Patents Mini-Outline

1. Overarching policy concern is the tradeoff between rewarding an individual for providing social benefit in the form of increased knowledge – what limits should be placed on the “embarrassment of monopoly?”
2. Courts tend to be hesitant to grant broad patent rights in “pioneer patent” cases, since it’s difficult to know what new uses may be preempted by a broadly-interpreted patent
3. There are multiple forms of IP protection – to what extent is the patent system (as opposed to other forms) a good vehicle to incentivize innovation?

Forms of IP Protection

* 1. Trade secrets are indefinite, but subject to spoliation if revealed
		1. Trade secrets may be preferable to patents if:
			1. Secret is not easily reverse-engineered
			2. Ability to pay for prosecution is a potential issue
			3. The product has a short life-cycle (patent prosecution can be time-consuming)
			4. There is no concern about employees disclosing TS material after leaving job
	2. Trademarks apply to images, logos, words, etc. used to differentiate products in the marketplace
	3. Copyright is protections for original expressions of ideas – artists, authors, musicians, etc.
	4. The patent system cannot respond in some situations
		1. Effectiveness can also be limited by quick industry turnover (fashion); branding power (food); barriers to entry, lack of concern for financial gain, or when no market for innovation solution exists
	5. A patent is a negative right to exclude others – not an affirmative right to practice

## Patentable Subject Matter (PSM)

### §101 – “Whoever invents or discovers any new and useful process, machine, manufacture or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor . . . .”

1. Three judicially-made exceptions – **laws of nature**, **physical phenomena** and **abstract ideas** – are folded into §101’s command that PSM be “new and useful” (*Bilski* – risk hedging patent)
	1. Critically important doctrine – overbroad interpretation of PSM exclusion can destroy patent law, since to some degree, all technical innovations rest on one of the three exceptions
	2. Both *Charkrabarty* and *Bilski* provided SCOTUS with an opportunity to create *per se* rules on PSM – they decline to do so, opting instead for open-ended standards
2. Courts need not wait for Congress to interpret statutes in new contexts - to do so would undermine patent law, which *encourages* invention, possibly in entirely new fields. However, courts should not make policy judgments on the wisdom of new scientific endeavors (*Charkrabarty* – oil eating bacteria)
	1. *J.E.M.* reaffirmed *Chakrabarty* – §101 is a broad provision that can extend to subject matter that Congress itself may have once not thought patentable
	2. Courts are not bound by, nor required to give deference to, PTO determinations of PSM (*Myriad*)

*Mayo* Framework

1. *Mayo* introduces framework for determining if an invention is PSM (applied in *Ariosa* – fetal DNA testing)
	1. Are claims directed to a patent ineligible concept?
	2. If yes, determine whether additional elements “transform the nature of the claim” to PSM
		1. Can be described as a search for an “inventive concept” – ensures that the patent is more than a patent upon the ineligible concept itself
	3. “Post-solution activity” consisting solely of conventional, well-known steps (such as the use of routine detection techniques to analyze cffNDA), cannot create PSM (*Ariosa*)
		1. This helps courts see through attempts to claim new, natural phenomena by using old, familiar processes
		2. Nor can limiting the use of an idea to a particular technological environment save an abstract idea from unpatentability (*Flook*)
	4. “A product must be more than new and useful to be patented; it must also satisfy the requirements of invention or discovery.” (*Funk Bros.* – legume bacteria bags)
		1. Patent will be denied if you haven’t “done enough” to merit a 20-year monopoly
2. § 101 can take on elements of modern nonobviousness doctrine (*Graham*, *Funk Bros*.)

#### Laws of Nature

1. *Morse’s* telegraph patent is invalidated because his claims (use of electromagnetism for making or printing characters) are broader than the invention disclosed in the patent application
	1. Dissent tries to argue that natural laws are not patentable, *unless* the discovery also articulates the utility of the newly discovered principle
	2. All claims must be supported by the specifications
		1. Bell does not repeat *Morse*’s mistake by limiting even his broadest claims to his specific, non-obvious contributions (continuous current)
2. Mere “ideas” or lists of “mental steps” are not patentable (*Gottschalk v. Benson* – binary conversion)
	1. *Benson* also introduces the idea of “algorithms” being generally unpatentable

Software Patents

* + 1. Is the issue that an algorithm is an abstract idea, or that the claims were overbroad, covering both known and unknown uses?
		2. “Mental steps” doctrine has fallen into disfavor due to the ease of claiming around it
		3. One of the first software patent cases that remain generally disfavored
		4. §100(b) defines PSM as a “new use of a known process” or machine – does this open the door for software patents?
			1. Provides for blocking patents between inventors with different uses for the same product
	1. However, the use of a new process that *applies* a well-known mathematical formula is patentable (*Diamond* – rubber vulcanizing computer program)
		1. Represents a step back from the sweeping language of *Benson*
		2. Could be analyzed as a legal realist decision – because consequences are likely to be limited, a patent may issue
		3. Dissent argues for a *per se* ban on computer programs to promote certainty
	2. *Alice* guts the heart of software patents, especially with regard to the §101 inquiry (settlement risk software)
		1. Refuses to follow “new machine” doctrine of *Bernhart* and *Iwahashi* where inclusion of new software made patentable, physical changes to hardware
		2. Inclusion of generic hardware “limitations” on the claimed process insufficient to change the nature of the claim from an abstract idea
		3. However, SCOTUS still refuses to apply bright-line rule to encourage innovation and limit collateral damage for VCs

#### Physical/Natural Phenomena

1. Living/non-living is not the correct dichotomy for determining PSM; instead, the correct question is whether the invention is man-made or not (*Chakrabarty* – oil-eating bacteria)
	1. Dissent argues that the 1930 Plant Patent Act and explicit exclusion of bacteria from similar 1970 Act demonstrates Congressional desire to exclude bacteria from PSM
		1. Majority emphasizes “anything under the sun that is made by man” to justify broad PSM – dissent focuses on policy of “Nation’s deep-seated antipathy to monopolies”
	2. Compare with *Funk Bros.* (new combination of legume bacteria) – distinction is that the *Chakrabarty* bacteria has new characteristics from those found in nature, but *Funk Bros.* did not
2. A purified substance originally found in a living organism is PSM, if commercially or therapeutically new (*Parke-Davis* – purified adrenaline)
	1. Compare with *Myriad* (isolated gene naturally occurring, therefore not PSM, but cDNA non-naturally occurring, so PSM)*–* does this overrule *Parke-Davis*, or is there an inventive step in *Parke-Davis* that was missing in *Myriad*? – Okediji says the latter
	2. Nor are genetic clones PSM, because they do not meet *Chakrabarty*’s test of a new material with “markedly different characteristics from any found in nature.” (*In re Roslin Institute*)
		1. Case law has difficulty dealing with the moral complexity of patents associated with higher life-forms (*Roslin, Myriad*)

#### Abstract Ideas

1. Abstract ideas do not have to be principles that exist independent of any human action (hedging in *Bilski*, mitigating settlement risk in *Alice*)
	1. Primary concern seems to be preemption of scientific “building blocks” of knowledge
2. Business methods are PSM, as long as they are not merely abstract ideas (*Bilski* – financial hedge method)
	1. How do business method patents achieve goal of incentivizing innovation in exchange for public knowledge? Aren’t effective business methods rewarded in marketplace? (*Amazon One-Click*)
	2. Dissent thinks this leads to stunting of business innovation
		1. Also accuses majority of misinterpreting Congressional motives for creating defense against infringement of business method patents
	3. Majority rejects “machine-or-transformation” as exclusive PSM test, although may be a “useful and important clue”
	4. Majority notes that “method” is one of the terms used to define “process” in §101, so business method patents must be included
		1. Dissent notes that the definition of “process” also includes the term “process”
			1. Also argues that §101 should not be acting as a threshold inquiry

## Utility

1. The utility requirement derives from §101’s demand that an invention be “useful,” and from §112 which requires an applicant to disclose “the manner and process of making and using [the invention].”

#### Operability

1. The PTO’s usual process of not requiring actual reduction to practice is waived for “fantastic” inventions such as perpetual motion machines (*Newman v. Quigg*)
	1. This hopefully reduces fraud and stops gullible investors from falling for a “patented” invention
2. An inventor making a controversial assertion of utility must provide proof at time of application – any later may void the patent (*Rasmusson v. SmithKline* – prostate cancer treatment not expected to work, so utility required on filing date – otherwise, lucky guesses could be patented)
	1. However, under *Rayethon*, infringement is proof of a device’s utility (unless infringer challenges existence of utility at filing date)
3. Doctrine should not be used to reject the impractical – only the inoperative (*Ex parte Cheeseborough* – steam pipes to prevent canals from freezing)

#### Beneficial Utility

1. Utility requirement does not require “improvement” over existing technology – an invention not injurious to the morals of society is all that is required (*Lowell v. Lewis*)
	1. This “moral utility” doctrine has not been widely used recently in America and had no statutory basis – still prevalent in European jurisdictions
2. The fact that an invention may be seen as deceptive (or be made to look like another product) is not a reason to deny the patent (*Juicy Whip* – pre-mix dispenser looks like post-mix dispenser)
3. Difficult moral issues may arise in the cases of patenting animals, human cloning
	1. Under AIA, no patent may issue on claims “directed to or encompassing a human organism”

#### Specific/Practical Utility

1. Practical utility addresses a fundamental purpose of patents – a monopoly for *useful* consideration
	1. Requires a judgment about whether an invention merits a patent or not
2. Concerns about preemption resurfaced in *Brenner* – unless specific utility for the claimed chemical compound could be shown, no patent would issue
	1. A patent that issues on a compound of unknown utility presents no incentives for others to determine its usefulness, possibly blocking an entire area of scientific development – a patent is not a hunting license. It is compensation for a search’s successful conclusion

Biotech Utility

* + 1. Could lead to adverse consequences – discoverer is incentivized to keep the discovery secret while he searches for a use
	1. Irrelevant that a closely-related compound had an appreciable utility
	2. Widely criticized, since it was seen as holding that *no* utility had been shown
1. *Brenner*’s utility rule was relaxed in *In re Brana* – distinguished between requirements to obtain a patent and requirements to obtain FDA approval
	1. Conflicts with *Brennan*’s assertion that related compounds are irrelevant, since *Brana* allows comparisons to prove both the specific disease targeted by new material and that a PHOSITA would believe an asserted utility
2. *Brenner* may have come back in vogue after *In re Fisher*, at least in biotechnology/gene patents
	1. Research tools (ESTs) that allow scientists to conduct further experiments do not meet the required utility thresholds
	2. Dissent argues that majority has made a value judgment about the level of contribution – if a microscope is patentable as a research tool, so is *Fisher*’s material
3. The Utility Examination Guidelines have further broken down utility to three subsets, slightly different from the traditional three listed above (*In re Fisher*)
	1. **Credible utility** – whether a PHOSITA would accept that the invention is currently available for its purported use
		1. Note the similarity between credible utility and enablement – PHOSITA’s judgment is critical to both
	2. **Specific utility** – whether the invention can provide a well-defined and particular public benefit
	3. **Substantial utility** – whether an invention has a non-trivial, presently available public benefit

## Disclosure & Enablement

### §112 – “The specification shall contain a written description of the invention, and the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art . . . to make and use the same . . . .”

1. §112 disclosure is the quid pro quo of the right to exclude – forces teaching of the inventive process
	1. Also limits the scope of the invention to that actually described in the patent application
		1. Reflects tension between allowing third parties to invent around a patent while protecting the initial inventor’s rights
2. Specifications need not point out precisely how to make every device that would fall within its claims – the concept or principle is adequate (*Gilette*)
3. The four §112 requirements are 1) enablement; 2) written disclosure; 3) claim definiteness; and 4) best mode
	1. Best mode is not a defense to infringement under the AIA, and should decrease in importance
		1. Proceeds under two-stage analysis:
			1. Did the inventor consider one mode better than the others at the time the application was submitted? (Subjective)
			2. Did the application provide an enabling disclosure of the best mode? (Objective)
		2. Inventor need only disclose the preferred means of practicing claimed elements necessary to operate the invention, and may list several possible modes of practicing without specifying which is the preferred method
	2. The test for claim definiteness is whether it is “reasonably certain to inform a PHOSITA of the invention’s scope” (*Nautilus* – heart rate monitor)

#### Enablement

1. Strong enablement doctrine (decreasing the scope of the patent) may discourage R&D, or encourage inventors to use trade secret law to protect the invention
	1. However, broad pioneer patents might decrease R&D in the second generation
2. If a description is so vague that an invention can’t be recreated without undue experimenting, the patent is void (*Incandescent Lamp* – patent for fibrous conductors held invalid because some fibers do not work)
	1. Factors that indicate experimentation is undue include (not limited to): Quantity of experimentation needed; Amount of guidance given; Presence of working examples; Nature of the invention; State of prior art at time of filing; Relative skill of those in the art; Predictability of the art, and; Breadth of claim (*In re Wands*)
	2. Art predictability is one of the most critical considerations in the undue experimentation test. A more predictable art usually requires less disclosure to enable a broad claim
3. A specification that does nothing more than state a hypothesis does not meet the enablement (or utility) requirement (*Janssen* – Alzheimer’s treatment)

#### Written Description

1. The disclosure must reasonably convey to a PHOSITA that the inventor had possession of the claimed subject matter as of the filing date (*Ariad* NF-kB genus claims)
2. This issue arises in two circumstances: 1) Inventors add claims after filing to add distinctions and claim elements not present in the original application, and 2) Overbroad claims
3. Claims may not be broader than the supporting disclosure (*Gentry* – reclining sofa)
	1. Stops inventors from claiming later what they didn’t think of at the time of application
		1. More recent cases have backed away from *Gentry*, limiting it to where a disclosure makes a narrow reading of a claim term an essential element of the invention
	2. Note the tension between concept that a patent does not cover every embodiment of the invention, and overbroad claim doctrine – you have to “do enough” to show possession
4. Claims can be overbroad if the timing of the application is incorrect (*University of California v. Eli Lilly* – rat insulin cDNA sequence did not justify written description for human insulin cDNA sequence)
	1. Description of one species (rat) does not necessarily permit a broad patent on entire genus, unless the genus is fully described and easily identifiable to a PHOSITA
	2. Can be referred to as the anti-gun jumping principle; researchers must wait until they can describe an entire genus to file a patent on that genus
5. §112 requires a written description of 1) the invention *and* 2) the manner and process of making and using the invention – separate requirements of written description and enablement (*Ariad*)
	1. This requirement aids the PTO in examining applications, courts in determining validity, and the public to understand the invention and improve on it while avoiding infringement
	2. That this requirement might hamper the ability of universities to obtain patents over basic research is not a problem – the law is not intended to provide patents in these circumstances

#### Novelty

1. Under the AIA, novelty is measured as of the date a patent for invention is first filed
	1. Prior art definitions are also slightly different: A person shall be entitled to a patent unless 1) the claimed invention was patented, described in a printed publication, or otherwise available to the public before the effective filing date of the claimed invention; or 2) the claimed invention was described in a patent issued [to another] . . . .”
		1. Disclosures made 1 year or less before the effective filing date are not prior art if 1) the disclosure was made by the inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor (CB p. 342; 495)
			1. First filer wins the patent, except where the second filer was first to “publicly disclose” the invention
2. Inherency doctrine holds that an invention is not new, despite no explicit reference in a previous application or in the public domain (*Seaborg* – Fermi reactor created element 95)
	1. Inherency doctrine does not apply, however, if the invention was undetectable or accidental (*Tilghman* – animal fat to glycerine in steam engine)

Inherency Doctrine

* + 1. Policy rationale is that an accidental anticipation gives nothing to the world, so is entitled to no consideration
	1. A limitation or the entire invention is inherent and in the public domain if it is the natural result flowing from the explicit disclosure of the prior art (*Schering* – claim ingested compound of Claritin)
		1. Establishes the practice of “evergreening” – i.e., manufacturer files a later patent on compound created when drug is ingested, foreclosing generic competition
		2. Anticipation does not require the actual creation or reduction to practice of the prior art – an enabling disclosure is all that is required
			1. Makes use of the anti-backsliding principle – once an invention is in the public domain, it should not be removed and given patent protection
1. Anticipation is not possible without a fully enabling disclosure in the prior art – however, §102 enablement (novelty) is different than §112 enablement (*Hafner*)
	1. This result occurs because §112 requires the specification to enable the invention’s use, but no such requirement exists in §102
	2. Might also be related to rule that inventors cannot obtain patents on old machines for having discovered new uses
	3. An invention in the public domain might not need *any* enablement on how to make the product (*Lockwood v. American Airlines* - public use of airline reservation system was sufficient to preclude Lockwood’s patent)
		1. Meets §102(a) requirement of “known or used by others” and §102(b) requirement of “in public use in this country” – therefore prior art
2. A prior art reference that discloses a species anticipates a later claim to a genus containing that species (*Titanium Metals* – Russian publication analyzing metallurgical properties of several alloys within applicant’s claims prior art that destroyed novelty, despite not disclosing a use for the alloys)
	1. However, identification of a new species within an old genus is similar to a new improvement on an old technology

#### §102(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

1. First major inquiry is directed to the knowledge and use of the invention in this country
	1. Prior knowledge under §102 must be public knowledge – knowledge reasonably accessible to the public (*Watkins* – tablecloth drawings of sled design did not count as prior art)
		1. Is this good statutory interpretation, given that Congress addressed “public use” in §102(b)?
		2. Public knowledge requirement ensures the quid pro quo for a 20-year monopoly is met
		3. Existence and relevancy of prior art is established by clear and convincing evidence
			1. Burden of proof stays with the challenger – patentee is presumptively correct
			2. Oral testimony must be corroborated to invalidate a patent (*Barbed Wire Patents*)
	2. Where an invention is openly used in the ordinary course of business, no affirmative act to bring it to the public’s attention is necessary to bring the invention into the public domain (*Rosaire* – oil prospecting method carried out in Texas wilderness sufficiently public use)
		1. If non-secret uses were not prior art, a patent would issue, enjoining original user from using the invention he had been using before the issuance of the patent
	3. Prior knowledge/use is not geographically limited under the AIA
2. Second major inquiry is directed to all patents and printed publications
	1. Public accessibility is the touchstone in determining whether a reference is a printed publication (*Klopfenstein* – presentation at academic conference with slides posted for 2 ½ days constitutes prior art)
		1. Factors aiding this inquiry include length of time the display was exhibited; expertise of the target audience; reasonable expectation that material would not be copied; ease with which material could have been copied
		2. A single copy of work in a library can count as prior art if properly indexed (*In re Hall*)
	2. Where prior art does not disclose a utility, an inventor is not required to disclose a utility either in overcoming a novelty challenge (*Moore* – Rule 131 affidavit proving earlier invention not required to identify utility because prior art publication did not)
		1. Subject to limitation that application must be filed within one year of public disclosure
		2. Symmetry with *Hafner* rule – *Hafner* harms inventors, but *Moore* can help

#### §102(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 application for patent in the United States

1. §102(b) and other statutory bars encourage quick patent filing by removing an invention from patentability if an inventor waits too long to file
	1. Advantages of early filing include increased reliability of public information; faster dissemination of new information; and early termination of patent rights
	2. Also prevents inventors from “double-dipping” – commercializing invention for a time, then applying for exclusive patent protection (*Pennock*, *Metallizing*)
2. §102(b) facially limits its application to public use or sale *in this country*
3. A public use under §102(b) does not necessarily mean “public” – a secret public use may suffice (*Egbert* – corset invention publicly used by one woman)

Public Use Bar

* 1. Dissent argues that this “public use” conferred no public benefit and the public never really had access to the invention, so it should not be a bar to patentability
	2. *Moleculon* might change this analysis – if an inventor maintains control over an invention’s use and distribution of information about it, no public use may be found
		1. An assignment or sale of rights *in* the invention is not the same as a sale *of* the invention under §102(b)
		2. However, demonstrating the invention at a party with 20-30 friends might trigger the public use bar (*Beachcombers v. WildeWood Creative Products*)

Public use Under §102(b)?

|  |  |  |
| --- | --- | --- |
| Actor | Non-Secret Use | Secret Use |
| Applicant | **YES** (*Egbert*) | **YES** (*Metallizing Engineering*) |
| Third Party | **YES** (*Rosaire*) | **NO** (*Gore*, *Gillman*) |

1. §102(b) bar for “on sale” applies after two conditions are met: 1) Invention is the subject of a commercial offer for sale; and 2) Invention is ready for patenting (*Pfaff v. Wells Electronics* – inventor’s acceptance of purchase order and supplying manufacturer with detailed sketches demonstrate invention was on sale)

On-Sale Bar

* 1. Invention may be “ready for patenting” through either an actual reduction to practice or an enabling disclosure
	2. Inventors may market and even distribute quote sheets without triggering the on-sale bar; a commercial offer of sale under standard contract law principles must be made
	3. *Abbott* extends the on-sale bar by holding that it applies even if the parties didn’t know they were dealing in a patentable invention
	4. For the inventor/applicant, the sale of a product made by a process (to be patented) triggers the bar (*Plumtree v. Datamize*)
		1. However, third party’s exploitation of a product made by a process (to be patented) does *not* trigger the bar (*Gore v. Garlock* – sale of tape made from tape-making machine by third party does not foreclose patent on machine)
1. EXPERIMENTAL USE EXCEPTION NOT ON FINAL EXAM
2. Misappropriation of a patentable invention that is then publicly used can bar the original inventor from asserting a patent rights (*Lorenz v. Colgate*)
	1. Remedy is simple – inventor should have patented the invention earlier

#### §102(c) – Inventor has abandoned the invention

1. Requires a deliberate surrender of rights – a delay in filing alone is insufficient for abandonment under §102(c) (but not §102(g))

#### §102(d) – The invention was first patented by the applicant in a foreign country more than twelve months before filing the application in the United States

1. Statutory bar that incentivizes inventors to file in the United States before, or at least very soon after, patent applications are filed in foreign countries

#### §102(e) – The invention was described in an application for patent by another filed in the United States before the invention by the applicant

1. Once an inventor does all he can to patent his invention (files an application), his patent can become prior art and limit what may be patented by subsequent inventors (*Milburn*)
	1. Applications may be prior art if they either result in a patent, or are published 18 months after application under §122(b)
	2. These references are frequently called “secret prior art,” because the art is unknowable until after the patent issues, but backdated to the date of filing
		1. Criticism of secret prior art centers on the unavailability of the art, and is more focused on application in the nonobviousness context
2. Information disclosed but not claimed in a patent application qualifies as prior art under §102(e), but not under §102(g)
	1. *HILMER* DOCTRINE NOT ON FINAL EXAM

#### §102(f) – Inventor did not invent the subject matter sought to be patented

1. NOT ON FINAL EXAM – AIA doctrine (CB 422)

#### §102(g) – Before the applicant’s invention, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it

1. The general rule is that the first to reduce to practice wins
	1. Exception if the last to reduce to practice was the first to conceive and was diligent from a time just prior to the first reducer’s conception through to the last reducer’s reduction to practice
		1. When an inventor cannot produce evidence on a date of conception, conception is collapsed into the reduction to practice date
			1. If two parties reduce to practice on the same day, earlier date of conception wins. If both parties conceived on the same day, neither gets a patent (*Lassman v. Brossi*)

Conception & Reduction to Practice

* + 1. Reduction to practice can be actual (physical embodiment of invention that works for its intended purpose) or constructive (filing a patent application)
			1. An inventor that remains unsure that his invention works for its intended purpose has not yet actually reduced it to practice (*Estee Lauder v. L’Oreal* – sunscreen efficiency testing meant inventors were not sure of success)
			2. Only the filing of a patent application can be a constructive reduction – a periodical article cannot, since this encourages quick filing
		2. Diligence includes reasonable excuses for inactivity
			1. Some accepted excuses for inactivity include poverty, illness, regular employment, and even scheduled vacations. Invalid excuses include attempts to commercialize and doubts about value or feasibility
		3. These policies encourage quick public disclosure but reward first inventors while simultaneously acknowledging the money and time necessary to complete an invention
	1. Conception may not be proven by the oral testimony of the putative inventor alone – corroboration must be provided (*Brown v. Barbacid* – inventor’s notebook held record of test that demonstrated actual reduction to practice)
	2. Both conception and reduction to practice must occur within this country (*Solvay v. Honeywell* – invention conceived in Russia, transmitted and made in U.S. precluded Honeywell from being an inventor for §102(g) purposes)
1. Inventors may not abandon, conceal, or suppress – there is a presumption of concealment if there is an over-long delay between reduction to practice and patent application (*Peeler* – Miller’s company did not file application until 4 years after invention, so later inventor awarded patent)
	1. Proof of specific intent to conceal is unnecessary when the time between actual reduction to practice and filing is unreasonable
		1. An inference of suppression may be overcome with evidence that the delay was to perfect the invention
	2. Later, resumed activity that antedates an opponent’s entry into the field may overcome the presumption of abandonment, and reestablish the initial inventor’s priority (*Paulik*)
2. Non-informing public use (secret use of an invention whose output is publicly available) is considered protected by trade secret law, and may be the proper subject of a patent (*Gillman* – pneumatic puffing machine’s output was sold, machine was kept secret)
	1. Does ruling that such non-informing public use constitutes abandonment go too far in favoring patents over trade secret law?
	2. Distinguished in *Dunlop*, where invention (synthetic golf ball covering) was publicly available
		1. Public use of an invention forecloses a finding of suppression or concealment for three reasons: 1) Public still gets benefit of invention; 2) Ability to reverse-engineer the invention is fairly assumable; and 3) Inventors are under no duty to apply for patents
3. An inventor need not appreciate the patentability of an invention to be an inventor within the meaning of the statute (*Dow v. Astro-Valcour* – new method of making foam was “invented” even though defendant did not attempt to patent the new method because they thought it was already patented)

## Non-Obviousness

#### §103 – A patent may not obtained . . . if the difference between the subject matter 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 PHOSITA

1. The nonobviousness doctrine has three primary justifications:
	1. Nonobvious technical advances should not need patent system incentives to move forward
	2. Granting patents to obvious advances might reduce incentives for “pioneers” or other original inventors by reducing their revenue streams related to the initial invention
	3. A trove of obvious patents might substantially increase the costs of researching and licensing patents to avoid infringement
	4. Nonobviousness, like all doctrines, is a policy lever – when can we stop inducing innovation?
		1. Young industries tend not to have strong nonobviousness blocks
2. Simply changing the material used in an invention is insufficient to justify a patent – something extra beyond mere novelty is required (*Hotchkiss* – handles made out of clay instead of wood)
	1. An invention is not patentable if it only requires the ingenuity and skill possessed by an ordinary mechanic
3. Court took the obviousness inquiry too far in *Cuno Engineering*, holding that a “flash of creative genius” was needed for patentability
	1. Congress responded by passing §103 in the 1952 Patent Act, which was then interpreted in *Graham*
4. *Graham* sets out a framework under which obviousness is to be analyzed:
	1. **The scope and content of the prior art**
		1. All prior art that is logically related “analogous” to the invention is considered under §103 (§102(c) & (d) excluded)
			1. *Clay* identifies two criteria for determining whether prior art is analogous:
				1. Is the art from the same field of endeavor, regardless of the problem addressed?
				2. If not, is the reference still reasonably pertinent to the particular problem with which the inventor is involved?
			2. Prior art that focuses on solving the same problem is analogous (*Leapfrog*)
				1. *KSR* and *Leapfrog* are examples of industry advances being made obvious because of changes in another industry (electronics and computers)
		2. The proper way to consider the scope of the prior art is to picture the inventor in his shop with the prior art references hanging on the wall around him (*Winslow*)
			1. The law presumes that a hypothetical PHOSITA possesses knowledge of all *pertinent* prior art for nonobviousness purposes
				1. Does this create a “superperson” skilled in the art?
		3. There has never been any doubt that all §102(a) prior art is included in §103 prior art

Prior Art Under 103

* + 1. *Hazeltine* employs the same logic as *Milburn* to find §102(e) prior art applicable under §103 – the delays of the patent office should not impact an obviousness determination
			1. However, §103(c) exempts §102(e), §102(f), and §102(g) from being prior art under §103 when assigned to or owned by the same person
			2. Europe & Japan follow *Milburn*, but not *Hazeltine*
		2. *Oddzon* holds that §102(f) prior art is included in §103 prior art
			1. A’ that is obvious in view of A, is unpatentable to a party that received a disclosure of A – it may not be unpatentable to the inventor of A, or a third party who did not receive the disclosure of A
		3. §102(b) prior art is also included in §103 prior art (*Foster*)
			1. Post-invention references can be used for an obviousness analysis within §102(b), but not §103 (because §103 requires obviousness analysis to occur at the time the invention was made)
			2. Restricts inventors’ ability to sleep on patent rights
	1. **Differences between the prior art and the claims at issue**
		1. The disbelief of experts in the field can be a secondary factor under the *Graham* framework that is extremely persuasive (*Adams v. U.S.* – water activated battery)
			1. The Adams battery also had “wholly unexpected[]” operating advantages of other batteries that removed it from obviousness
		2. If the prior art or experts in the field “teach away,” there is a powerful indication towards nonobviousness (*Arkie Lures* – prior art said plastic, salty lures were unachievable)
	2. **The level of ordinary skill in the art**
		1. A list of factors relevant to the level of skill in the art include: 1) Inventor’s educational level; 2) Type of problems encountered in the art; 3) Prior art solutions to the problem; 4) Rapidity with which innovations are made; 5) Sophistication of the technology; and 6) Educational level of workers in the field (*Environmental Designs v. Union Oil*)
	3. **Secondary factors, such as commercial success, long felt but unsolved needs and others’ failures**
		1. Courts will interrogate “why no one else came up with this innovation earlier? If the answer is not attributable to inventor’s cleverness, obviousness might be implicated (*Richardson-Vicks v. Upjohn* – FDA approval of OTC ibuprofen spurred combination of pseudoephedrine and ibuprofen in a single pill)
		2. Secondary factors are not merely icing on the cake – they are an integral part of the obviousness inquiry (*Hybritech*)
			1. Did court skip *Richardson-Vicks* analysis – Hybritech’s success was because of research that had recently entered public domain?
1. In *KSR*, SCOTUS struck down the TSM test (a claim is only obvious if some motivation or suggestion to combine the prior art teachings is found in the prior art) as the only test for obviousness
	1. Similar to the machine-or-transformation test, although TSM is a helpful tool, it cannot be the only way to determine obviousness
		1. Lead to several Federal Circuit decisions that use a “flexible TSM test”
	2. Predictability is the key in determining whether combination patents are permissible.
		1. The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results
		2. When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result
	3. Obvious to try is also an acceptable obviousness test, but *only* when a finite number of identified, predictable solutions exist
	4. A PHOSITA is also determined to have “ordinary creativity” that would help a court more easily make a finding of obviousness
	5. Post-KSR, the USPTO guidelines outline seven different rationales for a prima facie finding of obviousness:
		1. Combining previous art elements via known methods, yielding predictable results
		2. Substitution of known element for another with predictable results
			1. Modest, incremental improvements of an existing product or process may confer commercial value, but lack sufficient inventiveness to justify a patent (*Ritchie v. Vast Res.* – sex toy made out of Pyrex)
		3. Use of known techniques to improve similar devices in the same way
		4. Applying known technique to known device to yield predictable results

Post-KSR USPTO Obviousness Guidelines

* + 1. Obvious to try (choosing from finite number of predictable solutions with reasonable expectation of success)
			1. *In re Kubin* discussed two circumstances when “obvious to try” should not equate to obviousness under §103
				1. A defendant merely throws metaphorical darts at a board filled with combinational prior art possibilities– don’t succumb to hindsight
				2. Exploration of a new technology or field that seemed promising, where the prior art only gave general guidance
		2. Variations of known work in one field for use in another based on market forces if variations were predictable to a PHOSITA
		3. TSM in prior art to combine and arrive at claimed invention

## Infringement

1. That which anticipates, if earlier, infringes, if later
2. *Phillips* encourages courts to rely on a patent’s specifications (intrinsic evidence) as the primary interpretive tool in determining claim meanings – dictionaries should be secondary
	1. This issue arises because SCOTUS determines that claim construction is suited for judicial determination in *Markman*
	2. Creates a tension between instruction not to import limitations from the specification into the claim and requirement to read claims in light of specifications
	3. To the extent that trial courts rely on extrinsic evidence to make factual determinations regarding claim construction, those findings must be reviewed for clear error (*Teva*)
3. In order to find infringement under doctrine of equivalents, claims must not only read literally on the accused structures, but must do the same work, in substantially the same way and accomplish substantially the same result. (*Autogiro*)
	1. This prevents literary drafting skill from overtaking common sense during infringement proceedings
	2. Doctrine of equivalents is an equitable one – courts use it to get to a result they deem fair

Doctrine of Equivalents

* + 1. In *Wright*, the court held that “means whereby [a] rudder is caused to present to the wind” could mean either a rope-and-pulley system (used by the Wright Bros.) or a pilot (used by infringers)
		2. Goes back to the original patent question – what is your contribution? Have you “done enough?”
	1. Any narrowing amendment made to satisfy a requirement of the Patent Act may (but not necessarily will) give rise to prosecution history estoppel (*Festo*)
		1. Patentee can rebut the presumption that an amendment reaches the equivalent in question
		2. Unclaimed but disclosed embodiments are also not eligible for protection under the doctrine of equivalents (*Johnson & Johnston*)
		3. A patentee also bears the risk of narrow claiming – if a foreseeable alteration was omitted from claims, doctrine of equivalents may not reach it (*Sage Products*)
	2. *Westinghouse* is one of the rare cases of reverse doctrine of equivalents – even though an invention falls within the literal terms of a patent’s claim, it is so different as to merit its own patent
1. The court in *Abbott* would not allow a product-by-process claim to extend an original inventor’s patent term by inventing a new process to produce the desired product
2. AIA §273 permits a prior commercial use defense to patent infringement – however, this forces an infringer to publicly reveal prior secret activity (which could include trade secrets), and a heavy burden of proof (clear and convincing evidence)
3. There can be no contributory (indirect) infringement without direct infringement (*Aro II*)

Contributory Infringement

* 1. When use infringers, repair does also, because it perpetuates the infringing use
	2. However, indirect infringement requires that the alleged infringer knew that the combination for which his component was especially designed was both patented and infringing
		1. However, direct infringement imposes no scienter requirements – strict liability controls
		2. Indirect infringers cannot escape liability if they have a good faith belief that their product does not infringe the patent (*Sandisk v. Lexar Media*)
		3. Nor can infringers escape liability through a good faith belief that a patent is invalid (*Commil*)
	3. If there are substantial non-infringing uses for an article, indirect infringement will not be found unless accompanied by a teaching to use the article in the infringing manner (*C.R. Bard*)
	4. When no patent has issued at the time of an inducement to infringe, there can be no violation of §271(b) (*Presto v. West Bend*)
1. Patents should be construed narrowly to avoid extraterritorial effects (*Brown v. Duchesne* – patent for improvement on a French boat that docked in Boston invalid against that boat)
	1. However, §271(f) imposes liability when an exporter sells components for foreign assembly and such assembly would constitute indirect infringement if assembly occurred in the U.S.
		1. §271(g) further allows U.S. process patent holders to exclude products made by their processes overseas from entering the U.S. market
			1. Software copies sent on master disks for copy and redistribution overseas do not infringe under §271(f) because software is not a “component” under the statute (*Microsoft v. AT&T*)