

*A Very Brief*  
**Introduction to Patent**

# Outline

- Patent Basics
- Patent Search
- Patent Application

# World-Famous Patent!



Telephone  
Alexander Graham Bell,  
1876, Patent No.: 174465



Light Bulb  
Thomas Edison

1876, Patent No.: 0223898



Buoying vessel  
Abraham Lincoln  
1839, Patent No.: 6469



Statue of Liberty  
Frederic Auguste Bartholdi  
1885, Patent No.: D11023

# What Is A Patent?

- *A patent for an invention is the grant of a property right to the inventor, **to exclude others from** making, using, offering for sale, selling, or importing "the invention in the United States.*
- What is granted is not the right to make, use, offer for sale, sell or import, but the right to exclude others from making, using, offering for sale, selling or importing the invention. US patents are issued by the **Patent and Trademark Office**.
- Vs. copyright: a copyright protects original published or unpublished works that fall under the categories of literature, dramatic, musical, artistic, and intellectual. It gives the owner exclusive rights to reproduce his or her work in any medium. A copyright protects a **form of expression**, but **not the subject matter** of the work. US Copyrights are registered by the **Copyright Office of the Library of Congress**.

# Copyright Example



Not copyrighted



May be copyrighted

# Apple accused of iPad patent infringement in China (again)

By Hana Stewart-Smith | February 8, 2012, 12:18pm PST

**Summary:** Apple is facing another lawsuit from Proview Technology's Shenzhen branch, who are suing under patent infringement for around \$38 million.

Apple has already collected a small back catalogue of patent lawsuits over the last few years. Some it has handled successfully and some less so, like their ongoing battle with Proview over the 'iPad' trademark.

Proview Technology is suing Apple over the rights to the 'iPad' brand within China's borders, seeking around **\$38 million** for "damages" and, perhaps most unusually, [an apology from Apple](#).

Apple and Proview have been engaged in a lengthy legal [back and forth](#) over the 'iPad' trademark for years.

Proview International Holdings, of which the Shenzhen branch is a subsidiary, registered the 'iPad' trademark in Taiwan way back in 2001. The trademark was then [sold on](#) to IP Application Development back in 2006 for \$55,000. Apple then got the rights from them in 2010, but as IP Application Development's ties to Apple [came to light](#), Proview took action against the company.

Proview began suing them for copyright infringement in 2010 for \$1.6 billion, and when Apple countered-sued the company last year, it [lost the case](#).

According to Proview lawyer Xie Xianghui, Apple had only bought the rights to use the trademark in Taiwan previously, so the Shenzhen company does not recognise their right to sell their products under the 'iPad' name.

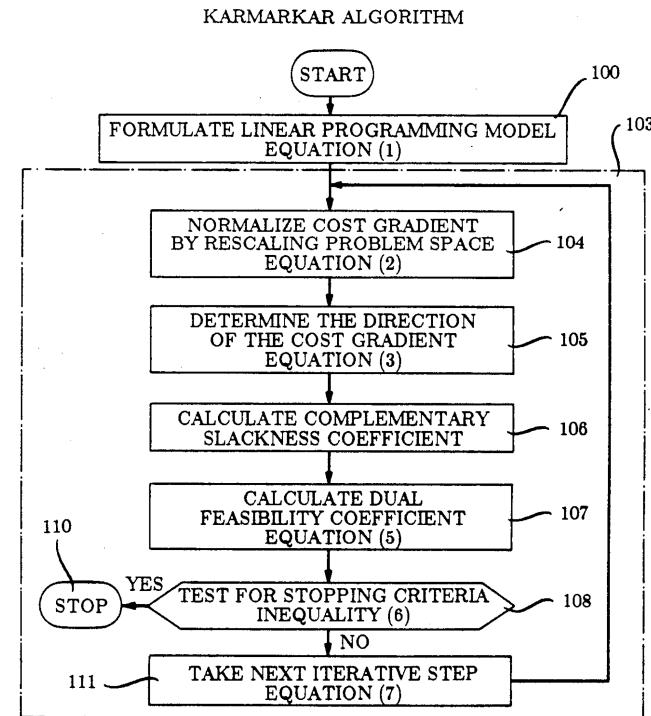


# What Can Be Patented

- "*Any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof*"
  - Process: defined by law as a process, act or **method**, and primarily includes industrial or technical processes.
  - Useful purpose and operativeness
  - **A patent cannot be obtained upon a mere idea or suggestion**

# Process

- Process
  - Usually refers to a manufacturing process, a series of steps for making something
- Method
  - Usually refers to a way of using a product to accomplish a given result
- A method patent claim is only infringed when a single person or entity practices all claimed steps



# Machine

- The Supreme Court has defined the term "machine" as "a concrete thing, consisting of parts, or of certain devices and combination of devices." *Burr v. Duryee*, 68 U.S. (1 Wall.) 531, 570 (1863). This "includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." *Corning v. Burden*, 56 U.S. 252, 267 (1854).
- Examples: steam engines, sewing machines, TV sets, electronic circuits (although they may lack moving parts)



# Articles of Manufacture

- The Supreme Court has defined "manufacture" (in its verb form) as "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery."
- Examples: hammers, crowbars, chairs, shovels, gloves, shoes, envelopes, mouse-pads, statue of liberty



# Composition of Matter

- An instrument formed by the intermixture of two or more ingredients, and possessing properties which belong to none of these ingredients in their separate state. ...The intermixture of ingredients in a composition of matter may be produced by mechanical or chemical operations, and its result may be a compound substance resolvable into its constituent elements by mechanical processes, or a new substance which can be destroyed only by chemical analysis.

# Living Things as Compositions of Matter

- Oncomouse
  - U.S. Patent 4,736,866 (filed Jun 22, 1984, issued Apr 12, 1988, expired April 12, 2005) granted to Harvard College
  - "A transgenic non-human mammal whose germ cells and somatic cells contain a re-combinant activated oncogene sequence introduced into said mammal..."
  - The European Patent Office (EPO) – the usefulness of the oncomouse in furthering cancer research satisfied the likelihood of substantial medical benefit, and outweighed moral concerns about suffering caused to the animal.
  - Patented in Australia, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Portugal, Spain, Sweden, and the United Kingdom



# What Do We Care?

- Patent Search
  - Analogy to literature search – state-of-the-art, usefulness, significance
- Patent Application

# Patent Searching

- US patents: <http://patft.uspto.gov/>
- International & US patents: <http://worldwide.espacenet.com/>
- <http://www.freepatentsonline.com/>

# Patent Application

- Who may apply for a patent
  - Only the inventor
- Application type
  - Non-provisional
    - (1) A written document which comprises a specification (description and claims), and an oath or declaration;
    - (2) A drawing in those cases in which a drawing is necessary; and
    - (3) Filing, search, and examination fees. Fees change each October. The fee schedule is posted on the USPTO Web site.
  - Provisional
    - The filing date of a provisional application is the date on which a written description of the invention, and drawings if necessary, are received in the USPTO.
    - Help to establish an early effective filing date in a later filed non-provisional patent application
    - Up to 12-month “patent pending” period to file a non-provisional patent

# Patent Application

- Patent types:
  - **Utility** patents may be granted to anyone who invents or discovers any new and useful process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof. (20 years)
  - **Design** patents may be granted to anyone who invents a new, original, and ornamental design for an article of manufacture (15 years, no maintenance fee needed)
  - **Plant** patents may be granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plant (20 years)

# Patent Process

- Patent search
- Patent fee schedule  
[http://www.uspto.gov/web/offices/ac/qs/ope/fee2009september15.htm - patapp](http://www.uspto.gov/web/offices/ac/qs/ope/fee2009september15.htm#patapp)
- Document preparation & online application  
<http://www.uspto.gov/patents/process/file/efs/index.jsp>
- Check status <http://www.uspto.gov/patents/process/status/index.jsp>
- Maitain patent by paying maintenance fees

# Patent Process

- Conditions for obtaining a patent
  - Novelty
    - Not described in any printed publication anywhere in the world; not known or used by others in this country
    - **Statutory activity bar:** within one year since the inventor describes the invention in a printed publication, or use the invention publicly, or places it on sale
  - Non-obviousness
    - Sufficient difference from prior arts
    - "Person having ordinary skill in the art" would not know how to solve the problem at which the invention is directed by using exactly the same mechanism
    - Obvious – substitutions of material, changes in size

# Disclosure Document

- Invention description 1 - Description
  - Describe both the structure, including a description of each part or device and how they are connected, and the operation of the invention in concise terms, giving an indication of the scope of its use. If the invention is a process, what are the steps involved and prepare one or more flow charts to describe.
  - At least one typical, specific, detailed example of the invention
  - The best or preferred form(s) of the invention

# Disclosure Document

- Invention description 2 - Utility and Methods of Use
  - The major and all possible or new uses for the invention
  - Indicate the most important use(s) and explain.
  - In addition to immediate applications, what potential uses might be realized in the future?

# Disclosure Document

- Invention description 3 - Background/Novelty and Non-Obviousness
  - Background environment and problem to be solved or the purpose of the invention
  - Prior technology
  - How does the invention differ from the prior technology? What advantages does the invention have over the prior technology
  - **Why do you believe the invention would NOT have been obvious to another researcher working on the same problem at the same time?**
  - List and expand on novel and unusual features of the invention. What problem(s) does the invention solve?
  - Any other advantage(s) of the invention.

DESIGN.  
A. BARTHOLDI.  
Statue.  
Patented Feb. 18, 1879.  
No. 11,023.



LIBERTY ENLIGHTENING THE WORLD.

Auguste Bartholdi  
by Hollot  
Aug.

E. A. Dick  
J. G. Thompson.

*To all whom it may concern:*

Be it known that I, AUGUSTE BARTHOLDI, of Paris, in the Republic of France, have originated and produced a Design of a Monumental Statue, representing "Liberty enlightening the world," being intended as a commemorative monument of the independence of the United States; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying illustration, which I submit as part of this specification.

The statue is that of a female figure standing erect upon a pedestal or block, the body being thrown slightly over to the left, so as to gravitate upon the left leg, the whole figure being thus in equilibrium, and symmetrically arranged with respect to a perpendicular line or axis passing through the head and left foot. The right leg, with its lower limb thrown back, is bent, resting upon the bent toe, thus giving grace to the general attitude of the figure. The body is clothed in the classical drapery, being a stola, or mantle gathered in upon the left shoulder and thrown over the skirt or tunic or under-garment, which drops in voluminous folds upon the feet. The right arm is thrown up and stretched out, with a flamboyant torch grasped in the hand. The flame of the torch is thus held high up above the figure. The arm is nude; the drapery of the sleeve is dropping down upon the shoulder in voluminous folds. In the left arm, which is falling against the body, is held a tablet, upon which is inscribed "4th July, 1776." This tab-

let is made to rest against the side of the body, above the hip, and so as to occupy an inclined position with relation thereto, exhibiting the inscription. The left hand clasps the tablet so as to bring the four fingers onto the face thereof. The head, with its classical, yet severe and calm, features, is surmounted by a crown or diadem, from which radiate divergently seven rays, tapering from the crown, and representing a halo. The feet are bare and sandal-strapped.

This design may be carried out in any manner known to the glyptic art in the form of a statue or statuette, or in alto-relievo or bass-relief, in metal, stone, terra-cotta, plaster-of-paris, or other plastic composition. It may also be carried out pictorially in print from engravings on metal, wood, or stone, or by photographing or otherwise.

What I claim as my invention is—

The herein-described design of a statue representing Liberty enlightening the world, the same consisting, essentially, of the draped female figure, with one arm upraised, bearing a torch, while the other holds an inscribed tablet, and having upon the head a diadem, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

A. BARTHOLDI.

Witnesses:

C. TERINIER.  
COTTIN.

# Disclosure Document

- Invention description - more:

- Experimental verification
- Prototypes or samples
- Supporting materials

# Disclosure vs. Paper writing

Disclosure	Paper
Description	Abstract
Utility and Method of Use	--
Background / Novelty and Non-obviousness	Introduction / Background
Experimental Verification	Experiment / Results
Prototypes / Samples	--

# Disclosure Document

- Prior Arts
  - Citation to all pertinent prior
    - Patents
    - Publications
    - Other material prior arts
- Publications
  - Any previous public presentation / use
  - Offers for sales / sale
  - Planned publication / disclosure / public use within 12 months

# Disclosure Document

- Commercialization
  - Potential commercial uses
    - How might the invention be used in a commercial product or in a process for producing a product?
    - Are more experiments necessary before a company would find this invention of commercial interest?
    - Are you aware of any related commercial products that the invention would compete with or render obsolete? Please explain.
  - Potential licensees: companies (American and foreign) that might be interested in licensing the invention

# Disclosure Document

- Inventors
  - Inventors:
    - A brief description of the nature and extent of each inventor's contribution to the invention.
    - Specify whether each inventor's contribution was made to the conception, reduction to practice, or both phases of the process.
  - Co-authors
    - If co-authors of any of the publications related to this invention are not listed as having contributed, explain why they should not be considered for inventor status.

# Patent Controversy

- Example: Karmarkar algorithm for linear programming
  - Karmarkar was employed by AT&T
  - AT&T applied patent on Karmarkar's algorithm in 1985
  - Mathematicians: research based on it should be free
  - Granted in 1988 (expired 2006) (U.S. Patent 4,744,026): "Methods and apparatus for efficient resource allocation"
  - Being proved equivalent to other optimization algorithms
  - Limited commercial value to AT&T – built up the KORBX system, an 8-processor Alliant computer incorporating linear programming software, priced at US\$8.9 million each – only two were sold
  - Opponents: software patents ruined the positive interaction cycles that previously characterized the relationship between researchers in linear programming and industry, and specifically it isolated Karmarkar himself from the network of mathematical researchers in his field

# Working with RIT IPMO Office

- First thing to do: Contact RIT Intellectual Property Management Office
  - <http://www.rit.edu/research/ipmo/>

# Discussions