

13.1.1: The Foundations of Patent Protection

Learning Objectives

After completing this section, you will be able to

- Describe the philosophical logic behind granting patents.
- Describe the role of patents in fostering invention.

Do Patents Really Promote Innovation?

Before reading this section, please watch the overview video below covering the usefulness of patents - how ironic that a system for granting exclusive rights to inventors is the greatest vehicle for knowledge-sharing and technology transfer ever devised by human beings.



Wikimedia Commons /

What Is A Patent?

A **patent** is an **intellectual property** right granted by the government of a nation to an inventor that gives them the exclusive right to the invention for up to 20 years, in exchange for disclosing the details of the new technology to society for its ultimate benefit.

In the United States, a **patent** is a legal instrument in the form of a document issued by the United States Patent and Trademark Office (USPTO). It gives the inventor of any new, useful, and non-obvious machine, process, manufacture, or composition of matter the right “to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States” for a limited time in exchange for public disclosure of the invention.ⁱ A U.S. patent is only recognized domestically, and cannot be enforced in another country.

History of Patents in the United States

The legal foundation for U.S. intellectual property rights was laid by the Founders in 1787, in the very first Article of the U.S. Constitution, which outlined the precepts of our democratic society. In Article 1, Section 8, Clause 8 of the Constitution, Congress was given the authority 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”.ⁱⁱ

America was the first country in the world to enshrine intellectual property rights in its national constitution. And the Founders did this quite deliberately, says B. Zorina Khan, an economic historian at Bowdoin College whose book, *The Democratization of Invention: Patents and Copyrights in American Economic Development*, was awarded the Alice Hanson Jones Prize for an

outstanding work in economic history.ⁱⁱⁱ “To the men who gathered in Philadelphia to ‘promote the general welfare,’” Khan wrote, “it was self-evident that ideas, industrial and cultural inventions, and democratic values were integrally related. American democratic institutions would ensure that rewards accrued to the deserving based on [merit] rather than on the arbitrary basis of class, patronage, or privilege.”

Indeed, the Founders viewed intellectual property rights as vital to the new nation’s economic survival. As George Washington himself stated in his first annual address to Congress in 1790, “The advancement of agriculture, commerce, and manufactures by all proper means will not, I trust, need recommendation. But I cannot forbear intimating to you the expediency of giving effectual encouragement to the introduction of new and useful inventions.”

The question is, with all the challenges they faced, why did the Founders think it so crucial to create a strong intellectual property system? Their reasons were both universal—i.e., applying to all societies—and also very particular to America’s revolutionary experience.

"Bargain" Theory vs. "Natural Rights" Theory

Every society that affirms intellectual property rights offers two justifications for doing so: the **bargain or contract theory** and the **natural rights theory**.

"Bargain" Theory

The “bargain” theory starts with the commonsense premise that people will be encouraged to invent new products and services that benefit society if they are likely to profit by doing so. The U.S. Constitution thus offers inventors a bargain: If you invent something useful—e.g., a cotton gin in 1794 that boosted agricultural production a hundredfold, or a semiconductor 163 years later that sparked the creation of a trillion-dollar new industry and millions of jobs—then the Constitution and statutes say that, as a quid pro quo, you can have the exclusive right to that invention for a “limited time,” after which it goes into the public domain and belongs to society.

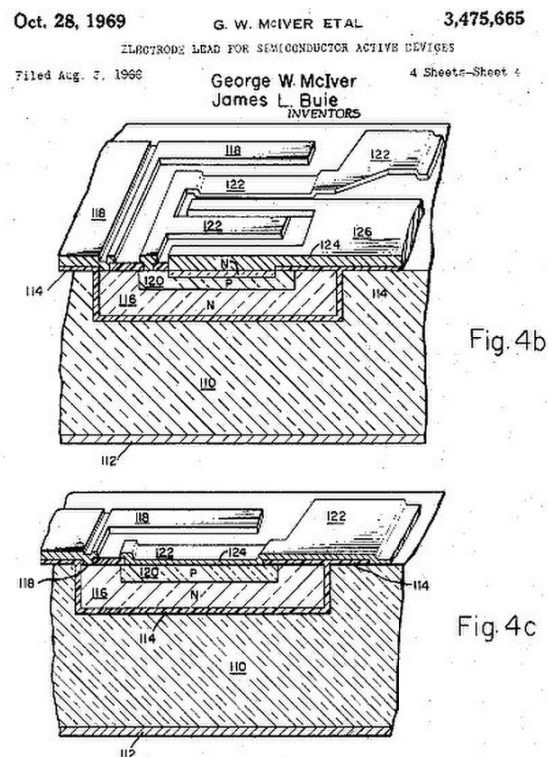


Figure 1.1.2 Patent for an electrode lead for semiconductor devices (credit: US Patent Office via Wikimedia Commons / Public Domain)

There is something so simple yet economically potent about this concept. As Abraham Lincoln—America’s only presidential patentee (No. 6469 for a device to lift boats over shoals)—noted, the beauty of the patent system is that it “added the fuel of interest to the fire of genius.”

"Natural Rights" Theory

The “natural rights” theory, meanwhile, invokes another commonsense premise that most of us instinctively hold to be true: that the product of mental labor is by all rights the property of its creator, no less than the product of physical labor is the property of its creator (or of the person who purchases it from that creator). This is what Daniel Webster was referring to when he said, “The American Constitution does not attempt to give an inventor a right to their invention, or an author a right to his composition; it recognizes an original, pre-existing, inherent right of property in such invention or composition.”

This right is not absolute, of course, and inventors’ inherent rights may at times be circumscribed by national security or other concerns. But in exchange for disclosing to the public the nature and details of the invention, the Constitution authorizes the government to enforce the inventor’s exclusive property right to that invention for a limited time.

Two important public policy goals are thus served. The inherent property rights of inventors and authors to their creations are protected, thereby helping to ensure that the wellsprings of creation and productivity do not dry up for lack of incentive. And yet the benefits derived from these inventions and creations are ultimately harnessed to the public good through disclosure, thus promoting the progress of the nation and “the general welfare” of its citizens.

How Patents Foster Innovation

To help understand why patent rights not only encourage inventors but also promote the wider diffusion of new technology for the benefit of society, economic historians Naomi Lamoreaux and the late Kenneth Sokoloff suggested the following thought experiment:

Imagine a world in which there was no patent system to guarantee inventors property rights to their discoveries. In

such a world, inventors would have every incentive to be secretive and to guard jealously their discoveries from competitors [because those discoveries] could, of course, be copied with impunity. “By contrast, in a world where property rights in invention were protected, the situation would be very different. Inventors would now feel free to promote their discoveries as widely as possible so as to maximize returns either from commercializing their ideas themselves or from [licensing] rights to the idea to others. The protections offered by the patent system would thus be an important stimulus to the exchange of technological information in and of themselves. Moreover, it is likely that the cross -fertilization that resulted from these information flows would be a potent stimulus to technological change.”^{iv}

It’s more than just “likely.” Extensive research in the United States and other nations shows that patents have served as a powerful stimulant to technological knowledge sharing. A 2006 survey published by the French economists Francois Leveque and Yann Meniere, for example, found that 88 percent of U.S., European, and Japanese businesses rely upon the information disclosed in patents to keep up with technology advances and direct their own R&D efforts.^v

Patents Don't Block Innovation, They Promote It

From the earliest days of the United States, patent and legal records show how inventors (including Thomas Edison) regularly kept abreast of developments in their fields. They did this by studying patent descriptions published by both the USPTO as well as by industry publications such as Scientific American, which was founded in 1845 by Munn and Company, the leading patent agency

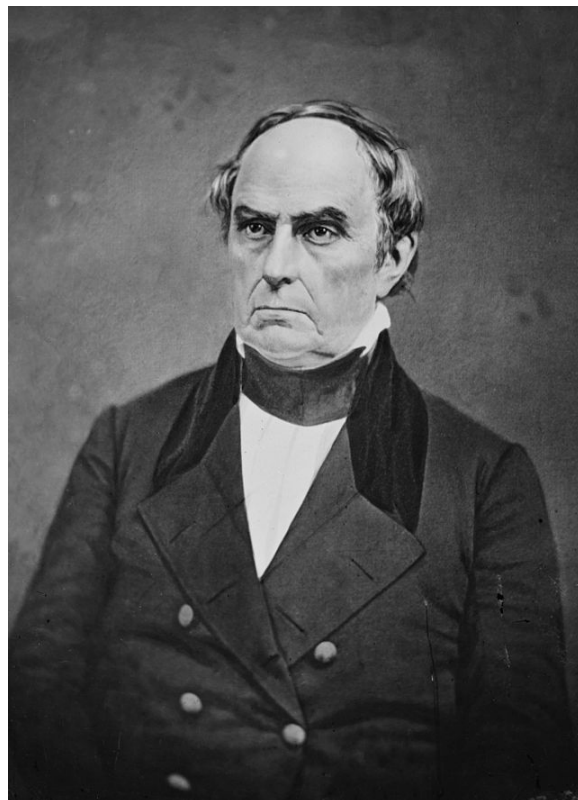


Figure 1.1.3 Daniel Webster, an American lawyer and statesman (Credit: Wikipedia / Public Domain)

of the nineteenth century, expressly to spread new technological knowledge and facilitate the buying and selling of patents. For example, Elias E. Reis—inventor of a number of devices to exploit the heat generated by electrical currents—reported that when he read in the Official Gazette in 1886 about a patent issued to Elihu Thomson for a new method of electric welding, “there immediately opened up to my mind a field of new applications to which I saw I could apply my system of producing heat in large quantities.”^{vi} In many industries, specialized journals kept readers informed about new patents of interest.

In fact, new research in 2012 discovered that rather than blocking development, Thomas Edison’s seminal 1880 incandescent lamp patent (No. 223,898) actually “stimulated downstream development work” that resulted in “new technologies of commercial significance [including] the Tesla coil, hermetically sealed connectors, chemical vapor deposition process, tungsten lamp filaments and phosphorescent lighting that led to today’s fluorescent lamps.”^{vii}

Even the word “patent” signifies its social purpose of disclosure. It is derived from the Latin patent meaning “open,” and is the present participle of “pate re,” meaning “to stand wide open.”

This explains the origin of the term “letters patent” (“letters that lie open”), which refer to the patent documents issued by the English Crown. These were not closed with a seal but were instead kept open, with the seal hanging at the bottom, notifying all not to infringe upon the patent.

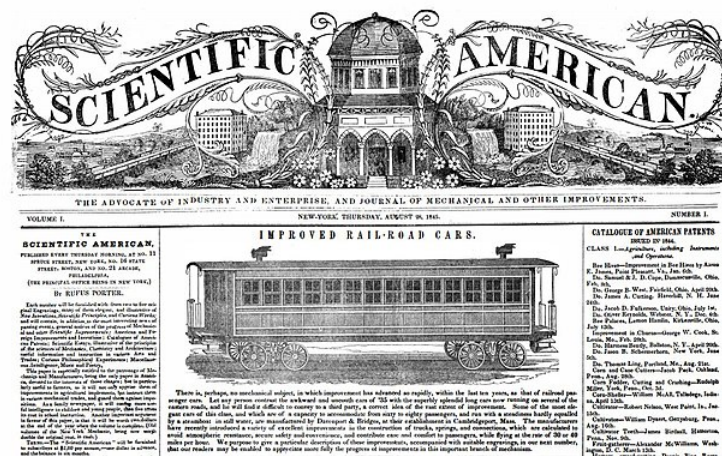


Figure 1.1.4: Front page of the first "Scientific American" issue, August 8, 1845. (credit: modification of work by Scientific American via Wikimedia Commons / Public Domain)

As with any economic and legal instrument, patents have the potential to slow innovation if their grant of exclusive rights is too broad. But the overwhelming preponderance of economic research and real-world experience demonstrate that, on balance, intellectual property rights tend to stimulate invention, economic growth, and the diffusion of new technological knowledge in every country where they exist.

This fact by itself, however, does not explain why the U.S. patent system became a model for much of the world. To understand why it did—and how it helped build the most successful economy in the history of the world—we must examine the revolutionary design of the U.S. patent system itself and the ways in which it overcame the weaknesses of earlier patent systems.

Footnotes

- ⁱ United States Patent and Trademark Office. (2012, January 26). Patents. Retrieved from www.uspto.gov/patents/index.jsp
- ⁱⁱ U.S. Constitution Arr. 1, § 8
- ⁱⁱⁱ B. Zorina Khan, *The Democratization of Invention: Patents and Copyrights in American Economic Development, 1790-1920*, Cambridge University Press, 2005.
- ^{iv} Naomi R. Lamoreaux and Kenneth L. Sokoloff, “Inventors, Firms, and the Market for Technology: U.S. Manufacturing in the Late Nineteenth and Early Twentieth Centuries,” Historical Paper 98, National Bureau of Economic Research, Cambridge, Mass., 1997.
- ^v Francois Leveque and Yann Meniere, “Patents and Innovation: Friends or Foes?” CERNA (Centre d’économie industrielle Ecole Nationale Supérieure des Mines de Paris), December, 2006.
- ^{vi} See “Record of Elias E. Reis,” 8, *Thomson v. Reis*, case 13,971, box 1,845, Interference Case Files, 1836-1905, Records of the Patent Office, Record Group 241, National Archives, courtesy of B. Zorina Khan.

- [vii](#) Ron D. Katznelson, “Inventing Around Edison’s Incandescent Lamp Patent: Evidence of Patents’ Role in Stimulating Downstream Development,” May, 2012, derived from: <http://works.bepress.com/cgi/viewcon...xt=rkatznelson>

This page titled [13.1.1: The Foundations of Patent Protection](#) is shared under a [CC BY 4.0](#) license and was authored, remixed, and/or curated by [OpenStax](#) via [source content](#) that was edited to the style and standards of the LibreTexts platform.