

The Business Monthly

The Business Newspaper of Howard & Anne Arundel Counties and BWI Business District



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20 Unique Maryland Inventions

By Carrie Oleynik, STAFF WRITER

1 Two inventions are better than one.

Henry Blair hit a double. Born in Montgomery County, he received his first patent in 1834 for his invention of the corn seed planter, which allowed farmers to plant corn much faster with much less labor. Two years later, Blair received another patent for the invention of the cotton planter, built similarly to the corn planter. It was a truly historical occasion; Blair is noted as only the second African-American to receive a patent in the U.S.

2 Edison's 'Eighth Wonder of the World'

Not long after German clockmaker Ottmar Mergenthaler, along with his step-cousin August Hahl, moved to Baltimore in the late 1800s, he created an invention that would forever change the newspaper business. On July 3, 1886, Mergenthaler's 7-foot-tall, 6-foot-wide and 6-foot-deep Linotype machine was installed in the printing office of the New York Tribune. Not only was the Linotype used immediately to print the daily paper and a large book, it also became used in every state within the first 20 years of its inception.

3 A Baltimore -submarine

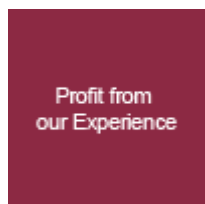
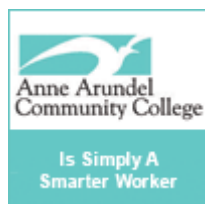
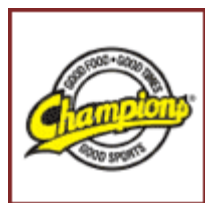
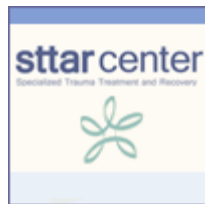
In 1894, engineer Simon Lake created the Argonaut Junior at the Columbia Iron Works Shipyard in Baltimore's Locust Point neighborhood. Triangular and made of yellow pine, the submarine's main features included an air lock and three wheels to keep it from getting stuck to the sea bottom. Its success led to the development of the first submarine to operate successfully in the open sea.

4 The fast track to a glowing complexion

In an attempt to create a greaseless cream to remedy sunburn, Dr. George Bunting developed the formula to what we know as Noxzema. Invented and sold at his pharmacy on West North Avenue in Baltimore, Bunting's original formula included a blend of clove oil, eucalyptus oil, lime water, menthol and camphor. It wasn't long after a customer realized that the cream was a remedy for eczema that the demand for the tiny blue bottles skyrocketed. The first factory for the Noxzema Chemical Company was located at 102 Lafayette Avenue in Baltimore in 1920.

A sample of Bunting's Noxzema, which debuted in Baltimore, can be seen in the Baltimore Museum of Industry. Photo courtesy of Baltimore Museum of Industry

5 A not so slippery slope



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After aircraft engineer Howard Head went skiing for the first time in 1947, he knew he had to do something about the clumsy, heavy wooden skis that made it hard for him as a beginner. In order to develop lighter and more efficient skis, he left his aviation job at an early U.S. aircraft company to live off his earnings from poker so he could develop the first set of aluminum skis.

Head's aluminum skis are displayed at the Baltimore Museum of Industry. Photo courtesy of Baltimore Museum of Industry

6 Pest control on the fly

It all started as a research experiment in 1969 when Beltsville, Maryland-based biotech company Spherix was selected by NASA to equip the Viking 1 and Viking 2 landers to test for microorganisms in Martian soil. An accidental discovery made during microbial life detection testing ultimately led to the 1996 development of FlyCracker, an environmentally-friendly, completely biodegradable pesticide alternative that does not harm humans or animals.

7 Setting a new pace

Incorporating multiple NASA technologies, advanced cardiac pacemakers from Pacesetter Systems Inc. include a long-life rechargeable battery, super-miniaturized electronics and two-way communications technology that allows physicians to reprogram an implanted pacemaker without surgery. This pacemaker, known as the Trilogy line, represents the fourth-generation advancement of the unit initially developed in the 1970s by the NASA Goddard Space Flight Center, The Johns Hopkins Applied Physics Laboratory and Pacesetter.

8 A way to beat the heat

It was the late 1980s when Goddard Space Flight Center teamed up with The Johns Hopkins University in Baltimore to develop the Ingestible Thermal Monitoring System to monitor the body temperature of astronauts during space flight. Incorporating a number of space technologies including wireless telemetry (or signal transmission), micro-miniaturized circuitry, sensors and batteries, the "thermometer pill" went commercial in 1988 and is now widely accepted as an essential tool to detect high body temperature during training and sporting events.

9 The golfer's dream come true

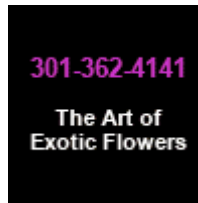
Former Goddard physicist David Pelz developed "The Teacher" through his Laurel, Maryland-based company, Preceptor Golf Ltd., to help golfers consistently stroke the golf ball with precision. Patented in the mid 1990s, he invented "The Teacher" using NASA-acquired expertise in energy transfer.

10 Intelligent highway system

Led by Columbia's AlliedSignal Services Corporation, a team of 60 specialized companies developed the Transportation Guidance System (TransGuide), a safer, more efficient highway system. TransGuide was put into place by the Texas Department of Transportation in July 1995.

11 Forming a global network

Goddard scientists developed Micro Pulse Lidar (MPL)



technology to fill NASA's need for a practical, ground-based tool to calibrate and validate satellite-based measurements of clouds and aerosols in the late 1990s. Sales of the device grew worldwide through licenses to Maryland-based Science & Engineering Services Inc. and Sigma Space Corporation, creating a catalyst for the formation of a global network of systems, MPLNET.



12 Looks like rain?

Meet DirectMet, a direct-readout geostationary operational environmental satellite receiver and workstation for processing and analysis of satellite imagery. Brought to surface in 1999 by Global Science & Technology Inc. of Greenbelt, the invention is used worldwide by professional meteorologists and employed extensively throughout the Caribbean and Pacific to support hurricane tracking.



13 From Earth to Mars

Through an exclusive license from the NASA Goddard Space Flight Center, Microcosm Inc. of Columbia produced the portable FarField-2 laser for field applications that require high-power pulsed illumination. Developed in early 2005 following NASA's need for laser instruments to study Earth and the distant shores of Mars, FarField-2's compact design allows for a wide range of power supplies and makes it an ideal portable laser for field applications.



14 More than meets the eye

Started in 2005, Bartron Medical Imaging of Largo is using Goddard-developed software as a key technology in its Med-Seg imaging device, analyzing information ranging from digital X-rays, soft-tissue scans, mammograms, ultrasounds and MRI images to CT scans. The software also helps reveal details that cannot be seen to the naked eye.

Auto Details On Wheels
-Mobile Car Detailing-



15 Testing, 1 ... 2 ... 3

BCG Wireless, based outside Baltimore, is continuing a three-year technology transfer relationship with Goddard Space Flight Center to apply the Hilbert-Huang Transform (HHT) technology to radio frequency signals in the development of a device that will demonstrate the signal-cleaning capabilities of HHT in real-time. By working to improve the detected signal, better reception and more accurate signal transmission will be received.



16 Forensics goes virtual

Through a grant from the National Science Foundation and funding from the CyberWATCH consortium, the University of Maryland's Office of Information Technology is creating a regional Digital Forensics Lab for digital forensics education and investigations by CyberWATCH universities and community colleges. The lab will consist of virtual machines running on hardware hosted at the University of Maryland, College Park. The lab is expected to launch this October.



Robert Maxwell of the Office of Information Technology works on configuring some of the hardware that supports a regional Digital Forensics Lab to be based at the University of Maryland, College Park. Photo courtesy of the University of Maryland Office of Information Technology

17 Another double--hitter

A few years ago, University of Maryland, Baltimore County (UMBC), mechanical engineer Uri Tasch developed a patent for an automated technology to detect lameness in dairy cattle earlier than the trained human eye. His latest invention has adapted a similar capability, only it targets mice and rats. The twist is that the new technology shows promising results in detecting the early onset of ALS or Lou Gehrig's disease in rats.

18 Plants are going greener.

Plant Sensory Systems LLC is working to produce plants that require less nitrogen fertilizer to help prevent runoff that damages the Chesapeake Bay, while also looking at plants as biofuel sources. Headquartered at bwtech@UMBC, Plant Sensory Systems was established in 2007.

19 A robot to remove brain tumors

Researchers at the University of Maryland and the University of Maryland School of Medicine at Baltimore have developed a robot that would allow a neurosurgeon the ability to remove brain tumors and other intracranial masses from human patients in a minimally invasive manner. This invention, among several University of Maryland Inventions of the Year for 2007, was awaiting a patent at the time of its recognition.

20 Captured from all directions

Researchers at the University of Maryland have developed an audio camera to create a real-time audio image of sound arriving from all directions to a specific point - the location of the camera. Audio images are created using a spherical microphone array "beam former" and are then projected onto a corresponding video image using standard computer vision techniques. Another University of Maryland Invention of the Year for 2007, this invention also had a patent pending at the time of its award.