The MVCC Women's History Month Committee celebrates:

Toaster Ovens to White Out: A Survey of American Women Inventors

Presented by:
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Thursday, March 25, 2004
11:00 a.m., PH 212

Test your knowledge!

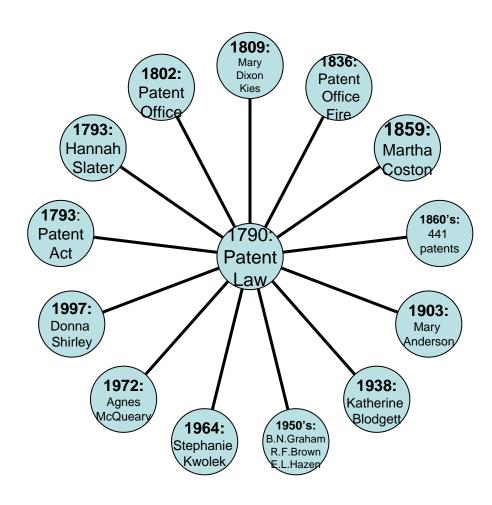
Match the invention with the inventor

- Bette Nesmith Graham
- Donna Shirley
- Stephanie Kwolek
- Agnes McQueary
- Mary Anderson
- Martha Coston
- Rachel Fuller Brown and Elizabeth Lee Hazen
- Lillian Moller Gilbreth
- Katherine Burr Blodgett

- Maritime Signal Flare
- Bounce Dryer Sheets
- Nystatin (antibiotic)
- Kevlar
- Step-on Trash Container
- Windshield Wiper
- Mars Rover "Sojourner Truth"
- Invisible, non-reflective glass
- Liquid Paper/WhiteOut

A Cycle of Invention in America

(graph designed by Colleen Kehoe-Robinson)



Historical Timeline

- The first United States patent law was signed on April 10,1790 by President George Washington. The law required that a Patent Board comprised of the Secretary of State, the Secretary of War and the Attorney General examine the applications.
- The Patent Act of 1793 (enacted by Congress on **February 21, 1793**) changed the examination procedure to a registration process administered through the Department of State.(Brown 2) The Patent Act did not discriminate between men and women, so legally women had the privileges of owning the rights to their "intellectual property"--their writings and discoveries. However, social, economic and psychological factors contributed to the delay in women's pursuit of their patent rights. For example, while single women could exercise their patent rights in any way, married women encountered laws that transferred ownership of their property to their husbands, or gave husbands the power to decide how the property would be distributed. (Macdonald 4-12)
- Hannah Slater in 1793 was the first woman awarded a patent in the United States for her cotton sewing thread. (Vare, 1).
- By **1802** there was such an overwhelming number of applicants for patents that a separate Patent Office was created within the State Department.
- In 1809 Mary Dixon Kies from Killingly, Connecticut became the first woman to receive a
 patent from the new Patent Office. Kies patented a process of weaving straw with silk or
 thread.
- In 1836 fire in the Blodgett's Hotel destroyed all of the Patent Office's records.
- Towards the end of the 1860's 441 patents were issued to women. (Macdonald 4-12).
- Forward to 1977: 2.6 percent of all U.S. patents were granted to women inventors; and in 1998 10.3 percent of all U.S. patents were granted to women inventors.
 http://inventors.about.com/library/inventors/blkidprimer6_12w4.htm

Quick facts:

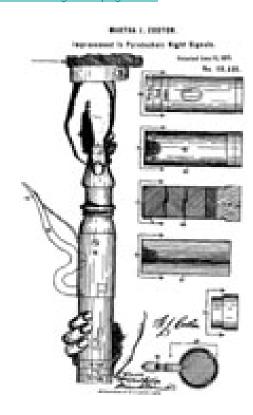
- The majority of the U.S.woman-inventor patents are in the chemical technologies.
- Women from California, New York, and New Jersey accounted for nearly 35 percent of the patents granted from 1977 to 1996.

http://inventors.about.com/library/inventors/blkidprimer6_12w4.htm

Martha Coston

(b. 1826)

http://www.fhwa.dot.gov/wit/page1.htm



- In 1859, Martha J. Coston developed a maritime signal flare using pyrotechnics. The flares were used by the U.S. Navy and the navies of many European countries to communicate with and rescue shipwreck victims.
 - (http://www.invent.org/hall_of_fame/75.html)
- Her late husband had first undertaken the project in the 1830's, but after his death Coston was left to raise four children and she committed to bringing the project to fruition. At the beginning of the Civil War the American rights to the flares were purchased by the U.S.Government for \$20,000 and they made a deal with Coston to build the flares.
- Interestingly, Coston chose to receive the patent for the flares as the "administrix" of her late husband's estate even though she had herself brought the project to life. (Macdonald 16-18).

Mary Anderson

1866-1953

http://www.julianos.com/imagescat/billet_windshield_wipers.gif



- In November, 1903 Anderson's first patent for a window cleaning tool was granted, and by 1916 windshield wipers were standard equipment for American automobiles.
 - (http://inventors.about.com/library/inventors/blanderson.htm)
- The inspiration for the Birmingham, Alabama native's idea was her sightseeing tour of New York City in an electric streetcar that had snow piling up on the windshield. This led the streetcar conductor to hazardly lean out and clear away the snow with his hands.
- In 1953 she died in her Tennessee summer home at the age of 87. (Vare 20-21)

Katherine Burr Blodgett

(1898 - 1979)

http://www.primaryeyecarepa.com/images/eyeglasses.jpg



- "Katherine Blodgett received U.S.
 patent #2,220,660 on March 16, 1938
 for the "Film Structure and Method of
 Preparation" for invisible, nonreflective
 glass. Among the many practical uses
 that this development has been used
 for includes limiting distortion in
 eyeglasses, microscopes, telescopes,
 camera and projector lenses.
- A native of Schenectady, NY, Blodgett was the first female scientist hired by General Electric's Research Laboratory in Schenectady (1917). She also has the distinction of being the first woman to earn a Ph.D. in Physics from Cambridge University (1926) and she was the first woman to receive the Photographic Society of America Award.

http://inventors.about.com/library/inventors/bl_Katherine_Blodgett.htm

Lillian Moller Gilbreth

(1878-1972)

http://www.webster.edu/~woolflm/trash2.jpg



- Among the many kitchen appliances that this ergonomic trailblazer patented is the trash can with a foot-pedal lid-opener.
- Her classic Time & Motion Studies highlighted work simplification and industrial efficiency.

http://inventors.about.com/library/inventors/blGilbreth.htm

 Her family (which included twelve children) was celebrated in Myrna Loy and Clifton Webb's film Cheaper by the Dozen and the sequel Belles on Their Toes. (1950 and 1952). (Vare 54).

Rachel Fuller Brown (1898 -1980) and Elizabeth Lee Hazen (1885-1975)

http://acmeglobal.com/AcmeLabs/ProdPics/Nystat-ointment.jpg



Rachel Fuller Brown and Elizabeth Lee Hazen were researchers for the New York State Department of Health who developed the antifungal antibiotic nystatin. Brown was based in Albany and Hazen was based in New York. Collaborating through the U.S. mail they shared tests and samples. Their antibiotic nystatin was named for the New York State Department of Health, and in 1954 following Food and Drug Administration approval it was made available.

Among the uses for Nystatin are curing fungal infections of the skin, mouth, throat, and intestinal tract, as well as treating Dutch elm disease and saving water-damaged works of art from molds.

http://www.invent.org/hall of fame/75.html

Bette Nesmith Graham

(1922-1980)



As an Executive Secretary at Texas Bank and Trust in 1950's Dallas, Bette Nesmith used her art background to cover up her typing errors on IBM's new carbon-film ribbon electric typewriters (using tempera water-based paint). Consulting with her son Michael's chemistry teacher she devised a formula for optimum coverage and drying time. Her son Michael would become a successful member of the Monkees.

http://inventors.about.com/library/inventors/blliquid_paper.htm

Stephanie L. Kwolek

(1923-)

http://www.lascointl.com/vests/01.jpg



- In 1964 Pennsylvania native and DuPont chemist Stephanie Kwolek was credited with the invention of Kevlar, a synthetic material which is five times as strong as steel.
- This fiber is the main ingredient in bulletproof vests. Kevlar is resistant to wear, corrosion and flame. Kevlar is used also in protective clothing, aircraft, and space vehicles. (Vare, 7-8).
- After graduating from Carnegie Institute of Technology (now Carnegie-Mellon) in 1946, Kwolek started her career at E.I. Du Pont de Nemours and Company in Buffalo, NY.
- Among Kwolek's most notable awards are the National Medal of Technology which President Bill Clinton presented to her in 1996, and she is the fourth woman to be inducted into the National Inventor's Hall of Fame. (Zierdt-Warshaw, 177).

Agnes McQueary

http://images.evalu8.org/images/bounce.jpg



Professional laundress Alice McQueary owns a patent for improving Proctor and Gamble chemist Conrad Gaiser's formula for Bounce heatactivated fabric-softener sheets. During the testing of Proctor and Gamble's new fabric softener sheets, McQueary noticed that the dryer's air vent was often blocked by the sheets, causing the dryer to shut off. She experimented with cutting slits in the sheets which allowed air to flow freely through the dryer's vent.(Vare 42-43)

Donna Shirley

(1942-)

(http://www.jpl.nasa.gov/releases/97/pfstamp.html)



- In 1997 her invention the Sojourner Truth
 Mars Rover became the first autonomous
 vehicle to ride across another planet. Shirley
 and her NASA team's achievement was
 celebrated with a stamp.
 (Vare 153-6)
- Donna Shirley's parents gave her flying lessons for her 15th birthday; by her 16th birthday she had earned her pilot's license and prior to graduation from high school she was flying solo. Changing her major from Aeronautical Studies to Writing after being discouraged by a professor at the University of Oklahoma, Norman she returned to the University after deciding she did not want to pursue her technical writing career. She earned a degree in Aerospace Engineering in 1965. Later she became Director of the Mars Exploration Program at the Jet Propulsion Laboratory. (Zierdt-Warshaw 285)
- She retired in August, 1998 and her autobiography Managing Martians details the exploration of the Sojourner Truth. (http://www.managingcreativity.com)

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