

2019 CPIP WIPO Summer School

Introduction to U.S Patent System

Sean M. O'Connor

Professor of Law and Executive Director

Center for the Protection of Intellectual Property (CPIP)

Antonin Scalia Law School, George Mason University

Overview

- Roots of patent law in European civil and common law jurisdictions
- U.S. patent sources of law
- Subject matter
- Prosecution—U.S.
- Nature of rights
- Enforcement
- Inventorship vs ownership: conveyance of rights

Roots of U.S. patent law in European civil and common law jurisdictions

- IP arose historically to *secure* private property and tort rights to incentivize making *public* disclosures and distribution of innovative knowledge, goods, and services
- Within smaller communities, sharing seemed encouraged by informal attribution and reciprocity customs
- Urbanization disrupted this as attribution and reciprocity was no longer likely—e.g., others in city could benefit without knowing name of, or feeling any duty of reciprocity to, inventor/creator
- Roman *collegia* and *universitas* became medieval craft guilds based around secrecy and legal exclusivity of trades

Roots of patent law in European civil and common law jurisdictions

- Privacy had its price and competition could be stifled
- Late medieval complex building and engineering projects (e.g., cathedrals, military fortifications and weapons) required cooperation across guilds
- Venice began a proto patent system to commission useful and inventive public works and encourage competition among local and foreign artisans, inside and outside guilds
- Enacts patent statute in 1474 and idea spreads across Europe

Roots of patent law in European civil and common law jurisdictions

- England grants exclusive rights and benefits to incentivize introduction and establishment of foreign arts (patents of importation)
- Patentees must train English apprentices—likely source of early standard patent term of 14 years (two 7-year apprenticeships)
- The term “patents” comes from the British “litterae patentēs” or “open letters”—which included any open order or edict of the Crown (as opposed to closed letters)
- Patents remained part of Crown prerogative power for centuries, including through 1623/4 Statute of Monopolies

U.S. patent sources of law

- U.S. Constitution's IP Clause:
“The Congress shall have 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” (Art. I, § 8)(emphasis added)
- Modern popular usage of many of these terms confuses its meaning

U.S. patent sources of law

- Major U.S. patent statutes
 - 1790—patent tribunal
 - 1793—registration system
 - 1836—examination system and patent office
 - 1870—major restatement of patent and copyright law
 - 1952—“modern” patent act introduced
 - Bayh-Dole—tech transfer
 - Hatch-Waxman—generic drugs and pharma term extensions
 - AIA—transforms U.S. into first-inventor-to-file system
- N.B.: 19th c. cases establish patents as an entitlement—inventors have a *right* to a patent once they meet statutory criteria; patent not granted by “grace and favor” of sovereign as in original British system

Subject matter: types of patents

- Utility: what we normally think of as “patents”; “anything under the sun made by man” within the “useful arts”; 20 year term from date of application
- Design: ornamental features of articles of manufacture; 15 years from date of grant
- Plant Patent Act: asexually produced plants; 20 years from date of application
- Plant Variety Protection Act (sexually produced plants)—breeder certificates, but not technically “patents”

Subject matter: utility patents

- “Anything under the sun *made by man*” *Diamond vs. Chakrabarty*, 447 U.S. 303, 1980 (quoting Senate Report for 1952 Patent Act)(emphasis added)
- Statutory 35 U.S.C. §101
- U.S. Patent Act, 35 U.S.C. 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, subject to the conditions and requirements of this title.*
 - process,
 - machine,
 - manufacture,
 - composition of matter,
 - or any new and useful improvement thereof

Subject matter: utility patents

- Judicial exceptions (imported from British case law):
 - Laws of Nature
 - Physical Phenomena (naturally occurring objects)
 - Abstract Ideas (including “algorithms”)
- Current statutory proposal would abrogate these

Subject matter: utility patents

- Other Mechanisms for Removing Subject Matter from Patent Eligibility
 - (Former) field restrictions
 - business methods
 - software
 - Statutory exclusions
 - Atomic energy
 - Distinguish limitations on *enforceability*
 - surgical methods

Subject matter: special issues for life sciences patents

- USPTO rule against patenting higher life forms
- *Myriad*: “natural” form of DNA not patent eligible
- *Prometheus*: pure “mental step” correlations not patent eligible (“low homocysteine level = Vitamin B deficiency”)
- Classes of molecules or compositions must show specific utility, not mere identification of class
- Less predictable nature of bio-chem substances and processes means “obvious to try” insufficient to show obviousness
- Also means broad enablement claims across a class insufficient—must show enablement for each species within the genus

Subject matter: special issues for life sciences patents

- Patent “exhaustion” and biological materials
 - “First authorized sale” of patented product “exhausts” patent rights: buyer may resell and reuse (judicial doctrine)
 - Monsanto sought to “lease/license” its GMO seeds to avoid first sale/exhaustion
 - Supreme Court interpreted Monsanto “bag tag” license to not avoid exhaustion
 - BUT, sale of seeds *qua* seeds meant they could only be resold in seed form or used to grow crop; 2nd generation seeds *not* part of original sale no exhaustion
 - 2nd gen seeds could only be sold as feed and could not be used to grow new plants without new license

Subject matter: special issues for software and business method patents

- Software has a complicated IP history in US
- Patent protection has varied over time; arguments against protection have focused on software as algorithms which are defined by courts as “abstract ideas”
- Congress added software to Copyright Act in 1980, mainly focused on notion of *source code* as literary work; but what about *object code*?
- Vendors also protect through trade secret and contract

Subject matter: special issues for software and business method patents

- *Bilski v. Kappos*, 561 U.S. 593 (2010)
 - Hedging business method was an abstract idea and not patent eligible
 - But Supreme Court did not categorically rule out business methods from patent eligibility
 - Though it did reject the “machine or transformation” test as the “sole” criteria for patent eligibility

Subject matter: special issues for software and business method patents

- *Alice Corp v. CLS Bank*, 573 U.S. 208 (2014)
 - Alice owned patents with software settlement risk mitigation method, system, and media claims
 - Trial court invalidated patents as “abstract ideas”
 - Divided Fed Cir panel reversed. En banc Fed Cir reversed panel but with many different opinions
 - S Ct held that claims are drawn to the abstract idea of intermediated settlement, and that merely requiring generic computer implementation fails to transform that abstract idea into a patent-eligible invention.
 - BUT, algorithms are concrete sets of steps, not “abstract ideas”

Patent prosecution (see USPTO Guide)

Inventorship

- Inventorship (35 USC 116)
 - An inventor is one who, alone or in conjunction with others, “invents” a claimed process, machine, manufacture, or composition of matter, or any new and useful improvement thereof
 - “Invents” means the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention as it is thereafter to be used. This must be so clearly defined in the inventor’s mind that only ordinary skill (i.e., without unduly extensive research or experimentation) would be required to reduce the invention to practice.
 - Anyone who provides a substantial contribution to the invention is a co-inventor

Misjoinder and nonjoinder

- All and only the true natural person inventors must be listed on applications and issued patents
- Includes inventions pre-assigned by inventors (no statutory work made for hire as in U.S. Copyright Act—more later on that)
- “Misjoinder” means a person who did not invent is listed. While it can be common practice to list lab directors and others in publications, do not add them as inventors unless they truly contributed
- “Nonjoinder” means an inventor was *not* listed
- Both of these can render the patent unenforceable
- Correctable so long as no bad or deceitful intent

Assignment and licenses

- Patents have the attributes of property by statute
- Inchoate inventions, patent applications, and issued patents can be:
 - Assigned (sold/transferred); must be recorded with the USPTO; separate inventorship from ownership
 - Licensed exclusively or non-exclusively
- Assignments and exclusive licenses that convey all rights to licensee can authorize assignee/licensee to have standing and enforce the patent

State laws affecting IP ownership and transfer

- State (not federal) common law “shop rights” rules
- Common law default rules in cases where there is NO written assignment or title allocation
- Three categories:
 - “Hired to invent” equitable title assignment
 - Shop rights nonexclusive, nontransferable license
 - Employee retention of full rights and title

State laws affecting IP ownership and transfer

- “Freedom to create” laws in some states limit assignment demands of employers
 - California (Cal. Labor Code § 2870)
 - Washington (Rev. Code Wash. § 49.44.140, 49.44.150)
 - Minnesota (Minn. Stat. Ann. § 181.78)
 - North Carolina (N.C. Gen. Stat. § 66-57.1, 66-57.2)
- In the opposite direction, Nevada has a statutory hired-to-invent law (Nev. Rev. Stat. § 600.500)

Bayh-Dole and government contractors

- Background
- Sec 202(a)-(b): Dispositions of rights as between government and contractor in “Funding Agreements”
- Sec. 202(c): Mandatory provisions for funding agreements
 - Subject invention disclosure
 - Government license
 - Utilization reports
 - Special requirements for nonprofits and universities
- Sec. 202(d): Granting title to inventors; *Stanford v. Roche* (U.S. Supreme Court)
- Sec. 203: March-In Rights
- Sec. 204: Preference for U.S. Industry
- Sec. 206: Uniform clauses and regulations

Compulsory licenses

- Government Use Statute
 - 28 USC 1498 (NOT part of either Copyright Act or Patent Act)
 - Essentially a kind of eminent domain provision, but does not result in a “taking” of the IP, *Zoltek v US* (Fed Cir 2009)
 - Allows government to use IP without license but only for government purposes
 - Also allows government contractors to use IP
 - IP owner can seek compensation in Court of Claims
 - Different from Bayh-Dole government license; no federal funding required for use of 1498
- Research use exceptions
 1. “philosophical use”—judicial—*Duke v. Madey* (Fed. Cir. 2002)
 2. “Bolar” drug research exception, 35 USC 271(e)(1), as interpreted by *Integra v. Merck* (US Supreme Court 2005)

Infringement

- No independent creation in patents as in copyright law; with the exception of limited “prior user rights,” it is no defense to show one invented independently
- Each of the exclusive rights can be severally infringed
 - Making
 - Using
 - Selling
 - Importing

Doctrine of equivalents

- “Literal infringement” is where the product or process is exactly copied and essentially a counterfeit
- But in many cases, some changes exist in infringing product or process
- If changes are trivial or do not relate to core functionality (e.g., ornamental changes), then “doctrine of equivalents” permits finding of infringement
- Effectively “expands” the zone of patent
- But all elements of a particular claim must still be copied to find infringement
- However, any changes that were in the patent application and given up to satisfy an office action rejection cannot be “recovered” through DOE; this is called “prosecution history estoppel”

Secondary Liability

- Persons need not directly infringe to have liability
- Inducing or contributing to a third party's direct infringement can result in liability as well
- But a single party must still have directly infringed all elements of a claim
- Induce: knew of the patent yet still actively induced (e.g. paid money or gave other value/incentives) the third party to infringe it
- Contribute: one's components or processes are used by the third party infringer as part of the infringement (e.g. of a combination patent), and the contributor knew that the components were going to be so used, and the component is neither a staple nor has substantial non-infringing uses

Cease and Desist letters and Declaratory Judgment actions

- C&D letters as opening salvo for licensing or litigation
- Declaratory Judgment actions as interpreted by *Medimmune v. Genentech* (US Supreme Court 2007) and other cases

Infringement proceedings

- First step: claim construction and interpretation
 - Markman hearings
 - Lexicography source
 - Claim construction is a matter of law for the judge to decide (as opposed to dispute matters of fact generally left to juries)
- Outcome of construction often determines the case and any settlement
- If not, then second step of framing factual disputes and submitting to jury ensues

Remedies

- Damages
 - Lost profits
 - Allocation issues
 - Treble damages for willful infringement
- Injunctions
 - TRO (temporary restraining order)
 - Temporary injunction
 - Permanent injunction
- Costs and attorneys' fees