

## Tim Dwyer Patent Timeline

Crafted by Dedham High School history teacher Tim Dwyer while participating in a summer 2003 program for teachers at the Federal Reserve Bank of Boston, this comprehensive timeline chronicles milestones in the history of patenting in the U.S., starting with the nation's first patent law in 1790. Subsequent patent legislation and many "landmark" inventions are highlighted in this thorough compilation.

Key:

✚ This symbol indicates a patented invention.

*U.S. Constitution*, Article 1, Section 8:

“. . . 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. . .”

1790

The Patent Act of 1790 is the first patent law under the U.S. Constitution.

- The law, drafted in part by Thomas Jefferson, requires that all patent applications must include a model. (This requirement was relaxed in 1880 because of space limitations.)
- Patents are for 14 years with no extensions.
- Samuel Hopkins of Philadelphia receives the first patent for a new method of making potash.

1791

Thomas Jefferson authors a new patent bill that is never enacted into law. Under Jefferson's bill, the non-intentional, noncommercial use of a patented invention would not be considered an infringement.

1793

The Patent Act of 1793, a compromise between Jefferson and Alexander Hamilton, is passed.

- Only 57 patents were issued between the first patent law and this new one. (A trip to New York and later Philadelphia was required under the original legislation.)
- The new patent law sets up a Patent Board made up of the Attorney General, Secretary of War, and Secretary of State, whose office was charged with issuing patents if two-thirds of the Board so ordered.
- Thus, Jefferson, as Secretary of State, is charged with examining patent applications.

1793

- ❖ Eli Whitney invents and patents the cotton gin. He and his partner try to charge cotton farmers a 40% royalty on all cotton going through their patented machine, but farmers routinely infringe on Whitney's machines with their own unlicensed copies.

1800

An amendment to the Patent Act of 1793 allows foreigners who have been living in the U.S. for at least two years to seek patent protection. The new law also provides for treble damages in the case of patent infringement.

1829

- ❖ A typewriter is invented by W.A. Burt.

1831

- ❖ Cyrus McCormack invents the first successful mechanical reaper.

1834

- ❖ A corn planter is patented by Henry Blair, who is the second black person to receive a U.S. patent.

1835

- ❖ The wrench is patented by Solymon Merrick.

1836

The Patent Act of 1836 is enacted on July 2.

- The new law establishes a Patent Office headed by a Commissioner of Patents.
- Patents are for 14 years with the possibility of a 7-year extension upon the Commissioner's approval.
- Newly issued patents are to be distributed to libraries in every state so that the general public can access the new knowledge.

1836

A total of 10,000 patents have been issued since the original Patent Act of 1790.

1836

Henry Ellsworth is appointed the first Patent Commissioner. (His daughter, Annie Ellsworth, will have the privilege of deciding the famous first message, "What hath God wrought!" to be sent over Samuel Morse's telegraph in 1844.)

1836

On December 15, a fire sweeps through the Patent Office, destroying all patent drawings. (Some 2,845 patents will later be restored or reconstructed.)

1836

- ❖ Samuel Colt patents the revolver handgun.

1837

As of March 3, all patent applications must include two drawings, one of which will remain in the Patent Office and the other of which is to be attached to the granted patent that is returned to the applicant.

1837

❖ Samuel Morse invents the telegraph.

1838

❖ Samuel Morse invents Morse code.

1839

❖ Thaddeus Fairbanks invents platform scales.

1839

❖ Charles Goodyear invents rubber vulcanization, without which rubber would “rot” very much like food.

1840

During this year, 765 patent applications are filed.

1842

Ornamental designs are made patentable.

1842

❖ Joseph Dart builds the first grain elevator.

1845

❖ Peter Cooper, an early developer of railroads, gets the first American patent for gelatin. Fifty years later, cough syrup maker Pearl B. Wat takes Cooper’s patent and creates “Jell-O.”

1845

❖ Elias Howe invents a sewing machine.

1846

❖ Dr. William Morton of Massachusetts is the first dentist to use anesthesia during a tooth extraction.

1849

The Patent Office is transferred from the State Department to the Interior Department.

1849

❖ Walter Hunt invents the safety pin.

1849

- ❖ Abraham Lincoln patents “a device for buoying vessels over shoals.”

1850

Beginning in 1850, patents are issued only on Tuesdays.

1851

- ❖ Isaac Singer invents a sewing machine.

1854

Elias Howe sues and wins a patent infringement suit against Singer. Singer’s machine uses the same lockstitch as Howe’s. Singer must pay Howe a royalty on every machine sold. Howe’s income skyrockets from \$300 per year to \$200,000 per year, and he earns almost \$2,000,000 between 1854 and 1867. An even earlier inventor, Walter Hunt, had first used this lockstitch on a sewing machine that he invented, but Hunt had not pursued a patent because he thought his machine would put people out of work. Had Hunt bothered to patent his machine, Howe would have made nothing.

1855

- ❖ Isaac Singer patents the sewing machine motor.

1857

- ❖ George Pullman invents the Pullman Sleeping Car for trains.

1861

The Patent Act of 1836 is amended so as to make patents extend for 17 years from the date granted and to require the patented item to carry a label identifying it as being patented.

1861

- ❖ Elisha Otis patents the elevator safety brake, which makes for a safe and popular elevator.

1861

- ❖ Linus Yale invents the Yale (cylinder) lock.

1866

- ❖ Pierre Lallement, a Frenchman living in Connecticut, obtains the first U. S. patent for a bicycle.

1867

In this year alone, 21,276 patent applications are filed.

1868

- ❖ George Westinghouse invents airbrakes.

1870

The Patent Act is again amended so as to eliminate the requirement that a U.S. patent application must be submitted within 6 months of the granting of a foreign patent. Henceforth, the U.S patent will expire at the same time as the foreign patent, up to a term of 17 years.

1870

- ❖ Lallement's bicycle patent, having become valuable with the booming popularity of bicycles, is purchased by Calvin Witty. Witty pays \$10,000 to Lallement and \$10,000 to J. Carroll, Lallement's financial backer, after which all American makers of bicycles must pay Witty \$20 per bike.

1870

Since 1790, a total of 105,000 patents have been granted.

1872

- ❖ Elijah McCoy patents a self-regulating lubricator for trains. Because people want to buy the real item and not a cheaper imitation, people start asking for the "Real McCoy."

1873

- ❖ Joseph Glidden invents barbed wire.

1874

- ❖ C. Goodyear Jr. invents the shoe welt stitcher.

1876

- ❖ Alexander Graham Bell patents the telephone on February 14, just hours before Elisha Gray files a caveat claiming to be the first to invent the telephone. Bell will defend his patent in over 600 patent infringement suits, winning each of them. Bell offered to sell his patent rights to Western Union Telegraph only to have them decline the offer, one of the worst business decisions in history. (The story of how Bell beat Gray to the Patent Office resonates with all of us who have rushed to beat a deadline for a term paper or to file our taxes on April 15, but the story may be somewhat misleading. The United States and the Philippines are the only two nations that DO NOT have a "first to file" rule on who wins a disputed patent. Bell won his lawsuits primarily because he took meticulous note in the laboratory and could prove that he was the FIRST TO DEVELOP the telephone and thus entitled to the patent.)

1876

- ❖ Melville Bissell patents the carpet sweeper.

1877

- ❖ Thomas Edison invents the cylinder phonograph.

1878

- ❖ Colonel Albert A. Pope, having purchased the Witty/Lallement patent as well as several others, begins manufacturing Columbia Bicycles in Connecticut. All other American makers of bicycles and importers of bicycles must pay Pope a royalty for a number of years.

1879

- ❖ Thomas Edison invents the first commercially successful light bulb.

1880

Because of space limitations, it is determined that most patent applications will no longer require models.

1881

- ❖ Alexander Graham Bell invents an early form of a metal detector in an attempt to save the life of the mortally wounded American President James Garfield.

1884

- ❖ George Eastman (Kodak Film) patents paper-strip photographic film.

1887

The U. S. joins the Paris Convention for the Protection of Industrial Property.

1888

- ❖ John Boyd Dunlop patents a commercially successful pneumatic tire.

1888

- ❖ Nikola Tesla invents the AC electric motor and transformer.

1889

- ❖ Joshua Pusey invents and patents the matchbook, which he called "flexibles." Pusey is sued by the Diamond Match Company, which holds a somewhat different patent for matches. (Diamond's striker was on the outside, while Pusey's was on the inside.) Pusey wins the infringement suit and then accepts \$4,000 for the patent and a job offer from Diamond Match Company.

1893

Patent appeals are transferred to the Court of Appeals for the District of Columbia.

1893

- ❖ W.L. Judson invents the zipper.

1894

- ❖ Karl Benz gets a U. S. patent for his German motorcar.

1895

- ❖ Charles Duryea patents a gasoline automobile.

1896

- ❖ H. O'Sullivan invents the rubber heel.

1899

- ❖ I.R. Johnson patents the bicycle frame

1901

- ❖ King Camp Gillette invents the double-edged safety razor.

1901

- ❖ Peter Cooper Hewitt invents the fluorescent light bulb.

1902

- ❖ W. Carrier invents the air conditioner.

1903

- ❖ Edward Binney and Harold Smith co-invent children's crayons. They market a box of 8 crayons under the name "Crayola ®" for five cents. (The original colors are black, brown, blue, red, purple, orange, yellow, and green.)

1903

- ❖ Wilbur and Orville Wright invent the first gas-powered manned airplane.

1903

- ❖ Mary Anderson invents windshield wipers.

1904

- ❖ Thomas Sullivan invents the teabag. (Thomas Lipton will be the first to patent it.)

1906

- ❖ William Kellogg invents corn flakes.

1910

- ❖ Thomas Edison demonstrates the first talking motion picture.

1911

- ❖ Charles Franklin Kettering invents the first electrical car ignition system.

1911

The United States has issued a total of one million patents since 1790.

1912-1913

- ❖ Clarence Crane invents "Life Savers" candy. (The hot summer weather was melting his usual product, chocolate, in shipment. With a machine designed to make medicine pills, Crane makes a hard candy better able to withstand the summer heat.)

1914

- ❖ Garrett A. Morgan invents the Morgan gas mask. In the summer of 1916, Morgan will use his new mask to rescue 32 men trapped in a tunnel explosion 250 feet below Lake Erie.

1919

- ❖ The pop-up toaster is invented by Charles Strite.

1920-1921

- ❖ Earle Dickson invents the Band-Aid. Dickson created these bandages by combining surgical tape and a piece of gauze so that his wife could treat her frequent injuries in the kitchen while he was at work (at Johnson & Johnson).

1923

- ❖ Garrett A. Morgan invents a traffic signal after witnessing a terrible accident.

1923

- ❖ Clarence Birdseye invents frozen food.

1925

The Patent Office is moved to the Department of Commerce and Labor.

1926

- ❖ Robert Goddard of Worcester, Massachusetts, invents the liquid-fueled rocket.

1928

- ❖ Walter E. Diemer invents bubble gum. (Bubble gum is pink only because Diemer had no other food dye available that day.)

1928

- ❖ Jacob Schick patents the electric razor.

1929

Patent appeals are to be heard by the Court of Customs and Patent Appeals.

1929

- ❖ Paul Galvin invents the car radio.

1930

- ❖ Richard G. Drew patents Scotch tape.

1930

- ❖ Vannevar Bush invents the analog computer at MIT.

1931

The United States allows plants to be patented. The first patent is granted for a climbing rose bush.

1932

- ❖ Edwin Land invents Polaroid photography.

1932

- ❖ Fr. Julius Nieuwland, working with Dupont, invents Neoprene, the first synthetic rubber.

1935

- ❖ Wallace Carothers, working for Dupont, invents nylon.

1935

The United States has issued a total of 2,000,000 patents since 1790.

1937

- ❖ Chester F. Carlson, a law student, invents the photocopier. He patents his invention in 1939 and spends eight years looking for an investor to market his photocopier. After being turned down by the Army Signal Corps and IBM, Carlson convinces Haloid Company to market his photocopier. Haloid will change its name to Xerox Corporation.

1938

- ❖ Roy J. Plunkett invents Teflon.

1939

- ❖ Igor Sikorsky invents the first successful helicopter.

1942

- ❖ John Atanasoff and Clifford Berry build the first electronic digital computer.

1943

- ❖ James Wright, working for GE Laboratories, invents Silly Putty, which is used as a cheap synthetic rubber for caulking and molding. After WWII, a great deal of Silly Putty is left over. Peter Hodgson buys a large amount of it and sells it to children in plastic eggs. Silly Putty sells faster than any other toy in history, with \$6 million in sales in 1949 alone.

1946

- ❖ Percy Spencer, working for Raytheon, invents the microwave oven. Raytheon won't see the commercial possibilities of this invention until the 1960s when Raytheon acquires Amana Refrigeration Corporation. (Spencer, who has 150 patents to his credit, never graduated from grammar school.)

1947

- ❖ Bardeen, Brattain, and Shockley, working for Bell Labs, invent the transistor.

1948

- ❖ Walter Frederick Morrison and Warren Franscioni invent the Frisbee, which is named for the pie plates of the Frisbie Baking Corporation of Bridgeport, Connecticut.

1950

- ❖ Ralph Schneider invents the first credit card – a Diners Club card.

1951

- ❖ Charles Ginsburg invents the first videotape recorder (VTR).

1951

- ❖ Francis Davis invents power steering in Waltham, Massachusetts.

1951

- ❖ The first disposable diaper is patented by Marion Donovan.

1952

The Patent Act of 1952 updates patent language and provides a definition of "infringement."

1952

- ❖ Joseph Woodland and Bernard Silver patent the first bar code.

1952

- ❖ George Lerner patents Mr. Potato Head. He sells the patent to the Hassenfeld brothers of Rhode Island, who open a company called Hasbro.

1953

- ❖ Texas Instruments invents the transistor radio.

1954

- ❖ Chaplin, Fuller, and Pearson, working for Bell Labs, invent the first solar cell.

1955

- ❖ Lloyd Conover invents tetracycline.

1956

- ❖ Bette Nesmith Graham invents Liquid Paper, which she first calls “Mistake Out.” Graham had wanted to be an artist but had to find work as a secretary instead. She was not a good typist and “painted” over her frequent mistakes. Early on, she and her son would mix the secret formula in her kitchen and pour it into little bottles. In 1980, Graham will sell her Liquid Paper Corporation for \$47 million.

1957

- ❖ John Backus, working for IBM, invents the computer language, Fortran.

1958

- ❖ The modem is invented for American air defense communication systems.

1958

- ❖ Gordon Gould invents the laser (Light Amplification by Stimulated Emission of Radiation). Gould waits to file a patent until 1959, at which time he is refused. In 1977, he is finally granted his first laser patent.

1958

- ❖ Richard Knerr and Arthur Melin re-invent an ancient item and call it a “hula hoop.”

1959

- ❖ Jack Kilby and Robert Noyce, working independently, invent the microchip. Kilby will go on to invent the portable calculator in 1967. Noyce will go on to found the company called Intel.

1959

- ❖ Wilson Greatbatch invents the internal pacemaker.

1960

- ❖ GE develops halogen lamps.

1961

The United States has issued 3,000,000 patents since 1790.

1963

- ❖ The videodisc is invented.

1964

- ❖ John G Kemeny and Tom Kurtz invent the computer language, BASIC (Beginner’s All Purpose Symbolic Introduction Code).

1965

- ❖ James Faria and Robert Wright of Monsanto invent Astroturf ®.

1965

- ❖ James Russell, tired of the scratches on his vinyl records, invents the compact disc.

1965

- ❖ Stephanie Louise Kwolek, working for DuPont Company, invents Kevlar ®.

1967

- ❖ Jack Kilby invents the handheld calculator.

1968

- ❖ Douglas Engelbart invents the computer mouse.

1968

- ❖ Robert Dennard invents RAM (random access memory).

1969

- ❖ The U.S. military and the Defense Department develop ARPANET, a precursor of the Internet.

1969

- ❖ Don Wetzel, George Chastain, and Tom Barnes invent the first modern, commercially usable ATM after Wetzel tires of waiting in long bank lines in Dallas, Texas.

1970

The Patent Cooperation Treaty allows a citizen of one of the member nations to file one application for patent protection in all signer countries.

1970

- ❖ Alan Shugart invents the floppy disc at IBM.

1971

- ❖ James Fergason invents the LCD, liquid-crystal display.

1971

- ❖ Faggin, Hoff, and Mazor, of Intel, invent the microprocessor.

1972

- ❖ Seymour Rubenstein and Rob Barnaby invent the word processor.

1972

- ❖ Nolan Bushnell invents the first video game, Pong.

1974

- ❖ Arthur Fry invents the Post-it-Note after becoming frustrated that the bookmarks in his church choir hymnal keep falling out.

1975

- ❖ Gary Starkweather of Xerox invents the laser printer.

1975

- ❖ The push-through tab on drink cans is invented by the Falls City Brewing Company of Louisville, Kentucky.

1975

The United States has issued 4,000,000 patents since 1790.

1977

- ❖ Raymond V. Damadian invents MRI, magnetic resonance imaging.

1979

- ❖ Scott Olson invents roller blades.

1981

- ❖ Microsoft invents MS-DOS.

1981

- ❖ The first IBM-PC is invented.

1983

- ❖ The Apple Lisa, a graphic user interface for computers, is invented.

1984

- ❖ The CD-ROM is invented.

1984

- ❖ The Apple Macintosh ® is invented.

1985

- ❖ The Windows ® program is invented at Microsoft.

1988

- ❖ Ray Fuller at Eli Lilly Company, invents Prozac ®.

1988

- ❖ Working at Harvard and the University of California, San Francisco, Philip Leder and Timothy Stewart get the first patent for a genetically engineered animal, the OncoMouse.

1990

- ❖ Tim Berners-Lee creates the World Wide Web/Internet protocol (HTTP) and WWW language (HTML).

1991

The United States has issued 5,000,000 patents since 1790.

1993

- ❖ The Pentium processor is invented.

1994

- ❖ The HIV protease inhibitor is invented.

1995

- ❖ The JAVA computer language is invented.

1995

In order to bring American practices into conformity with the General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO) Trade Related Aspects of Intellectual Property (TRIPS), American patents will now be issued for 20 years as dated from the application.

1999

The American Inventors Protection Act changes fee structures and allows certain defenses in infringement suits. The Act also provides for a time extension for patent protection if delays occur in granting the application.

2002

Close to 155,000 patents are issued in 2002. This is a rate of one patent being granted almost every three minutes.

## Sources:

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History of the Bicycle

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The Inventive Thinking Curriculum Project

<http://www.uspto.gov/web/offices/ac/ahrpa/opa/projxl/invthink/invthink.htm>

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[http://www.invent.org/hall\\_of\\_fame/136.html](http://www.invent.org/hall_of_fame/136.html)

Invention of Silly Putty

<http://www.ideafinder.com/history/inventions/story020.htm>

More about Bell: A Family Affair

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<http://www.law.cornell.edu/topics/patent.html>

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