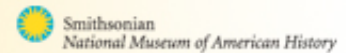




# Prototype

November

The Lemelson Center  
for the Study of Invention & Innovation



## Jerome Lemelson: Toying with Invention

Jerome Lemelson's inventive legacy touches nearly every facet of our everyday lives. One of America's most prolific inventors, he earned more than 600 patents for inventions relating to automated manufacturing systems, bar code readers, automatic teller machines, cordless phones, cassette players, camcorders, fax machines, personal computers, machine vision, and medical technology. What may be surprising, though, is that about 10 percent of those patents describe toys—inflatable toys, jumping toys, toys with propellers, toys that run on tracks, target games, dolls, and more. In fact, Lemelson's first patent, issued in 1953, was for a new kind of propeller beanie.

[Read More...](#)



## **Notes From the Director**

Invention is busting out all over—at the National Museum of American History, that is. To begin with, the Museum that is home to the Lemelson Center is reinventing itself. When it opens its doors on November 21 after an extensive two-year renovation it will not only look radically different but it will spotlight invention and innovation with the introduction of several new Lemelson Center exhibition spaces.

This is actually the Museum of American History's second act of reinvention. When it first opened in 1964 it was known as the Museum of History and Technology. A product of postwar scientific and technological euphoria, it was conceived as a "Palace of Progress," a shrine to technology and invention as pillars of economic progress and democracy. After the turbulent 1960s, historians and the public began to reevaluate this notion of pure technological progress and the Museum adopted a more contextual view, placing science, technology, and invention within broader interpretations of American history. Hence, the change of the Museum's name in 1980. Conceived in this broader context, the Lemelson Center places invention and innovation *within* rather than outside of American history, exploring their intimate relationships with other facets of society and culture.

The Lemelson Center eagerly anticipates being part of the Museum's latest transformation with the opening of our new exhibition spaces. The centerpiece will be the Lemelson Hall of Invention, which will feature as its inaugural presentation the Center's award-winning interactive exhibition, *Invention at Play*. Along this same playful line will be smaller exhibitions on toys and sports inventions.

When our benefactors Jerome and his wife Dorothy Lemelson first contacted the

Smithsonian, they came out of a desire to increase educational opportunities for young people. The Museum's former Hands On Science Center particularly intrigued them. With their continuing support, this spacious interactive area, now renamed Spark!Lab, will help kids and their families learn about the history and process of invention.

Have a look at our website, [invention.smithsonian.org](http://invention.smithsonian.org), to find out more about our new exhibits and programs. Then come and join us at the Lemelson Center as we undertake our own process of reinvention.

Until next month,

*Art Molella*

Jerome and Dorothy Lemelson Director

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### Have You Seen?

What does invention have to do with playing sports? You might be surprised! The desire to improve the human body's performance in sports has often been a catalyst for new inventions. For example, in the United States, interest in the sport of running took off after the first Boston Marathon in 1897. Then, as now, runners used technology to stay competitive. You can learn more about sports inventions, as well as other wearable and implantable inventions for the body that are changing the way we live and how we think of ourselves as human beings, on our *Inventing Ourselves* website at [invention.smithsonian.org/centerpieces/inventingourselves/](http://invention.smithsonian.org/centerpieces/inventingourselves/).

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### Trivia Challenge

In each edition of *Prototype*, we'll offer a question about an invention or inventor that you and your friends and family can try to answer. Sometimes the answer can be found on the Lemelson Center's website, where you can also learn a little more about the subject. Email your answer to us at [prototype@si.edu](mailto:prototype@si.edu) along with your name and mailing address. Each month we'll select winners randomly to receive a small prize from the Center.

Congratulations to Kaitlyn B. of Salisbury, Maryland, and Lance S. of Smithtown, New York, who (among others) knew that the machine to make square-bottom paper bags, frequency hopping, the automatic dishwasher, and Scotchgard were all invented by women. Kaitlyn and Lance will each receive a year's subscription to *Smithsonian* magazine. And thank you to everyone who entered.

**This month's question:** Who invented the ubiquitous Post-it note—and what motivated the inventor to create it?

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## From the Archives

By obtaining, preserving, and increasing access to the records and artifacts of invention, the Lemelson Center is better able to help people understand the significant and varied role inventors have played in American history. S. Newman Darby (1928- ) embodies the classic American invention story—a passion that led to the development of a product, the sailboard, which would become known as the windsurfer and ultimately launch a worldwide sport.

Darby is recognized as the first person in the United States to conceive of connecting a handheld sail rig fastened with a universal joint to a floating platform for recreational use. He called it sailboarding in 1965, when he published his designs in *Popular Science Monthly* magazine. Although he and his brothers Ronald and Kenneth began manufacturing the boards through their company Darby Industries, they never applied for a patent.

Darby was born in West Pittston, Pennsylvania. A sign painter and artist, like his father Sidney Darby, he studied drafting at the Pennsylvania State University extension school where he took chemistry, business, art, and photography courses for one year. The sailboard developed out of Darby's experiments with a personal pontoon catamaran, each hull being big enough for one foot and designed to be operated with a handheld sail and no rudder. By 1964 he had designed a universal joint that connected a mast to a flat-bottom sailing scow. This board had a centerboard, tail fin, and kite-shaped free sail. Early tests were conducted on Trailwood Lake and the Susquehanna River, near West Pittston.

Today sailboarding is known as windsurfing. The name is adopted from Windsurfer International, a company Hoyle Schweitzer and Jim Drake established on the basis of a patent granted to them in 1970 for a "wind-propelled apparatus." In all essential qualities, their claims duplicated Newman Darby's earlier work.

Although he was aware of the growth of the sport and the profits flowing into Windsurfer International through its licensing activities, Darby was unable to mount a legal challenge to Schweitzer. His priority in the invention of the sport was overlooked and almost forgotten. In the late 1970s, Mistral, a Swiss manufacturer being sued by Windsurfer International in Germany, located Darby and presented his "prior art" as a defense. In the early 1980s, courts in the United States were asked to rule on the validity of the Windsurfer International patent. Newman Darby's prior art was at the center of the controversies. The court voided Windsurfer's original patent and Schweitzer was forced to apply for a reissue based on severely limited claims. He lost the use of "windsurfer" as a trademark. Schweitzer retained the reissued patent through further challenges until it expired in 1987. The example of Newman Darby has become a textbook case of the importance of thorough searches for "prior art" by patent attorneys.

The S. Newman Darby Windsurfing Collection, 1946–1998, documents the body of Newman Darby's inventive output as well as the development of the windsurfing industry. It consists of sketches, mechanical drawings, plans, patent specifications, legal documents, photographs, correspondence, notebooks, clippings, periodicals, an 8 mm film, and a videocassette. The collection is particularly rich in the material related to the development of the sailboard, including Darby's personal memoirs. It documents the processes of invention and marketing of new devices and is evidence of the full range of S. Newman Darby's imagination, life, and

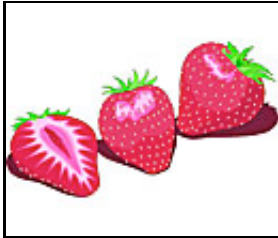
career.

You can learn more about Newman Darby and his invention in the *Invention at Play* exhibition, opening on November 21 in the Museum's new Lemelson Hall of Invention. You can even hone your skills on a full-size windsurfer simulator! But if you can't come to Washington, you can still see Darby's story at [inventionatplay.org](http://inventionatplay.org).

—Alison Oswald

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### **Inventive Ideas for Schools and Families**

Ever wonder what DNA looks like? Well, here's an experiment that you can do at home to find out! This and lots of other experiments will be offered at the Lemelson Center's brand new hands-on center, Spark!Lab, opening in the National Museum of American History on November 21, 2008. Spark!Lab has activities to engage scientists and inventors of all ages. Now, about that DNA ...

Here's what you need:

- a heavy-duty "zip lock" bag
- 3 fresh strawberries
- 1 pinch of table salt
- 8 drops of shampoo (without conditioner)
- a strainer
- ice-cold isopropyl rubbing alcohol
- a small clear glass or test tube
- a large paper clip, straightened out

Here's what you do:

- Wash the strawberries and remove the sepals (the green leaves).
- Place the strawberries in a zip lock plastic bag and crush it with your fist.
- Add the salt and shampoo to the mashed strawberry mixture in the bag, zip the bag, and squeeze it in your hands for 1 minute.
- Place the strainer over the small glass.
- Pour the strawberry-shampoo mixture through the strainer.
- Slowly pour ice-cold rubbing alcohol into the glass, until it is about half full and forms a separate layer on top of the strawberry filtrate.
- Keep the glass still at eye level; do not shake it. Watch what happens. DNA will begin to appear where the alcohol and filtrate layer meet.
- Carefully scoop out the DNA with the straightened end of the paper clip. What does the DNA look like?
- Touch the DNA. What does it feel like?
- Discard the mashed strawberries and solution. Wash your equipment and clean your experiment area.
- Wash your hands!

So ... what just happened? [Download the experiment](#) to find out!

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### **Research Opportunities at the Lemelson Center**

The Lemelson Center offers two ways for researchers to receive financial support while using the invention-related collections at the Smithsonian. The Fellowship Program provides a prorated stipend for up to ten weeks and is currently accepting applications until January 15, 2009. The Travel to Collections Award offers researchers a travel allowance and a stipend for up to twenty-one days and accepts applications year-round.

Since 1995, the Lemelson Center has supported a wide variety of research topics that range from toys to medical devices, automobiles, and the telegraph. The collections are particularly strong in the history of technology, invention, and innovation in the 19th and 20th centuries. Both individuals and companies are featured in subject areas including railroads, pianos, television, radio, plastics, ivory, and sports equipment. The collections also include oral and video documentation of contemporary inventors, covering inventions in a variety of fields, including health care, consumer electronics, and games.

For more information about these programs, including deadlines, eligibility, and application forms and procedures, please visit [invention.smithsonian.org/research\\_opps/](http://invention.smithsonian.org/research_opps/).

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### **Contact Us**

General Smithsonian Visitor Information: 202-633-1000

or see more online:

[Lemelson Center website](#)

[National Museum of American History Frequently Asked Questions](#)

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