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Patents

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What is a Patent?

- **A U.S. patent for an invention is the grant of a property right to the inventor(s), issued by the U.S. Patent and Trademark Office. The right conferred by the patent grant is, in the language of the statute and of the grant itself, "the right to exclude others from making, using, offering for sale, or selling" the invention in the United States or "importing" the invention into the United States. To get a U.S. patent, an application must be filed in the U.S. Patent and Trademark Office.**

What Law Governs Patents?

- **The first patent law was enacted in 1790. It is codified in Title 35, United States Code. The America Invents revision, in 2011, became effective by 2013.**

What Can Be Patented?

- **Any person who "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," subject to the conditions and requirements of the law. May include:**
  - **Improvements to known technologies**
  - **New combinations of known technologies**
  - **New uses of known technologies**

- **These classes of subject matter taken together include practically everything that is made by man and the processes for making the products.**

What Cannot Be Patented?

- **Inventions useful solely in the utilization of special nuclear material or atomic energy for atomic weapons.**
- **The laws of nature, physical phenomena, and abstract ideas are not patentable subject matter.**
- **A mere idea or suggestion.**

Conditions For Obtaining A Patent – Novelty

- **The patent law specifies that the subject matter must be "useful."**
  - **the subject matter has a useful purpose and also includes operability**
  - **E.g., a machine which will not operate to perform the intended purpose would not be called useful, and therefore would not be granted a patent.**
- **In order for an invention to be patentable, it must be new as defined in the patent law.**

Conditions For Obtaining A Patent – Novelty

- **An invention cannot be patented if:**
- **"(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 application for patent in the United States . . ."**

Conditions For Obtaining A Patent – Novelty

If the inventor describes the invention in a printed publication or uses the invention publicly, or places it on sale, he/she must apply for a patent before one year has gone by, or lose the patent rights.

-under "first to invent," this meant a year during which the inventor could actively discuss the invention with experts.

-under "first to file," this appears to mean that the office MIGHT consider a claim, within a year, even though the inventor went public and has not yet filed. But if someone else files: trouble.

The inventor must file on the date of public use or disclosure, however, in order to preserve patent rights in many foreign countries.

Conditions For Obtaining A Patent – Non-Obviousness

The subject matter sought to be patented must be sufficiently different from what has been used or described before that it may be said to be non-obvious to a person having ordinary skill in the area of technology related to the invention. For example, the substitution of one color for another, or changes in size, are ordinarily not patentable.

PATENT ELIGIBILITY UNDER § 101

- The threshold question for any invention is whether the subject matter of that invention is patentable under 35 U.S.C. § 101. Under § 101, "[w]hoever 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." Although this section uses positive language to indicate what is patentable (i.e., a "process, machine, manufacture, or composition of matter"), the Supreme Court has crafted certain negative exceptions for inventions that are not patent eligible. These exceptions include "laws of nature, natural phenomena, and abstract ideas." *Mayo, 566 U.S. at 70*. The Court has explained that these exceptions exist to prevent patents on the basic building blocks and tools of science. While laws of nature, natural phenomena, and abstract ideas are not patentable, specific "applications" of such subject matter may be patentable. In fact, all inventions in some way reflect the use or application of otherwise foundational and unpatentable principles. The question then becomes where to draw the line.
- In order to determine patent eligibility under § 101, the Supreme Court has articulated what is commonly referred to as the *Alice*/*Mayo* test. This test proceeds in two parts. A court must first examine whether the particular claim is "directed to" a law of nature, abstract idea, or natural phenomena. If so, the court must then examine whether the limitations of the challenged patent claim go beyond the ineligible subject matter so as to "transform the nature of the claim into a patent-eligible application." *Alice, 573 U.S. at 217*. In other words, a patent claim "directed to" patent ineligible subject matter may be patentable if the claim adds something beyond "well-understood, routine, conventional activity" to the ineligible concept. *Mayo, 566 U.S. at 79-80*.

- Robert Masters, Jonathan DeFossee & Kevin Ryan
  LexBlog
  February 3, 2000
  https://www.lexblog.com/2020/02/03/ip-outlook-cases-trends-2020-part2-patent-eligibility/

Types of Patents

- **Utility patents may be granted to anyone who invents or discovers any new and useful process, machine, article of manufacture, or compositions of matters, or any new useful improvement thereof.**
- **Design patents may be granted to anyone who invents a new, original, and ornamental design for an article of manufacture. (THESE ARE NOT GRAPHIC DESIGNS, FABRIC DESIGNS, SOFTWARE DESIGNS, etc.**
- **Plant patents may be granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plant.**

Types of Patents

- **Business methods/process (software patents are usually of this type)**
  - **Originally allowed like any other invention.**
  - **[Then] (roughly, 1905-1998--before State Street v. Signature) disallowed.**
    - **[Then] allowed IF the innovation advanced the technological arts.**
    - **That special requirement was struck in 2005.**
  - **Now business methods are treated as any other type of innovation.**
  - **Bilski, at the Supreme Court, retained: process patents**

- **With lots of "how to use technology" stuff, it's tough to determine whether the innovation is a product or a process.**
  - **Early digital technology, esp. internet activities, got through as products when they were processes AND**
  - **A lot of these turned out to be bad filings and approvals BUT**
  - **Now we're stuck with trying to work them out.**
  - **For example: Gibson and Guitar Hero**
    - **"Gibson says *Guitar Hero* too closely matches a musical virtual-reality patent from 1999, and Activision should not be able to sell the game until it receives a license under the patent."**

How Long and Where is a Patent Protected?

Generally, the term of a new patent is 20 years from the date on which the application for the patent was filed in the United States or, in special cases, from the date an earlier related application was filed, subject to the payment of maintenance fees. U.S. patent grants are effective only within the United States, U.S. territories, and U.S. possessions. Under certain circumstances, patent term extensions or adjustments may be available.

Patent Complexities

- **Special court: Court of Appeals for the Federal Circuit Court**
- **Special lawyers and certification**
- **Large DC bureaucracy, though many claim that the principle problem is that the office is overwhelmed.**
  - **Over 650,000 filings a year now compared to 300,00 in 2000.**
  - **370,434 patents *issued* in 2019.**
  - **Approx. 9,600 examiners in 2019**
    - **Might need another 500+ to make faster progress**
  - **14.7 months (down from 16.2 in 2016) from filing to initial "ok to proceed"**
  - **23.8 months (down from 25.3 in 2016) from filing to obtaining patent**

Patent Complexities

- **During the "change-over" to digital, the office probably made loads of mistakes, esp. by giving out patents on processes that were not yet understood (many of these were formative digital technologies).**
- **Many of those patents have been litigated over and over and over (continuing today)**

- **EFF's Patent Busting Project**

Patent Process

- Overview
- **One should not publish/demonstrate/sell/offer to sell publically until after making application (for US only, there's a one year grace period, but not oversees, or here, after the new bill goes into place).**
  - **Although there are debates over how and how well this grace period work under "first to file."**
- **First to invent used to win in US.**
- **First to file wins elsewhere.**
- **First to file here since March 13, 2013.**

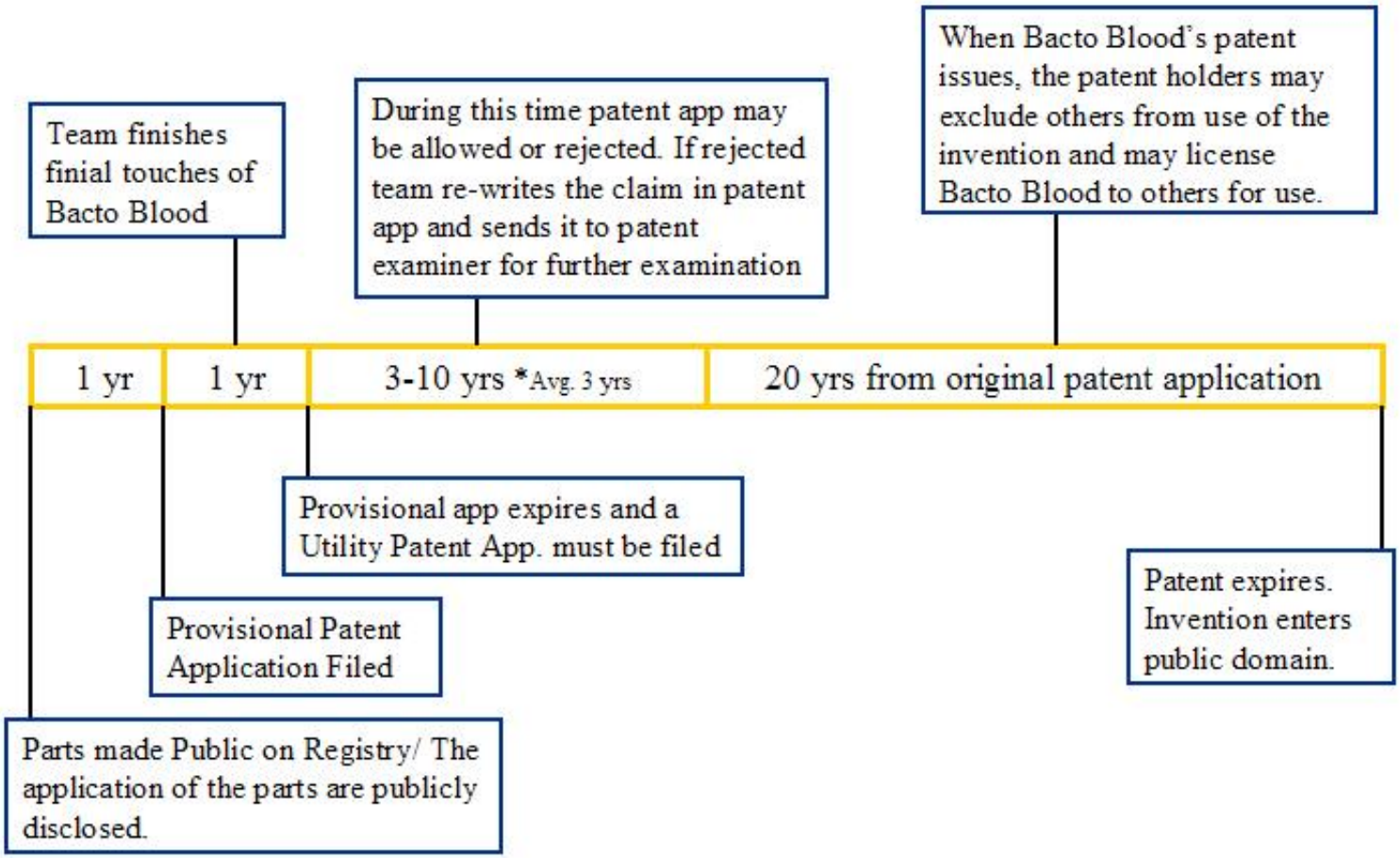
Patent reform: Leahy-Smith America Invents Act

- The law harmonized the American patent process with the rest of the world: First to file
- A fast track option for Patent Processing within 12 Months: Instead of an average wait time of almost three years, the Patent and Trademark Office will be able to offer startups growing companies an opportunity to have important patents reviewed in one-third the time – with a new fast track option that has a guaranteed 12-month turnaround. Patent ownership is a critical factor venture capital companies consider when investing in entrepreneurs hoping to grow their business.

- Reducing the current patent backlog:, the patent backlog was reduced in the first couple years after the act, from over 750,000 patent applications to 680,000, despite a 4% increase in filings. The additional resources provided in the law will allow the Patent and Trademark Office to continue to combat the backlog of nearly 700,000 patent applications and will significantly reduce wait times.
- Reducing litigation: Review process for approved patents.
- Increasing office budget: enable price increases.

- Initial speculation was that the new law could hurt smaller tech firms
- There's no direct evidence, yet, that is the case.

The timeline



Source: http://parts.mit.edu/igem07/index.php/Kristin_Fu

Penalties

- **Court awarded damages, issued to the patent owner**
  - **Amount could be set by jury or judge.**
  - **Requires the infringer to pay monetary damages of a variety of types.**
    - **Compensation for wrongful use.**
      - **royalty rate: what would the cost of licensing have been?**
        - **Under some circumstances, this amount can be "factored" (tripled) for willful infringement**
      - **Interest on the damages from the date of first infringement**
      - **Court costs (but generally not attorney's fees)**

Penalties

- **Injunction, perhaps stayed (or invoked) during appeal, permanent or otherwise, to stop further infringement.**