δ hadn't infringed; (2) relief was inappropriate for profits lost on the unpatented dock leveler devices; (3) ISOs have no standing to sue for patent infringement; and (4) ct improperly calculated "reasonable rates" – π also appealed, contesting trial ct's reliance on wholesale profits rather than retail profits – CAFC affirmed in part, reversed in part: First, the basis for all of these rulings is 35 USC §284: "the court shall award damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court" – cts have interpreted "adequately" to mean "fully," i.e., all profit lost because of the infringement (see *Aro Mfg. Co. v. Convertible Top Replacement Co.* (1964) – specific rulings: (1) relief for ADL sales affirmed: a patentee is entitled to all product profits that would not have been lost "but for" infringement – *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.* (1978) illustrates a four-part test for "but-for" lost profit recovery: patentee must show (1) demand for the patented product, (2) absence of acceptable non-infringing substitutes, (3) manufacturing and marketing capability to exploit the demand, and (4) the amount of profit it would have made – here, π has demonstrated "but-for" losses of the ADL model as well as the MDL model – Δ argues that it hasn't infringed the ADL patent, but these lost sales were both "but-for" and proximate, i.e., Δ "could have reasonably foreseen that its infringement of the '847 patent [for the MDL] would make it liable for lost ADL sales in addition to lost MDL sales" – though not expressly allowed by the statue, such recovery is necessary to effectuate "adequate" ("full") recovery for the infringement – (2) relief for unpatented leveler sales vacated: courts apply an "entire market value rule" to determine whether unpatented components ordinarily sold with a patented device should be figured into infringement damages – initially, this test was formulated as follows: for a patented improvement of an unpatented machine, profits lost from the sale of the improved machine were only allowed if the entire value of the machine was "properly and legally attributable" to the patented improvement – this test has been refined and relaxed: the patented feature must be "of such paramount importance that it substantially created the value of the component parts" (*Marconi Wireless Telegraph Co. v. U.S.* (1942)), or simply put, the patented feature must be "the basis for customer demand" – however, the patented and unpatented features must be part of "a single assembly or parts of a complete machine, or together constitute a functional unit" – although π's dock-locking device and the unpatented leveler were used together, they did not function together to accomplish the same result; their bundling is more for marketing purposes – this is different from the MDL/ADL holding: ADLs and MDLs inherently compete against each other, but the leveling device constitutes a separate market – (3) royalty calculation affirmed: trial ct assessed verdict as 50% of the net profits from Δ's sales – ct's calculation was not clearly erroneous; it found that π's device was covered by a "pioneer patent" with commercial success, and that Δ's status as a large competitor of π would have made for higher-than-average licensing terms – Nies dissent: majority holding awards relief for a patent that is not infringed, which constitutes an expansion of the patent right – Newman concur/dissent: sale of "collateral" items should

be compensated; majority limitation to "inseparable" items is legally ambivalent and economically unsound – Nies dissent: infringement damages should bear some relation to patent rights, not merely causation in fact; thus, awarding relief for sales lost on an unpatented article should not be within the bounds of §284

- Expansion of *Rite-Hite* concepts: *King Instruments Corp. v. Perego* (1995): Court awarded damages against a competitor who made a few sales of π's patented cassette-splicing technology, even though π hadn't commercialized its patent – damages were awarded upon proof of Δ's embodiment of π's patent, and based on π's (theoretically) lost profits – the CAFC approved of the trial ct's damages remedy, holding that whether or not π's products embodied the patent at issue was not relevant, and that such a requirement would force patentees to accept a "reasonable royalty" and allow infringers to take a compulsory license against an unwilling patentee – also, the "convoyed sale" rule was applied in *Stryker Corp. v. Intermedics Orthopedics Inc.* (1996): π's hip prosthesis patent consisted of a jointed stem and a distal tip; Δ sold an infringing device that could be used without the distal tip, thereby avoiding π's patent – however, whether or not the distal tip was needed was determined in the middle of the surgery, so surgeons had to order the whole device every time – trial ct affirmed infringement of π's patent for every device, holding that the sale of the device displaced a sale of π's device, whether or not it was eventually used to infringe
- *Bic Leisure Products, Inc. v. Windsurfing International, Inc.* (1993): π, Windsurfing Int'l, obtained a patent on a windsurfing board design – π produced its own boards, targeting the top end of the market, but saw its U.S. market share fall from 29% to 13% over two years due to delayed adoption of a new manufacturing method – π also licensed its boards to many competitors, both in the U.S. and Europe, with consistent terms of 7.5% royalties – Δ, BIC Leisure Prods., entered the market with cheaper, entry-level boards based on π's (unlicensed) patent – trial ct found infringement and awarded damages based on the *Panduit* test, requiring π to show (1) demand for the patented product, (2) absence of acceptable noninfringing substitutes, (3) capacity to exploit demand, and (4) profits lost due to infringement – trial ct concluded that π would have captured all of Δ's market share but for Δ's infringement, and thus awarded damages based on a percentage of Δ's annual sales, and also awarded lost royalties that π's licensees would have realized – trial ct refused damages requested by π's argument that Δ's sales had eroded its sale price – CAFC affirmed damages assessment based on lost royalties, and affirmed denial of "price erosion" damages, but reversed based on market share: trial ct failed to apply the "but-for" requirement, and there is substantial doubt that π could have realized Δ's market share, since the companies aimed at different ends of the market (with π's prices almost double Δ's) – a better assessment would have spread Δ's sales across all market competitors, only a portion of which π would have attained – thus, the first two elements of the *Panduit* test are not satisfied here, so no "but-for" proof is available to support damages based on lost profits – instead, damages should be based on reasonable royalties, since its willingness to share the technology is evidenced by its extensive licensing, and its value is apparent from the consistent royalty rate – finally, trial ct properly found π's evidence of price erosion too speculative to support damages: although π's prices clearly dropped over three years, this appears to have been due to competition by other kinds of sailboards, market competition, and π's bad decision not to

adopt a cheaper manufacturing technique; thus, π's price erosion was apparently not caused by Δ's infringement

- The market share rule: *Pall Corp. v. Micron Separation, Inc.* (1995): CAFC held that when a patentee settles a suit against one infringer, the infringer may be considered a market competitor in evaluating damages against any other infringer; this prevents awarding full market-share damages against each of several infringers, which would constitute multiple recovery
- Price erosion: *Windsurfing* raised the question of price erosion from unfair competition caused by infringement – this issue also arose in *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.* (1992): ct awarded π damages for profits lost due to price erosion by Δ's infringement of a patent for orthopedic casting tapes, which caused vigorous price competition; ct awarded damages based on the conclusion that π would have sustained a 4% price hike per year to match inflation
- Reliability of proof of damage: The CAFC has consistently held that damage awards must be supported by credible evidence – *Oiness v. Walgreen Co.* (1997): CAFC reversed a jury verdict assessing damages for infringement of a headrest device, which π assessed by showing photos of the amount of floor space in three Walgreens stores devoted to the infringing headrests, and then multiplying by Δ's 1,600 stores, the average price, and the five-year duration of infringement – CAFC considered this reasoning "evidence adding vague estimation and gross extrapolation to unsupported presumption… fraught with speculation" that failed to account for seasonal, regional, and economy fluctuations
- Reasonableness of royalties: *Georgia-Pacific Corp. v. United States Plywood Corp.* (1970) set forth a long list of relevant factors, including: evidence of an established royalty with other competitors; royalties for similar technologies in the market; the nature and scope of granted licenses (exclusivity, territory restrictions, nature of resale); patentee's efforts to maintain market share by not licensing to others; commercial relationship between patentee and infringer (competitors? etc.); effects of sales of the patented technology on other products (e.g., tying); remaining term of patent, and term of license; established profitability and popularity of the patented product; advantages of patent over the prior art; the nature of the patented invention; the materiality of the infringement, and the profit derived therefrom; the degree to which the patent contributes to the value and profit of the product; typical profit margins in the market; and expert testimony – in practice, this finding looks like an equity determination (*Trell v. Marlee Electronics Corp.* (1990): where only evidence submitted was of the royalty rate to another competitor, applying this rate is inappropriate where it was derived from an exclusive license to a company making full use of the technology, compared with the infringer's use of only one aspect)
- Hypothetical negotiations: Setting a reasonable royalty requires the use of the legal fiction of imaginary dealings, with the goal of finding a rate adequate to compensate the patentee (for precedent and background, *see Fromson v. Western Litho Plate & Supply Co.* (1988)) – the degree of imagination required depends on the volume of evidence available; in cases of infringement shortly after a patent issues, very little evidence is usually available – the royalty should reflect more than just the value at the time of issue, which may be nominal: should also reflect the potential value that could have been realized – also, the legal fiction assumes that both parties were willing and reasonable in

licensing, when in fact the infringer opted instead to infringe, and the patentee may have been unwilling to bargain – also, the fictitious negotiations are presumed to have occurred at the moment infringement began, and in light of what was known then (*Wang Laboratories, Inc. v. Toshiba Corp.* (1993))

- *Panduit* "kicker": In *Mahurkar v. C.R. Bard, Inc.* (1996): Trial ct added 9% to its reasonable royalty assessment as compensation for the patentee's litigation costs – CAFC reversed, noting that *Panduit* does not condone a "kicker," even though it expressly acknowledged the patentee's extensive costs; in fact, *Panduit* included a statement that it established "no view especting the applicability of rules governing willful infringement, treble damages, or attorneys' fees, none of which have been made of issue here" – however, the CAFC backtracked on this issue in *Maxwell v. J. Baker, Inc.* (1996), affirming an augmentation of the reasonable royalty based on a jury instruction to consider "whether Maxwell was damaged in an mount in excess of the amount of the reasonable royalty and if so, by how much"
- *Gerber Garment Technology v. Lectra Systems* (1995): (English patents court case) – π invented some automatic fabric cutting machinery and obtained two patents, "Gerber 1" and "Gerber 3" – these patented machines enabled clothiers to save considerable time and material in manufacturing clothing over the prior art methods (mostly manual), and thus came to dominate the field – π also sold CAD computers compatible with the manufacturing machinery, and due to poor intercompatibility, CAD computers from other manufacturers didn't work with π's machines – Δ entered business with an infringing version of the same device, but whereas π's machines were aimed for heavy-use markets, Δ's products were sold at a lower price to the small-use market; however, π later introduced a version for this market – (additional trivial factors: Δ made several "vaporware" announcements, including the development of a heavy-use machine, but these had little impact; two other companies infringed π's patent, but achieved very few sales) – in total, during the life of the patents (now expired), Δ's infringement netted 25 sales worth $3.6 million – trial ct assessed damages in the amount of $9.757 million, based on lost sales to π of every machine Δ sold, as well as "ancillary" profits related to CAD computers, parts and service that π would have realized, and post-expiration sales – patents court affirmed award of damages for "ancillary" infringement: (court engages in long review of prior cases and analysis of public policies: the prevention of calculated infringement, where damages for infringement are outweighed by the profit form post-expiry sales, vs. the concept of post-expiry sales as "too remote" in comparison to the scope of the patent monopoly) – after analysis, it seems prudent to allow damages for infringement of "bridgehead" sales where the sales are foreseeably related to the patented machine – this ruling comports with U.S. decisions (*Kaufman v. Lantech* (1991): similar damages allowed where exists a "sufficient nexus between the infringement and the damage") – here, all of the "ancillary" services cited by the trial ct, including CAD computers, service, replacement parts, and post-expiry "bridgehead" sales, were foreseeably related to π's patented machines, and thus infringement damages can be awarded for them
- English principles for infringement damages (vs. U.S. law): *Rite-Hite* and *Gerber* display the reversed positions of these countries; the U.S. is usually more favorable to patentees, but allows a comparatively restricted scope of damage awards – these courts also hold reversed positions on whether an infringer may argue that he would have produced a non-

infringing product if the infringement verdict had been foreseeable; UK courts refuse such a defense unless a competing non-infringing device is already on the market (the "availability for purchase" doctrine), whereas the U.S. allows this defense in most cases

- Japanese principles for infringement damages: Japan offers very limited relief for patentees – even worse, these courts allow infringers to withhold discovery documents that might show the degree of infringement if they have a "legitimate reason" for doing so, e.g., disclosure of confidential information – for these and other reasons, Japanese patent law is relatively hostile to patentees' interests
- German principles for infringement damages: Like the U.S., Germany is quite friendly to patentees but limits infringement damages, e.g., only awarded for infringers acting "with fault," and applying a three-year statute of limitations
- Infringement of international patent publications: The European Patent Convention allows compensation awards "reasonable under the circumstances" against those who infringe a patent between the date of its international publication and its date of issue – however, every country in the EU may enact its own standard of enforcement, and in practice, implementations vary widely

§17.3 Enhanced Damages and Attorney Fees

- *Read Corp. v. Portec, Inc.* (1992): π created and obtained two design patents on a portable loam-screening apparatus for separating fine dirt from coarse dirt – Δ, competitor, hired a patent attorney, Groff, to draft a written opinion on the scope of π's patent; Groff's opinion noted several critical limitations the patent and speculated that it could be designed around – Δ then created some drawings of a different design and hired another patent attorney, Valiquet, who also concluded that several limitations were critical, citing π's prosecution-history amendments to avoid the prior art, and concluded that Δ's device would not infringe – Δ and Valiquet worked together closely to prepare a non-infringing design, and Δ eventually released a product – π sued for infringement; ct found infringement of both patents, and granted treble damages and attorney's fees, citing Δ's "willful" copying and "manipulative" litigation stategy – CAFC affirmed infringement of one patent, reversed infringement of the other patent, but substantially limited damages award: 35 USC §284 allows treble damages, at the discretion of the trial ct, depending on the "egregiousness of the defendant's conduct" – primary factors (from *Bott v. Four Star Corp.* (1986)): whether the copying was deliberate, whether the infringer formed a good-faith opinion as to infringement, and the infringer's behavior during litigation; secondary factors: defendant's size and financial condition, the closeness of the case, the duration of the misconduct, remedial actions taken by the defendant, the defendant's motivation for infringing, and whether the defendant concealed misconduct – while district ct is permitted discretion in this determination, it must explain its reasoning, particularly where the maximum penalty is assessed – treble damages cannot be awarded in the presence of an unintentional infringer – here, the trial ct's conclusions are unwarranted: certainly Δ intended to compete, but Δ made several changes suggested by legal counsel in order to avoid infringing π's patent; "designing around" is to be encouraged, since it provides market alternatives – π's solicitation of and reliance on a legal opinion prevents a finding of "willfulness," especially since the opinions of both attorneys appear competent – trial ct misread both legal opinions: it cited Groff's statement that the designed-around device "might not be as efficient and commercially appealing" as evidence that Δ declined to follow the advice of legal

counsel, and held that Valiquet had failed to consider the doctrine of equivalents, though he clearly did so in predicting prosecution history estoppel – trial ct also criticized Δ for failing to give Groff's opinion to Valiquet for consideration; in fact this was a better option, as Valiquet reached his opinion without influence from Groff's – most importantly, Valiquet's opinion was detailed, thorough, and "on the mark" with respect to non-infringement of one patent – in retrospect, this was a close case, and the fact that the trial ct reached a different opinion than Valiquet does not render his opinion incompetent – trial ct also erred in criticizing Δ's litigation strategy as lacking a good-faith belief in a valid defense – 35 USC §285 allows award of attorney's fees in "exceptional" cases – even if both patents had been infringed, attorney's fees were not warranted, since Δ had previously obtained opinions of non-infringement from two attorneys – trial ct also cited one of Δ's trial exhibits that displayed a competing product in a somewhat misleading way; trial ct characterized this tactic as "manipulative" and refused to consider Δ's explanation for the mistake; while it was proper for trial ct to exclude Δ's explanation from the jury trial, it should have received and considered it before awarding attorney's fees for misconduct

- Infringement of design patents: In *Braun Inc. v. Dynamics Corp.* (1992), CAFC held that enhanced damages are never available for infringement of a design patent (further demonstrating the CAFC's limited respect for design patents)
- Analysis of attorney's fee awards: This is supposed to be performed as a two-step test: first, whether clear and convincing evidence exists that the case is "exceptional"; second, whether the award to the prevailing party is warranted (*Interspiro USA, Inc. v. Figgie Int'l, Inc.* (1994)) – "prevailing" is undefined (what if both parties win on some arguments?), but a party may "prevail" by winning only some of its claims (*Beckman Instruments, Inc. v. LKB Produkter AB* (1989))

§17.4 Marking

- Overview: 35 USC §287: "Patentees may give notice to the public that the same is patented, either by fixing thereon the word "patent" or the abbreviation "pat.", together with the number of the patent… In the event of failure so to mark, no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice. Filing of an action for infringement shall constitute such notice."
- *Amsted Industries Inc. v. Buckeye Steel Castings Co.* (1994): π patented a "center plate" combination invention for railway cars – π sold a particular component of this combination to some customers, with the knowledge and approval that they make and sell the patented combination; however, the customers failed to mark the products as embodying π's patent – in 1986, π sent a mass mailing to all of π's competitors, generally notifying them of the existence of the patent – in 1989, π sent notice to Δ specifically asserting infringement by one of Δ's products – Δ was later found to have infringed, and trial ct awarded damages dating back to the 1986 letter; Δ appealed, arguing that this was insufficient notice, and that its liability should be limited to the period following the 1989 notice – CAFC affirmed limitation of liability to the period following the 1989 letter: the §287 marking requirement applies to both the patentee and its licensees, both express and implied; the customers' failure to mark their products operated as inadequate notice under §287; moreover, π could have satisfied this requirement by marking the component that it

sold – in finding the 1986 letter adequate, trial ct cited Δ's subjective understanding that it might be infringing the patent; even if true, this fact does not relieve the patentee of their duty to notify the infringer, nor the §287(a) limitation on liability for infringement as requiring proof that "the infringer was notified of the infringement" – this notice must be specific to the infringer, and must cite not only the existence of the patent but the recipient's violation of it (*Dunlap v. Schofield* (1894)) – the 1986 notice falls short of this requirement in many respects, and so liability is limited to the period following the 1989 notice

- Marking tactics: Patented goods are almost always marked in order to satisfy 35 USC §287 – "patent pending" articles might not be marked, since the applicant cannot predict whether the patent will issue or the breadth of its coverage; it may be better to surprise competitors after they spend resources developing competing products, in which case the applicant waits for the patent to issue and then sues for an injunction – of course, these strategies are significantly altered in overseas patent practice by the publication of the application
- False marking: 35 USC §292 allows *qui tam* actions (filed by anyone) against a firm that falsely (and intentionally) marks its products as patented, with a $500 penalty per falsely marked article – competitors may also file suit for unfair competition or antitrust violation, but this risk can be discharged if the patentee simply marks his product as "protected by one or more of the following patents…"
- Marking of process patents: Generally the patentee has no obligation (or method) of marking process patents – an open question exists for patents claiming both an apparatus and a method (*American Medical Systems, Inc. v. Medical Engineering Corp.* (1993): the apparatus must be marked to cover the process; *Hanson v. Alpine Valley Ski Area, Inc.*(1983): the method and apparatus can be considered separately)
- International marking requirements: Most foreign patent offices and acts impose no marking requirement (China simply grants the patentee the right to do so); other countries require marking, even more strictly than the USPTO, for enforcement (Chile even requires the patentee to expunge marks from the articles after the patent expires)

Chapter Eighteen: Patent Enforcement

§18.1 Ownership and Assignment of Patent Rights

- Recording: 35 USC §261: "An assignment, grant or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent and Trademark Office within three months from its date or prior to the date of such subsequent purchase or mortgage"
- *Filmtec Corp. v. Allied-Signal Inc.* (1991): π utilized and patented a reverse osmosis screen for use in film processing, invented by John Cadotte, one of its founding members – Cadotte had formerly been employed by the North Star Division of Midwest Research Institute (MRI), a nonprofit group that performed contract work for the federal government under an obligation to assign all inventions and resulting patents developed by its employees for film processing to the federal government – however, Cadotte claimed to have invented the technology one month after leaving North Star, and had executed an assignment of the invention to π – π sued Δ, a competitor, for infringement – Δ asserted that the rights to the film belonged to the federal government, citing Cadotte's lab notebook as evidence that π invented the screen while employed by MRI, and argued

that π's lack of ownership nullified its cause of action – trial ct declined to consider this question, characterizing the government's rights under the employment obligation as purely equitable, and not grounds for a defense, and granted π a preliminary injunction – CAFC reversed and remanded for consideration of patent ownership: the standard of review is whether π has a reasonable chance of likelihood of success on the merits of the ownership issue – the record strongly suggests that π's invention was created during his employment with MRI – although the record does not evidence whether π's employment obligation specifically required him to assign his rights, his employer was under a clear obligation – this evidence is not conclusive, but is strong enough to preclude a preliminary injunction – intellectual property rights are legally treated as regular property, and all of the rules of assignment and ownership apply; as with real property, a patentee can only sue if it owns some rights under the patent – trial ct's opinion of the "equitable" nature of the federal government title stemmed fro *Sigma Engineering v. Halm Instrument*, which held that where an employer obligates its employees to assign rights to all future inventions, the employer has an equitable claim to any such inventions if the employee does not so assign – however, the obligation in this matter is different: the assignment contract did not obligate MRI to make some future assignment of such inventions, but *actually assigned* all future inventions; no further action is necessary to effectuate the assignment – π responds that Cadotte's assignment to the federal government loses priority to the assignment to π, because the MRI/government assignment was not recorded with the USPTO in accordance with 35 USC §261 – this statute does hold that a *bona fide* purchaser of patent rights will take title to an invention over a prior assignment to another party if the prior assignment is not recorded within three months of assignment – this defense is weakened by two facts: the subsequent assignee must receive the assignment in exchange for valuable consideration, not merely as a donee or gratuitous assignee, and no such consideration is visible here; more importantly, π does not look like a *bona fide* subsequent purchaser, as it knew about Cadotte's former employment

- Assignment and §102(b): The CAFC has ruled that the assignment of rights to an invention or patent application does not constitute sale of "the invention" sufficient to raise a §102(b) novelty bar (*Moleculon Research Corp. v. CBS, Inc.* (1986))

§18.2 Standing

- *Waterman v. Mackenzie* (1891): π invented and patented a fountain-pen holder, and assigned the rights to his wife – his wife then assigned the patent back to him – five days later, his wife assigned the patent to a company called Asa L. Shipman's Sons, and then later licensed the patent to her husband – after these dealings, π filed suit against Δ for infringement; Δ asserted that π did not own the patent and lacked standing to sue, and the district ct dismissed – Supreme Ct affirmed dismissal of π's complaint for lack of standing: a few, but limited number, of assignments are appropriate under a patent, including an assignment of the whole patent, of an undivided interest in the patent, or exclusive ownership of a particular aspect of the patent (e.g., certain claims or embodiments) – licenses of all kinds can be granted, but do not impact the nominal ownership of the patent, and any suit filed by the licensee must include the current assignee as owner – thus, a patentee may not "assign" the right to make and use, but not sell, a particular invention, as this is not a distinct property right that can be conveyed – here, π assigned the totality of the patent to his wife, who conveyed back to π the right to

"the sole and exclusive right and license to manufacture and sell fountain pen-holders containing the said patented improvement throughout the United States"; this was clearly an exclusive license, not an assignment – next, the wife assigned the patent to Asa L. Shipman's Sons, conditioned on the execution of a promissory note payable to the grantees; this operated as a mortgage, including the legal transfer of the title to the mortgagee (Asa L. Shipman's Sons) in securement of the debt – thus, the only party with standing to sue over the patent at issue is Asa L. Shipman's Sons, and π has no standing

- Validity of assignments: Issues of legal standing are ordinarily resolved by examining the legal instruments – an exclusive licensee can only sue in the name of the patentee; a nonexclusive licensee has no standing to sue, since this may lead to an infringer being sued separately by a multiplicity of licensees (*A.L. Smith Iron Co. v. Dickson* (1944)) – if the patentee does not want to join the suit, one suing in his name may join the patentee as a defendant, or even as an involuntary plaintiff (*Katz v. Lear Siegler, Inc.* (1990), and *Rite-Hiute v. Kelley Co.* (1987)) – the legal difference is that an exclusive licensee is conveyed the right to exclude others, whereas a nonexclusive licensee has no such right, and is only given a covenant that the patentee will not sue

§18.3 Personal Jurisdiction

- *Beverly Hills Fan Co. v. Royal Sovereign Corp.* (1994): π, a California corporation that owned a patent for a ceiling fan design, asserted infringement by Δ Ultec, a Chinese corporation that manufactured the accused product in Taiwan, and its stateside distributor, Δ Royal Sovereign Corp., a New Jersey company – π filed suit against Ultec and Royal in the Eastern District of Virginia, asserting sale of the infringing fan to customers throughout the U.S., including in the state of Virginia – Ultec and Royal moved to dismiss for lack of personal jurisdiction: Ultec and Royal each asserted that they had no assets or employees in Virginia, no Virginia agent for service of process, and no license to do business in Virginia, and between them had made only a one-time shipment of unrelated goods into Virginia – π countered that Δs' fans were sold through Builder's Square, which maintained stores in Virginia – trial ct considered the two limits on its jurisdictional reach, Virginia's long-arm statute and the due process clause of the Constitution, and considered whether Δs' actions were sufficiently purposeful for entry into commerce in Virginia to warrant jurisdiction (citing *Chung v. NANA Development Corp.* (1986)); it found its relationship with Virginia too attenuated to support this conclusion, and granted the motion to dismiss – CAFC reversed motion to dismiss and reinstated π's complaint: this issue is a pure question of law, taking into account the limitations cited by trial ct; however, precedent on this topic is scattered and inconsistent – due process permits personal jurisdiction only if the defendant has established "minimum contacts with the state" (*International Shoe Co. v. Washington* (1945)), and said contacts must also be "purposeful" (*Burger King Corp. v. Rudzewicz* (1985)) – Δ's contacts amount to a purposeful shipment of goods to an established distribution channel that operated in Virginia, and this is sufficient to grant jurisdiction – jurisdiction will not lie where the importing of the goods was "unilateral" and not directed by the manufacturer (*World-Wide Volkswagen Corp. v. Woodson* (1980)), but this case also creates the "stream of commerce" basis of jurisdiction that properly describes Δs' conduct – a "minimum contacts" finding also requires a determination of whether granting jurisdiction would comport with "the concept of fair play and substantial justice," such that jurisdiction should be withheld where the burden of litigating in the

state considerably outweighs an attenuated "minimum contacts" action – this withholding is not warranted here, since Royal is only a couple of states away; although Ultec is much further, "progress in communications and transportation has made the defense of a lawsuit in a foreign tribunal less burdensome" (*World-Wide Volkswagen*), and Ultec's activity is pretty direct – finally, Virginia's long-arm statute permits jurisdiction where (a) the defendant caused harm through an act or omission committed in Virginia, or (b) the defendant caused harm by acts or omissions outside of Virginia, but derived substantial revenue from goods used or services rendered in Virginia – it is difficult to consider these questions in the context of intellectual property, an intangible object with no physical situs – Δs argue that is not unreasonable to choose the location of the patentee as the sole situs of harm, as some cts have held in order to promote litigation predictability – however, it is also not unreasonable to hold that jurisdiction arises at the site of the economic harm, i.e., any point of sale; this is more reasonable than choosing the plaintiff's location, because personal jurisdiction issues have always focused on the defendant's actions and circumstances rather than the plaintiff's – finally, Δs' contacts satisfy the "substantial revenue" requirement, which can be presumed from the regularity of shipments through Builder's Square into Virginia

- Personal jurisdiction concepts: The *Beverly Hills Fan* reasoning was critically analyzed in *North American Philips Corp. v. American Vending Sales, Inc.* (1994), which pointed out that "sale" is a nebulous concept, given the various aspects of the locations of the seller and buyer, the location of the goods, the location where the order originated, and the location where the goods changed hands – however, *Beverly Hills Fan* at least properly noted the issues, limitations, and relevant factors in personal jurisdiction, and the universal interest in a consistent and predictable rule of law
- Venue: 28 USC §1400(b): "Any civil action for patent infringement may be brought in the judicial district where the defendant resides, or where the defendant has committed acts of infringement and has a regular and established place of business" – however, this is unhelpful, as §1391(c) defines the term "resides" to mean any place where the defendant is subject to personal jurisdiction; thus, the concept of venue is subsumed into personal jurisdiction
- Declaratory judgment jurisdiction: 28 USC §2201, the Declaratory Judgment Act, allows parties threatened with liability to adjudicate the matter before any harm has been committed, is particularly relevant to patent issues, and the CAFC expressly approved of its use in this context – such an action can be filed if a "real and immediate controversy" exists (*Shell Oil Co. v. Amoco Corp.* (1992): the plaintiff must have a reasonable apprehension that the defendant will file suit if the plaintiff continues the activity, and the plaintiff must have produced the imminently accused device or have arranged to do so)
- Designation of DC venue: Overseas patentees and companies may designate a particular individual as appropriate for service, and register for jurisdiction in Washington DC as if it actually operated there
- International Trade Commission resolution: Overseas parties may ask the U.S. ITC to appoint an administrative judge to resolve a dispute regarding importation of any article (19 USC §1337); the ITC's involvement is at its own discretion, but its decisions usually proceed more rapidly than traditional cts – also, the ITC appoints a staff attorney as a party to the proceedings and a representative of the federal government and public

interest – the ITC's decisions must be approved by the President of the United States, but even then are appealable to the CAFC

- Arbitration: The parties may choose voluntary arbitration of select issues, like validity or infringement, under USC Title 9 – the arbitrator's final ruling is binding on the parties, but not on any other person – this may be convenient, since the parties can focus on the most critical issue and mutually agree on the circumstances of the arbitration
- Court of Federal Claims: This court, collocated with the CAFC, has exclusive original jurisdiction over claims of infringement by the federal government; its role is to award reasonable and entire compensation to the patentee for such use – this limited liability is justified by the fact that the patent issues only with the voluntary consent of the federal government, which may condition such issuance on the terms under which it may be sued; alternatively, it may be viewed as an eminent domain case and a resolution of the patentee's due compensation under the Fifth Amendment (this latter view also creates the basis of relief as measured by "what the owner has lost, not what the taker has gained" (*Leesona Corp. v. U.S.* (1979))

18.4 The Seventh Amendment

- *Markman v. Westview Instruments, Inc.* (1996): π, Markman, appealed the CAFC's ruling as a violation of its right to a jury trial – Supreme Ct affirmed CAFC holding of claim construction as the duty of the judge: this right is an extension of "the right which existed under the English common law when the Amendment was adopted" (*Baltimore & Carolina Line, Inc. v. Redman* (1935)), thereby necessitating a two-step "historic test": first, whether the action at bar was viewed by the English courts as legal (or at least analogous to an action considered legal) vs. equitable or of another nature; second, if legal, whether the action must fall to a jury to preserve the common-law rights that existed in 1791, such that the jury's right to decide the "ultimate dispute" is preserved: "only those incidents which are regarded as fundamental, as inherent in and of the essence of the system of trial by jury, are placed beyond the reach of the legislature" (*Tull v. U.S.*) – today's infringement claim descends directly from the legal claim recognized in England at this time (*Braham v. Hardcastle* (1789)), thus satisfying the first element of this test – the second step is more difficult to evaluate, since nothing like the concept of a claim existed in U.S. or English patent law in 1791; thus, analogies must be considered – the closest analogue is the jury's construction of patent specifications to determine novelty, but these cases are too few and too scant to determine any rules (Walterscheid notes the absence of noteworthy patent cases in the 18th century) – the earliest patent cases describing the process of construction depicts the judge construing some patent terminology as part of a jury instruction (*Bovill v. Moore* (1816)) – the earliest case that ruled expressly on this issue, *Winans v. Denmead* (1853), found construction an issue for the court, and infringement decided by the jury – π cites *Bischoff v. Wethered* (1870) for a reversal of this position, where the Supreme Ct held that the court was not permitted to compare two specifications and instruct the jury as to whether the inventions were identical – however, this ruling was intended to describe the judge's ruling on infringement, not claim construction; and the Court was careful to confirm that "the construction of written instruments is the province of the court alone," and distinguishing its holding as "not the construction of the instrument, but the character of the thing invented" – this consistent ruling on claim construction is further supported by Walker's Patent Laws (1895): "questions of construction are questions of law for the judge, not

questions of fact for the jury," and further noting that since judges lack technical expertise, they may rely on expert opinions, but are not bound by them; and similarly in Robinson's Law of Patents (1890) – this verdict is also supported by practical considerations: judges are likely to conduct it better than juries, owing to their "special training and practice in patent construction" (*Parker v. Hulme*) – π argues that jurors are more skilled at making credibility determinations between competing expert witnesses, but this scenario is less frequent than the scenario where a term can only be construed one way to have consistent effect in the document as a whole, which is more reliably determined by a judge – finally, judges are more likely to rule consistently than juries, which is important both for predictability and also to the doctrine of issue preclusion

- Effect of *Markman*: Different effects of *Markman* were discussed in *Elf Atochem North America, Inc. v. Libbey-Owens-Ford Co.* (1995): this rule is somewhat at odds with the Civil Justice Reform Act, which encourages courts to consolidate cases, minimize separate hearings, and give deference to lower courts' rulings; instead, *Markman* creates a precedent for essentially separate trials on construction and infringement, and allows a three-judge panel of the CAFC to rehear cases *de novo* – if not resolved early, the trial will have to take place, and then the jury will have to wait (perhaps weeks) for the judge to rule on construction – where resolved early in the trial, the issue may dispose of the case, but is also likely to prompt an interlocutory appeal to the CAFC, increasing its workload and increasing appeal of issues not fully fleshed out by evidence presented at trial – finally, some overlap in these responsibilities will undoubtedly exist, e.g., the scope of a term like "substantially" – to complicate matters, some lingering uncertainty or misunderstanding of *Markman* remains (*Metaullics Sys. Co. v. Cooper* (1996): Judge Mayer of the CAFC characterized claim construction as a "mixed question of law and fact," with deference afforded to the court's "factual" opinions)

§18.5 Multinational Patent Enforcement

- *Mars, Inc. v. Kabushiki-Kaisha Nippon Conlux* (1994): π owned a U.S. patent and a Japanese patent related to an electronic coin discriminator, and filed suit in the Delaware district ct against Δ, a Japanese company, along with its U.S. subsidiary, for infringement of both patents – Δ moved for dismissal of the claim of infringement of the Japanese patent for lack of subject matter jurisdiction, citing international comity and forum non conveniens; ct found that it had jurisdiction, but declined to exercise it on the basis of international comity, and dismissed the claim of infringement against the Japanese patent – π appealed, asserting that the trial ct should have accepted jurisdiction on the basis of 28 USC §1338(b), or under 28 USC §1367 – CAFC affirmed dismissal of Japanese patent infringement claim: federal jurisdiction statutes should be read with a conservative approach, and jurisdiction should be denied in cases where the question is not certain – §1338 was enacted to permit federal cts to take jurisdiction of a non-federal unfair competition claim related to a properly raised intellectual property infringement claim – π seeks to extend "unfair competition" (as used in the statute) to encompass the infringement of a foreign patent, which seems to be a novel proposition – this concept is not supported by the law or precedent, however; unfair competition and patent infringement have always been distinct issues, and even §1338 distinguishes between them; thus, interpreting §1338 to encompass patent infringement would exceed the bounds of statutory construction – π also raises §1367, which grants "supplemental" jurisdiction to certain non-federal claims contained in the same action as a federal claim

to which the ct has original jurisdiction – this concept was created in *United Mine Workers of America v. Gibbs* (1966), where the Supreme Ct allowed such joinder where "the entire action before the court comprises but one constitutional 'case'," and where the federal and non-federal claims "derive from a common nucleus of operative fact" – however, this extension of jurisdiction is discretionary, and the trial ct assumed *arguendo* that it had jurisdiction but held this aspect moot – here, the facts in π's complaint prevent a finding of a single nexus: π has sued Δ for infringement of the U.S. patent by building a specific machine, whereas the sole claim in the Japanese patent is an apparatus claim related to the storage of certain electrical signal values – also, the Japanese prior art bears many more references than the U.S. patent, and bears separate consideration for validity – also, π charges Δ with direct and induced infringement by appropriating the device under the U.S. patent, but only with direct infringement of the Japanese patent – in short, "the respective patents are different, the accused devices are different, the alleged acts are different, and the governing laws are different"; it seems inefficient to force Δ to litigate in the U.S. when it will undoubtedly have to litigate in Japan – thus, despite trial ct's *arguendo* assumption of subject matter jurisdiction was incorrect – finally, π argues for diversity jurisdiction under §1332(a)(2), but several public interest factors contravene an award of such jurisdiction: "the local interest in having localized controversies decided at home; the interest in having the trial in a forum that is at home with the law that must govern the action; and the avoidance of conflict of laws, or in application of foreign laws" (*Piper Aircraft v. Reyno* (1981)), as well as translation issues – therefore, the trial ct properly declined jurisdiction on the basis of international comity

- Multinational enforcement issues: The European patent Convention created a streamlined international prosecution system, but did not provide a consolidated system for enforcement; the Hague now fills this role – European cts have also rejected arguments that their jurisdiction powers are limited to their country of origin, and are willing to issue injunctions against conduct that can only occur outside its borders (*Lincoln v. Interlas*, a Netherlands case) – other countries also feel permitted to issue injunctions prohibiting conduct in Europe (*Bard v. ACS*: the Hague agreed to enjoin Δ, a European company that made heart catheters in the U.S. and shipped them to Europe, in violation of π's European patents for the catheters) – cts have found support for these multinational injunctions in the European Patent Convention, and also the Brussels Convention on Jurisdiction and Enforcement of Judgments ("Application may be made to the courts of the Contracting States for such provisional, including protective, measures as may be available under the laws of that state") – Dutch cts have proven especially willing to issue multinational preliminary injunctions ("kort geding") in a short timeframe (a few weeks), at little cost, and with no discovery; German cts are following suit, but English cts maintain a conservative stance – this international approach is driven by changing views of patent law as an inherently multinational exercise with far-reaching implications, and the understanding that nations evaluate and issue patents with a very similar stance and procedure (thus diminishing the view of patent grants as a sovereign or political act, or worthy of the "public interest" in any particular nation) – moreover, incentives for cooperation are strong: every patent is a concern to every nation, since foreign publications affect domestic patentability, and all patents have an impact on increasingly multinational corporations and the global economy

- International forum shopping: Once a patentee has obtained patents to an invention in several countries, the expansive view of multinational patent enforcement permits him to select from among a variety of nations, which may have important differences: discovery, validity determinations, procedural complexities, typical sizes of litigation teams (huge teams in the U.S. and UK, but smaller teams in other countries), availability of preliminary injunctions (cf. the Netherlands), substantive complexity of the local patent law, sophistication of cts (other countries often allow the specialized patent judge to settle the entire case, dispensing with the need to pander to an uninformed jury), availability of compatible patent counsel, and litigation costs – and in some cases, the patent law may materially differ: European patent cts allow accused infringers to raise "Euro defenses" permitted by the Treaty of Rome, such as the "first sale" or "exhaustion" principle – this should highlight the need for extensive discussions with competent local counsel in planning international enforcement

Chapter Nineteen: Licensing, Misuse, and Patent-Antitrust

- Overview: Legally, a patent is a form of personal property, and may be alienated like other forms of personal property – as noted above (*Waterman v. Mackenzie*), that divestment may be of the whole patent, of an undivided interest in the whole patent, or an undivided interest for use in a certain region of the country – the patentee may also attach some retain rights to the transfer of personal property, e.g., royalties – any assignee may enforce the rights that it owns (and don't need the cooperation or involvement of any joint owners); by the same token, a licensee may not enforce the patent, but of course can enforce the terms of the license agreement – along these lines, federal cts have original jurisdiction for patent enforcement, but suits over licenses are simply contract cases that must be brought in state cts (however, cts have held that an exclusive licensor may sue to enforce the patent, so long as the patentee is joined/named (*Yarway Corp. v. Eur-Control USA Inc.*(1985))) – despite its equivalence to personal property, patents should be assigned with regard to the assignment recording requirements of 35 USC §261, and should evince a clear intention to transfer title – licensees might also want to record their interests as a precautionary measure
- Licensing terms: Many license agreements indicate that the licensee has the right to use the invention, this is legally incorrect, since all that the licensee receives is a right not to be sued for infringement of the patent by the patentee; this is a recognition of the fact that a patent does no convey to the patentee permission to use the invention, but solely the right to exclude others from using it – however, even the limited right conveyed by a license can have many forms: it may be exclusive (prohibiting the patentee to grant a license to anyone else); it may or may not be sublicensable by the licensee
- Implied licenses: In addition to exclusive licenses, certain kinds of transactions may imply a limited license: *U.S. v. Univis Lens Co.* (1942): the first authorized sale of an article embodying the patented invention exhausts the right of the patentee to sue the purchaser for using the article, including repairing and reselling it – similarly, full payment of damages for infringement creates an implied license for the infringer to use, repair, an resell the articles embodying the invention

§19.1 The Technology License Agreement

- Preamble: Usually the agreement begins with a preamble, identifying the parties and their intentions, and setting forth definitions

- Granting clause: This section, the heart of the license agreement, describes the nature of the grant (specific rights permitted, exclusivity, duration, etc.); it is often wise to identify the patents being licensed by patent or serial number, along with any other intellectual property rights (copyright, trademark, trade secret, etc.)
- Warranties: The parties should set forth – or disclaim – the warranties that accompany the license (fitness for commercial purpose, merchantability, e.g.) – specifically, the license should address whether or not the patentee warrants that use of the licensed technology will not infringe the rights of any third party, and each party should expressly affirm or deny whether it bears an obligation to indemnify or hold harmless the other party
- Sublicensing: If the parties intend that the licensee may sublicense the technology, the terms should be separately described – the CAFC has recently ascribed an expansive interpretation to the "first sale" doctrine, which may allow the licensee to convey rights to products even if it does not have the right to sublicense
- Dispute resolution: The parties should specify how the contract should be interpreted (under what system of law), and also how disputes will be resolved, e.g., by alternative dispute resolution or arbitration – this section may either set forth the rules of such dispute resolution (location, number of mediators, etc), or it may simply make reference to a group like the American Arbitration Association that maintains an established set of rules
- Third-party infringement clause: A license guarantees that the patentee will not sue the licensee, but it does not guarantee that the patentee will sue infringers – the absence of this right may render the license meaningless, so the licensee is encouraged to include a third-party infringement clause that so obligates the patentee
- "Most favored licensee" clause: A nonexclusive licensee tacitly shares his rights with other nonexclusive licensees – a licensee intending to make full use of the license may wish to include a most favored licensee provision, stating that if the patentee licenses the terms to any other party on more favorable terms, the most favored licensee automatically receives the same terms – the licensor must usually keep the most favored licensee apprised as to the execution and terms of subsequent licenses
- Best efforts clause: Where the primary benefit to the licensor stems from the licensee's successful use of the invention (e.g., where the patentee's benefit primarily flows from royalties), the parties may stipulate that the licensee guarantees the use of its "best efforts" to exploit the technology – the parties may wish to set forth much more rigid requirements, e.g., project budgets and milestones
- Bankruptcy clause: The license should specify how the obligations are (or are not) impacted by the bankruptcy filing of either party – by default, bankruptcy cts allow licensees to continue using technology licensed from a bankrupt licensor (11 USC §365(b)) – however, the trustee of a bankrupt licensee may regard the licensed technology as an asset, and instead of allowing the licensor to cancel the license, the trustee might prefer to assign the licensed technology to another party, such as a creditor – the patentee enjoys a presumption that the license is intended to be personal to the licensee (*Unarco Industries, Inc. v. Kelley Co.* (1972)), and can strengthen this presumption by making the license agreement highly specific to this particular licensee

§19.2 Compulsory Licensing

- Overview: In certain circumstances, the government may compel an unwilling patentee to grant licenses to prospective licensees in exchange for "reasonable and fair

compensation" mandated by the government (28 USC §1498(a)) – this arrangement is rarely invoked, but provisions do exist in the Clean Air Act, the Atomic Energy Act, and the Plant Variety Protection Act – foreign cts utilize this concept with more frequency than U.S. cts, but are restricted by the TRIPS Agreement to very limited circumstances

§19.3 Licensee Estoppel

- *Lear v. Adkins* (1969): π, Adkins, invented a high-precision gyroscope and licensed it to Δ, Lear, his employer, which began using it in its products – π also sought a patent for the apparatus, but Δ consistently argued to the USPTO that the invention lacked novelty – in a later suit over the license contract and π's demand for royalties, the California Supreme Ct invoked the doctrine of licensee estoppel ("one of the oldest doctrines in the field of patent law establishes that so long as a licensee is operating under a license agreement he is estopped to deny the validity of his licensor's patent") and prohibited Δ from contesting the validity of π's patent – Supreme Ct reversed and allowed Δ's defense of patent invalidity: the doctrine of "licensee estoppel" is commonly cited as a long-standing defense, but a detailed review of prior case law (e.g., *Automatic Radio Manufacturing Co. v. Hazeltine Research, Inc.* (1950)) indicates that its application was infrequent and inconsistent – the doctrine arises from a conflict between the patent law principle that the public interest is best served by allowing anyone to contest the validity of a patent and the contract principle that one should not be able to escape contractual terms that he later finds unfavorable – however, in the case of patent licensing, the patentee may have recognized the unpatentability of the idea at the time of licensing, and may have taken a license solely to prevent an infringement claim – it is noteworthy that the validity of a patent is not a subjective determination of the licensee (as "the benefit of the bargain"), but rather is a legal conclusion of the USPTO; moreover, that decision is reached in a secret, *ex parte* hearing in which the licensee cannot participate – a licensee is often the only party with sufficient economic interest to challenge an invalid patent, and the public interest operates to encourage this challenge – thus, the concept of licensee estoppel is expressly deprecated in the general case – here, the equities are somewhat shifted by the fact that Δ licensed π's invention over four years prior to the patent issuance, and had special access to π's records and position – π asserts that Δ should be compelled to pay royalties throughout the pre- and post-issue periods, or at least until (and unless) the patent is held valid – this argument is unappetizing: it would allow patentees to bind a number of licensees early in the course of patent prosecution, and then obligate them to fulfill the license terms (and prohibit them from contesting the patent) even if the eventual patent is weak or narrow – also, obligating a licensee to continue paying royalties throughout the validity contest would double its economic burden, thereby discouraging validity contests, and also would encourage the patentee to delay final verdict as long as possible – the better rule, here adopted, is that a licensee who successfully proves the invalidity of a licensed patent can avoid paying any royalties for the period after the issuance of the patent – however, the pre-issuance period is a more difficult question, partly because the licensee has received the benefit of an early disclosure and permitted use; the Court declines to rule on this issue, and remands for further proceedings
- Assignor estoppel: This related doctrine estops a patentee who has assigned his interests to another party from later asserting that the patent is invalid – this is an equitable principle, stemming from the concept that one should not be able to benefit from his own

wrongdoing (in obtaining a patent for an unpatentable technology); it has also been analogized to real property concepts like estoppel by deed, and contracts concepts like an implied warranty that the consideration given in a transaction is not worthless – this principle was discussed at length, and eventually affirmed, in *Diamond Scientific Co. v. Ambico, Inc.* (1988)

- "No-contest" clauses: Even if the parties to a patent license expressly agree that the licensee may not contest the validity of the patent, *Lear v. Adkins* renders this license term unenforceable – however, an open question remains as to whether the request for such a clause constitutes patent misuse (probably not)
- Payment of royalties for contested patent: *Lear v. Adkins* centrally dealt with the royalty obligations of a licensee who proves the invalidity of the licensed patent – this left two open questions: (1) the pre-issuance period: *Aronson v. Quick Point Pencil Co.* (1979) held that if the patent actually never issues, the licensee may still be obligated to pay (indefinitely?) if he was foolish enough to execute a license with no accommodations for this eventuality – (2) the period between patent issuance and the charge of invalidity: in *Studiengellschaft Kohle, m.b.h. v. Shell Oil Co.* (1997) the CAFC permitted a patentee to demand royalties from the period between issuance of the patent and the licensee's first charge of invalidity; the defendant had attempted to escape this obligation for the whole period following issuance – the CAFC noted that permitting such escape would encourage licensees to delay their challenges as long as possible, enjoying the lack of competition under the patent, and then also escape its obligations under the contract by proving the patent invalid; thus, this would delay the patent challenge and frustrate the public interest

§19.4 Misuse and Patent-Antitrust

- Overview: Patents constitute a notable exception to antitrust law, but must still be regulated to prevent patentees to extend unfairly into trusts – the first patent abuse cases involved a tying arrangement, whereby a patentee sold a product under a license that the purchaser must purchase all items used with the patented device from the patentee – an early tolerance for this arrangement (*Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.* (1896)) was reversed in the wake of the Clayton Antitrust Act (*Motion Picture Patents Co. v. Universal Filkm Mfg. Co.* (1917)), and was followed by many contributory infringement suits brought against manufacturers of unpatented materials who intentionally sold their goods to licensees for use in patented products, which the Supreme Ct routinely dismissed as an attempt to extend a patent to unpatentable goods (*Mercoid Corp. v. Mid-Continent Investment Co.* (1944))
- *Morton Salt Co. v. G.S. Suppiger Co.* (1942): π developed and patented a canning machine, and also sold salt pellets for use with the machine – it conditioned its sale of the machine on the purchaser's obligation to buy salt tablets only from π – Δ, competitor, marketed an obviously infringing machine (and also marketed salt pellets adapted for use in π's machine) – π sued Δ over its manufacture and sale of an infringing machine; Δ contended that π's license obligations constituted patent misuse – trial ct found for Δ and refused to enforce the patent; appellate ct reversed – Supreme Ct affirmed the trial ct's refusal to enforce the patent: π's request for enforcement of its patent against an infringer is a case at equity – Δ's sale of unpatented salt pellets is of no relevance; however, π's sales obligations are a considerable burden on the public interest – a court of equity may properly refuse to enforce a patent until the patentee's inequitable conduct has been

purged – this concept run in parallel with the principles of refusing enforcement of a trademark that deceptively describes the product, or refusing enforcement of a license due to the licensee's use of an unpatented article with the patented machine: the courts will not grant relief under rights that the requesting party has misused

- Results of *Morton Salt*: This case prompted many accused infringers to raise defenses of inequitable conduct, and patent litigation frequently resembled antitrust litigation – courts proved surprisingly receptive to such concepts, refusing enforcement of patents where the patentee had collected royalties on related unpatented goods, included a grant-back clause in the license, or licensed several patents to the licensee under separate agreements – this trend ended when Congress limited the patent misuse doctrine via statute, in part through the Patent Act of 1952
- *Dawson Chemical Co. v. Rohm and Haas Co.* (1980): π, Rohm and Haas, obtained a patent on the process of applying propanil as an industrial herbicide – this patent had been granted after the invalidation of a previous patent to Monsanto claiming propanil as a compound – Δ, Dawson Chemical, manufactured and sold propanil with the knowledge that its customers were using it to infringe π's patent, and even instructed its customers on proper use – π sued Δ as a contributory infringer – upon being served with the suit, Δ requested a license from π, which π refused; Δ then asserted that π's tactic of granting licenses only to purchasers of its material constituted patent misuse – trial ct found for Δ, refused to enforce π's patent, and granted summary judgment; appellate ct reversed – Supreme Ct affirmed π's proper use of the patent and affirmed reversal of summary judgment: Δ argues that π has tied its licensing of the herbicidal use of propanil to its sales of the unpatented propanil compound in violation of 35 USC §271(d); π contends that §271(d) expressly permits this exercise of the patent – this dispute warrants an examination of the doctrine of contributory infringement, which first arose in the 1870's (*Wallace v. Holmes* (1871): "palpable" patent infringement found in the sale of a component of a patented combination, where the seller knew that purchasers were using the component to infringe the combination patent), reached a certain height (*Henry v. A.B. Dick Co.* (1912): suppliers of routine printing goods, including paper and ink, were found to be contributorily infringing a patent for a printing device that the patentee sold only under "tying" license terms) – this trend was sharply reversed and limited (*Motion Picture Patents Co. v. Universal Film Mfg. Co.* (1917): no contributory infringement found for the use of non-licensed movies with a patented projector in violation of the accompanying licensing terms; here the Supreme Ct expressly overruled *Henry v. A.B. Dick Co.*; *Carbice Corp. v. American Patents Corp.* (1931): "relief is denied because π is attempting, without sanction of law, to employ the patent to secure a limited monopoly of unpatented materials used in applying the invention… this limitation is not dependent upon the peculiar function nor character of the unpatented material or on the way in which it is used"), and reached a low watermark (*Mercoid Corp v. Mid-Continent Investment Co.* (1944): no contributory infringement for sale of unpatented goods, even if they had no imaginable utility except in a specific patented invention) – these cases demonstrate the conflict between the doctrines of patent misuse and contributory infringement; accordingly, application of both concepts has created much inconsistent precedent: some cts simply ignored *Mercoid*, while others held that the filing of a contributory infringement suit against a manufacturer of unpatented materials was *per se* patent misuse – to remedy this situation, Congress passed 35 USC §271, which clarifies

and delineates the doctrines: a patentee is permitted to profit from actions that would constitute contributory infringement if committed by an unauthorized party, to license such acts, and to sue for enforcement (these actions do not qualify as patent misuse) – the patentee may also secure and enforce rights to unpatented "non-staple" articles; this describes Δ's conduct and permits π to maintain this contributory infringement claim – both π's sale of propanil and π's licensing of the use of propanil are legal actions, and Δ has failed to demonstrate why the "tying" of these two actions is not permitted by §271 – the legislative history indicates that one of Congress's purposes in drafting §271 was to protect "new use" patent owners against contributory infringers (exactly the situation at bar) in order to promote investment in this expensive and speculative area of technology – Stevens dissent: π's actions are a textbook example of patent misuse, as it extends the patent monopoly to cover unpatented "nonstaple" goods, and might allow extension of "tying" strategies into other areas of commerce (landlord/tenant issues)

- Modifications to *Dawson Chemical Co.*: The definition of "nonstaple" is not clear (how many other uses must exist to make something "non-staple"?) – a concept related to "tie-ins" is "tie-outs": licenses that obligate the licensee not to use the technology or products of a competitor – over the years, additional clarifications have been added to §271 to permit or prohibit uses of patents
- *U.S. v. Studiengesellschaft Kohle* (1981): Δ invented a novel method of constructing organometallic compounds in commercial quantities, requiring only 5% of the cost of prior art methods – Δ licensed the right to use the process, and the exclusive right to sell its products, to codefendant Texas Alkyls, but reserved the right to grant other licenses solely for manufacture and internal use (i.e., manufactured for the party's own use), and granted a few such licenses – one such licensee sued for a declaratory judgment of patent misuse, but the trial ct found this licensing strategy valid; Δ and Texas Alkyls nevertheless executed a special license permitting this licensee to sell its compounds with a 2% royalty – later, the U.S. Antitrust Division filed suit against Δs for an antitrust violation, and the trial ct found that Δs' licensing scheme withheld the nonexclusive licensees' goods from the marketplace, thereby reducing competition, raising prices, and restricting research for new uses of organometallic compounds, thereby operating as an illegal restraint of trade under the Sherman Antitrust Act – appellate ct reversed and validated Δs' licensing scheme: Δs argue that their licensing scheme was within the restrictive rights of the patent monopoly grant, and could have been even more strict by exclusively licensing everything to Texas Alkyls – the government argues that the licenses extended a process patent to create a monopoly on its chemical product; trial ct incorporated this reasoning in a two-step test, first holding that the imposed restriction was outside the bounds of the patent grant, and then holding that the excessive restriction operated as a restraint of trade – this reasoning gives too little consideration to the nature of the patent as an inherent restraint of trade, and the Supreme Ct has ruled that licensing schemes designed to maintain a patent monopoly are not *per se* illegal (*E. Bement & Sons v. National Harrow Co.* (1902)) – a better approach is to consider whether the restriction retrains trade in markets other than that protected by the patent – this case must be viewed in light of *Continental TV, Inc. v. GTE Sylvania, Inc.* (1977): according to prior antitrust theory, if manufacturers sold TVs to dealers with geographic restrictions as to where the dealers could resell the TVs, the restrictions were inappropriate for an outright sale of the goods, but acceptable where the manufacturer retained title to the TVs and

merely sold licenses; the Supreme Ct struck down this rule as "overly formalistic" and instructed cts to focus on the real economic effects – the government's argument is similarly formalistic, and does not adequately reflect the economic reality of Δs' licensing arrangement – thus, arrangements should be acceptable where they are "reasonably related to effectuate the patent rights," and held illegal only where they have "no purpose except restraining trade, and unequivocally anticompetitive effects in the vast majority of cases" – here, the market targeted by this patent is organometallics, to which Δ's patent is clearly related – all four kinds of harm cited by trial ct are within the scope of the patent, and constitute the legitimate rewards of the patent monopoly – Δs had no right to interfere with organometallics produced by any other process; and if Δ had obligated its licensees against using any other process or buying organometallics produced by any other process, this would have constituted a restraint of trade – the government's *per se* rule is too unrealistic; a process patentee should hold greater rights to the products of that process than to unrelated compounds, or to the products when created by other processes – the only potential harm in allowing Δs' arrangement is that it reduces the incentives of its licensees to find alternative methods, and might thereby slow the rate of innovation – this concern has been more heavily noted in cases of regional restrictions, which divides the entire market into "cartels" where no one has any incentive to innovate; this would be a *de facto* monopoly – here, though, Δs' restriction on sales encourages the licensees to find an alternative method that allows them to sell organometallics

- *Mallinckrodt Inc v. Medipart Inc.* (1992): π invented a nebulizer for diagnostic and therapeutic medical use – π manufactured these nebulizers with a "single use only" label, and sold them to many hospitals with instructions for proper disposal after a single use – instead, the hospitals routinely sent used nebulizers to Δ, which "reconditioned" them and returned them for reuse – π sued Δ for direct and contributory infringement, characterizing the "single use only" designation as a license obligation undertaken by the purchasing hospitals that Δ helped them to circumvent – trial ct accepted Δ's broad argument that a patentee can place *no* restrictions for use on the sale of an item – ct granted summary judgment of noninfringmerent to Δ; ct also found, in the alternative, that Δ's business constituted lawful repair, not unlawful reconstruction; and ct enjoined π from issuing a follow-up notice to all hospitals informing them that the "single use only" designation was both a safety measure and a contractual obligation under π's patents – CAFC reversed summary judgment for Δ and remanded for trial: case law indicates that not every license restriction is permissible, but also that not every license restriction must is unenforceable; contract terms must be respected unless they violate law or public policy (*E. Bement & Sons v. National Harrow Co.* (1902)) – trial ct implicitly relied on the public policy of patent misuse, deriving from the principle that patentees should not be able to extend anticompetitive effects beyond the rights inherent in the patent – in general, a licensing arrangement is valid if reasonably related of the subject matter within the scope of the patent – trial ct also cited the doctrine of "exhaustion," holding that a patentee cannot restrict the uses of goods sold overseas; however, this doctrine only applies to unrestricted sales, and the cases discussing the exhaustion principle suggest neither that conditional sales are improper nor that they can be legally converted to unconditional sales – trial ct also misconstrued the Supreme Ct decision in *General Talking Pictures Corp. v. Western Electric Co.* (1938) as holding that a patentee is

prohibited form imposing restraints on the sale of a good, but a manufacturing licensee is permitted to do so; this reasoning demonstrates the "formalistic line drawing" criticized by the Supreme Ct in *Continental TV, Inc. v. GTE Sylvania, Inc.* (1977) – rather, *General Talking Pictures* hinged on whether the purchaser had notice of the restriction, which was more likely if purchased from the patentee than from a manufacturer several steps removed – here, the device was sold by π, the patentee, and was marked with notice of its restricted use, thereby satisfying the notice requirement

- Application of *Mallinckrodt*: The CAFC had a chance to apply the *Mallinckrodt* holding in *B. Braun Medical Inc. v. Abbott Laboratories* (1997): π sold some patented valves to Δ with the limitation that the valves could only be used in certain applications; Δ contracted with another vendor for substitute valves to be used in other applications, and π sued for infringement – jury found patent misuse, relying on a jury instruction that a patent holder cannot restrict the resale of a patented product – CAFC reiterated its rationale from *Mallinckrodt* that patentees may make conditional sales of goods, that such conditions are to be enforced unless they violate antitrust law or public policy, e.g., by "impermissibly broadening the 'physical or temporal scope' of the patent grant with anticompetitive effects" – accordingly, CAFC held jury instruction invalid
- "Exhaustion" doctrine: This concept, a major topic of international patent law, holds that a sale of goods abroad exhausts all rights under the domestic patent – some earlier decisions (*Keeler v. Standard Folding Bed Co.* (1895)) recognized a domestic exhaustion doctrine: "one who buys patented articles of manufacture from one authorized to sell them becomes possessed of an absolute property in such articles, unrestricted in time or place," but approved restrictions created by contract rights – *Mallinckrodt* characterized this decision as merely recognizing the difference between an unconditional sale and a conditional sale, denied that U.S. patent law implements the exhaustion doctrine, and condoned the efforts of patentees patentees to place reasonable restrictions on domestic sales of goods
- *USM Corp. v. SPS Technologies, Inc.* (1982): π patented a self-locking industrial fastener, and sued Δ, a competitor, for infringement – the parties settled the case with an acknowledgement that the patent was valid and had been infringed, and π granted Δ a license to continue using it under a differential royalty schedule (25% of net revenue from all sublicenses, but 75% of net revenue to sublicenses issued to π's direct licensees) – three years later, Δ filed suit, characterizing π's royalty schedule as anticompetitive and patent misuse – CAFC validated π's royalty scheme: the doctrine of patent misuse arose long before federal antitrust law, and some overlap exists: cases have found patent misuse in light of certain distinct antitrust activities (dictated resale prices of patent articles; patent tie-in arrangements; obligated payment of post-expiration royalties; royalty payments measured by the profits made on goods incorporating the patented component; tied-in prohibitions against developing products that will compete with the licensed patent) – these activities are all labeled as attempts to "extend" the scope of the patent; however, the theory of contract law dictates that the patentee pays for these obligations by charging a lower price for the patent license; it is all part of the "benefit of the bargain" – thus, the doctrine of patent misuse can be applied in two instances: to those activities previously declared to be patent misuse (restricting the use of non-patented staple articles), and to activities that violate antitrust laws – thus, if the patentee has not committed any of the well-defined patent misuse activities, its conduct should be

evaluated under standard antitrust law – π's activity here constitutes discriminatory pricing, which is an acceptable business practice in antitrust law; a few cases regard this as an antitrust violation, but only where the violator can exert excessive control over the market, and is doing so through its pricing discrimination (*La Peyre v. FTC* (1966)) – while π's tactic may shift the competitive positions between π and Δ in the relevant market, this is an intended and approved use of the patent – moreover, the differential pricing is apparently intended to prevent π's former licensees from obtaining better license terms by sublicensing from Δ, thereby reducing π's royalties from prior licenses and shifting some royalties to Δ- this is a valid goal for a licensing scheme, and an attempt to address the "free rider" problem of antitrust law

Chapter Twenty: Other Forms of Patent Protection

§20.1 Design Patents

- *Avia Group International, Inc. v. L.A. Gear California, Inc.* (1988): π owned design patents on two styles of athletic shoes – π sued Δ for infringement; trial ct granted summary partial summary judgment, and finding Δ's infringement to be willful and exceptional, awarded attorney's fees – Δ appealed, arguing that π's design was obvious in light of the prior art, and also functional – CAFC affirmed summary judgment for π: 35 USC §171 allows patents for "new, original and ornamental" designs that are "nonobvious" as §103 – Δ is correct that design patents will not cover the functional aspects of a design, nor a design that is dictated by the function – certainly the shoes to which π's design are functional, but this is not the proper test; all ornamental designs are applied to inherently useful articles – trial ct's finding that many features of the design are purely ornamental is reasonable; the components combine to form an aesthetic, not functional, feature – even the rubber sole, while requiring ridges for traction, does not benefit from the particular design that Δ has copied, but the swirl pattern is important to the design – the standard of obviousness is determined in the view of "the designer of ordinary capability who designs articles of the type presented in the application" (*In re Nalbandian*), and the determination is based on the overall appearance, not specific components (*In re Cho* (1987)) – there is no evidence here suggesting that π's overall appearance resembled any prior art design, nor customary and traditional designs in this field – this conclusion is supported by π's commercial success, which appears reasonably related to its design, and by Δ's choice to copy π's design (copying by competitors is evidence of nonobviousness (*Pensa, Inc.*)) – the test of willful infringement: "if, in the eye of an ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same, if the resemblance is such as to deceive such an observer, inducing him to purchase one supposing it to be the other" (*Gorham Co. v. White* (1871)); also, "the accused device must appropriate the novelty in the patented device which distinguishes it from the prior art" (*Shelcore, Inc. v. Durham Indus., Inc.* (1984)) – trial ct found them not only substantially the same, but "virtually identical," noting the similarity or identity of several important design elements
- Design patents: These patents are widely panned, as the particulars of designs significantly differ from those of technologies; but the field has garnered little congressional attention for clarification – design patents are quick and easy to obtain and enforce, but are frequently invalidated during litigation – one important limitation is that the design must be embedded in an article of manufacture, which raises questions about

computer-related designs (icons, themes, etc.) – *In re Nalbandian* (1981) is the hallmark case for obviousness in design patents (see above) – Judge Rich concurred in *Nalbandian* with a critical review of the field and a plain request for more legislative guidance, which has been slow in coming – the most common suggestion is to dispense with design patents in favor of copyright-like registration; a bill pursuing this change was presented, but failed to pass

§20.2 Plant Patents

- *Imazio Nursery, Inc. v. Dania Greenhouses* (1995): π discovered a wild type of early-blooming heather that it named Erica Sunset, and obtained a plant patent for it containing one claim (" new variety of Heather persoluta, substantially as herein shown and described, particularly characterized by its profuse production of blooms over the entire length of the stem beginning in early December") – π sued Δ for infringement, based on its "Holiday Heather" plant species; trial ct granted π's summary judgment for infringement, but denied as to patent validity and as to π's request for an injunction – both parties appealed – CAFC reversed grant of summary judgment for π on infringement: The Plant Patent Act begin as an 1892 bill intended to promote agricultural experimentation, and was eventually passed in 1930 – this act overcame two hurdles for allowing patents on plants: the view of plants as strictly products of nature (even when genetically engineered by man), and the incapability of being described in the same detail and style as inventions – patents submitted under this act must conform with the typical requirements used in utility patentability analysis (35 USC §161) – the specification must be sufficiently descriptive (or as descriptive as possible) in order to distinguish it from other known species, must assert that the plant can be asexually reproduced, and must include only a single claim to the plant as described – in considering infringement, trial ct asserted the legal standard set forth in *Pan-American Plant Co. v.* Matsui (1977) that plant patents "bar the asexual reproduction and sale of any plant which Is the same variety as the patented plant"; this is the correct rule, but the meaning of the term "variety" is in dispute – π contends that this means that all plants within a single taxon are included in the scope of protection, whereas Δ argues that "variety" implies that the plant must be different from what came before, and thus the patent covers only a single plant – the legislative history suggests that "variety" means distinct and newly cultivated mutants, hybrids, sports, or seedlings – more importantly, protection is strictly limited to plants that have been asexually reproduced; can be done by "grafting, budding, cuttings, layering, division, and the like, but not by seeds," thereby implying that "variety" means only a single species that has been so reproduced – meanwhile, sexually reproduced plants can be protected by the Plant Variety Protection Act of 1970, which grants "patent-like" protection; this act defines "variety" as "a plant grouping within a single botanical taxon" – π argues that the use of the same term in two very similar statutes implies the same meaning – however, "variety" must have a different meaning for asexually reproducing plants, which can maintain one genetic background, and sexually reproducing plants, which create a small range of genetic differences in offspring; thus, the meaning of the term cannot be carried over – thus, "variety" in the Plant Protection Act means a single, asexually reproducing plant – based on the foregoing, the scope of patent protection is limited to the single plant described in the patent and its asexually-produced offspring – thus, trial ct erred in rejecting Δ's argument of independent creation of its brand of heather, which is a valid defense

- Plant patents: Only 10,000 plant patents have been granted since 1930, and the USPTO examining group is kept very small – the protection of such plants under the title of "patent" creates some theoretical issues: the patent instrument itself cannot be enabling (one needs access to the original plant to recreate it), and the patent can issue even if the original plant will never be reproduced or has been destroyed – one solution: for plants that reproduce sexually as well as asexually, the USPTO recommends (but does not require) that the applicant provide some seeds to a public depository, and then disclose the depository number in the patent
- Plant Variety Protection Act of 1970: This act grants "plant protection certificates" that operate to provide "patent-like" protection for new varieties of sexually reproducing plants, but sets up some other §102-like conditions (e.g., the plant must not have been commercially sold prior to filing) – the plant must also be distinct (distinguishable from other varieties), uniform (its traits must be describable and predictable), and stable (the characteristics must remain through several generations of the plant) – a certificate lasts for 18 years, and covers the selling, reproducing, importing, exporting, or use of the described plant and anything within its taxon
- International protection of plants: International protection of plants is expanding, due to the International Union for the Protection of New Varieties of Plants (UPOV), covering both sexually- and asexually-reproducing plants – the form of protection offered by this organization is interesting to compare with patents: allows the addition of new matter during prosecution; creates a standing compulsory licensing regime; ad allows full *inter partes* post-grant opposition