

ORANGE COUNTY REGIONAL  
HISTORY CENTER

*Celebrating*

AFRICAN AMERICAN  
INVENTORS &  
INNOVATORS



# We'd like to introduce you to some people who truly made history

The Orange County Regional History Center is proud to present these stories of African American inventors and innovators. Some of them lived a long time ago, and some are still working among us. Some grew up or worked in Central Florida. All used their creativity to improve the lives of Americans in every walk of life. We hope these brief biographies will inspire you to learn even more about them, and about the many other African American trailblazers throughout our history.

*Michael Perkins*  
*History Center Manager*

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# JANET EMERSON BASHEN

Born in Ohio, 1957

## Software inventor who blazed trails in business

Janet Emerson Bashen is the first African American woman to hold a software patent. In 1994, she began her own business, working at her kitchen table in her Texas home. She wanted to help people who had not been treated fairly at their jobs because of their skin color or religion, or other reasons. Now the Bashen Corporation is well known across the country. It has helped thousands of people, and Janet has received many honors.

- Janet was born in Ohio.
- Her family moved to Huntsville in Alabama when she was a little girl.
- Her dad worked hard as a garbage collector.
- Her mom was the first African American emergency-room nurse in Huntsville.
- Janet studied law and government in college in Texas, where she still lives.
- Her web-based software invention, LinkLine, made it much easier to make and track equal employment opportunity claims.

**“My successes and failures make me who I am, and who I am is a black woman raised in the South by working-class parents who tried to give me a better life by fostering a fervent commitment to succeed.”**



# DR. PATRICIA BATH

Born in New York City, 1942

## Doctor and laser scientist who helped people see better

In 1986, Dr. Patricia Bath invented a laser tool, the Laserphaco Probe, that has helped improve or restore vision in patients around the world. She was the first African American woman doctor to receive a medical patent.

**“The ability to restore sight is the ultimate reward.”**

Patricia also has worked hard to bring eye care to people who did not have much money to visit doctors and get treatment. She co-founded the American Institute for the Prevention of Blindness, which is dedicated to the idea that “eyesight is a basic human right.”

- Patricia was born in Harlem, in New York City, where she grew up.
- Her dad was the first black motorman on the New York subway system.
- Her interest in science grew after her mom bought her a chemistry set.
- Patricia completed high school in two years. She finished medical school in 1968.
- She was the first African American doctor to complete a residency in ophthalmology. An ophthalmologist is a doctor who treats eye problems.



# MIRIAM BENJAMIN

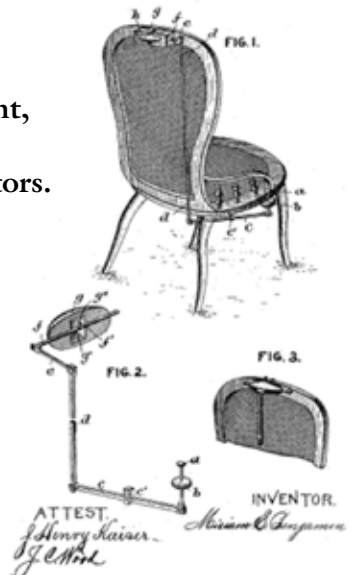
Born in South Carolina, 1861

## Teacher whose signaling invention was used in Congress

Miriam Benjamin was a schoolteacher in Washington, D.C., more than 100 years ago when she got the idea for her invention. Some restaurants in the city were large, and Miriam wanted to make it easier for people to call a waiter without having to wave or snap their fingers. She designed a chair with a button to buzz the waiters' station, and a light to show which guest needed help. Miriam's signal system was even used in the U.S. House of Representatives.

- Miriam was born in Charleston during the Civil War, but her family moved to Boston when she was 12.
- Miriam was the second African American woman to receive a patent, in 1888.
- Miriam's brothers were also inventors. Her brother Edgar invented the bicycle clip.
- Her invention led the way for the buttons used to call flight attendants on airplanes.

M. E. BENJAMIN.  
OOB AND SIGNAL CHAIR FOR HOTELS, &c.  
No. 386,389. Patented July 17, 1888.



# HENRY BLAIR

Born in Maryland, 1807

## Farmer who helped plant corn and cotton seeds much faster

**H**enry Blair was the second African American to be issued a patent, in 1834. He was a farmer in Maryland a long time ago – he was born more than 200 years ago. Henry couldn't read or write, but he was very smart. He figured out how to make a machine that allowed farmers to plant corn seeds much faster and with less labor. He estimated that his invention did the work of eight men.

- Henry was born in Glen Morgan, Maryland, and he died in 1860, before the Civil War.
- Henry couldn't read and write. When he applied for his patent, he signed with an X.
- He also received a patent for a cotton planter.

Henry Blair claimed his seed-planting machine could do the work of eight men.



# SARAH BOONE

Born in North Carolina, 1832

## Dressmaker who made it easier to iron clothes

Sarah Boone was a dressmaker at a time when women's clothes had fancy long sleeves and long, full skirts. Ironing fabric was very important in her work, and the ironing boards she used did not work as well as she wanted – especially when it came to ironing long sleeves. Sarah created a special ironing board that was narrow and curved so that a sleeve could be fitted over it. She received a patent for her ironing board in 1892.

- Sarah Boone was born near New Bern in North Carolina.
- Her name was Sarah Marshall before she married James Boone, a brick mason.
- Sarah and James moved their family to New Haven in Connecticut before the Civil War began in 1861. They had eight children.
- James died in 1874, a long time before Sarah did. She lived until 1904.
- During Sarah's time, people used heavy irons that were heated on the stove. Electric irons were patented in 1880 but were not used very much until the 1900s.



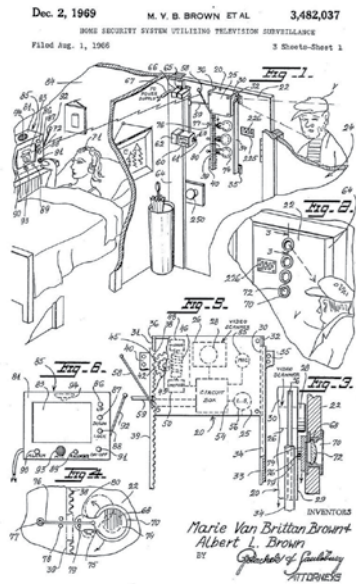
# MARIE VAN BRITTAN BROWN

Born in Queens, New York City, 1922

## Nurse who pioneered the home-security system

**M**arie Van Brittan Brown was a nurse in the 1960s when she got the idea for her invention. Marie worked nights in the New York City neighborhood of Jamaica, Queens. She thought a new kind of audio-visual alarm would help people feel more safe at home, especially late at night. Marie and her husband, Albert, created an alarm system that allowed her to see who was at the front door from the bedroom of their house. The Browns received a patent in 1969.

- Marie and Albert's security system used a motorized camera, a two-way microphone, and a video monitor.
- The invention could also lock and unlock the front door and sound an alarm.
- The Browns' work received awards and an article in *The New York Times*.
- Marie's idea inspired the security systems we have today. In later patents, at least thirteen other inventors said they had relied on the Browns' 1960s invention.





# GEORGE CARRUTHERS

Born in Ohio, 1939

## Scientist who helped reveal the mysteries of space

**G**eorge Carruthers created a special camera that was used in 1972 during the Apollo 16 flight to the moon. His invention is called the “Far Ultraviolet Camera/Spectrograph.” It let scientists learn a lot about the earth’s atmosphere. The camera also allowed scientists to see ultraviolet images of more than 550 stars, nebulae, and galaxies. George was awarded NASA’s Exceptional Scientific Achievement Medal for this project. He also developed other inventions, including a camera that captured an image of Halley’s Comet.

- **George built his first telescope when he was only 10 years old.**
- **His dad was an engineer who encouraged George’s interest in science.**
- **George’s dad died when George was 12. His mom moved the family to Chicago.**
- **In high school, George won first prize at a science fair for another telescope he built.**
- **George became a physicist at a center for space research in Washington, D.C.**
- **He was awarded the National Medal of Technology and Innovation by President Obama.**

**“Start preparing early. Take all the science and math courses. Emphasize the basics.”**



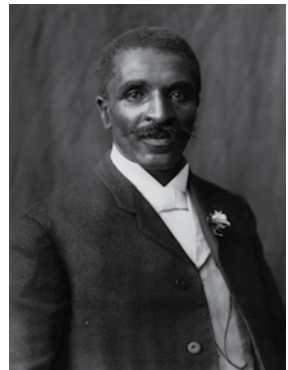
# GEORGE WASHINGTON CARVER

Born in Missouri, 1864

## Botanist and teacher who changed farming in the South

**G**eorge Washington Carver was one of the most important and respected scientists of his day. Even President Theodore Roosevelt asked for his advice. George was a botanist (an expert on plants) who taught at the Tuskegee Institute in Alabama. He told farmers to rotate their crops instead of growing the same thing year after year. George's advice was badly needed in the South, because the land was worn out from growing cotton, which drains the soil of nutrients. George told farmers to plant cotton one year and change to soil-enriching peanuts or sweet potatoes the next year. Farmers followed his advice with great success.

- **George Washington Carver was born to enslaved parents on a plantation owned by Moses and Susan Carver. The exact date of his birth isn't known.**
- **He was orphaned when he was a baby and was raised by the Carvers.**
- **He developed more than 300 uses for peanuts, including ink and cooking oil.**
- **George didn't really invent peanut butter, as many people believe, but he did help it become popular.**
- **In 1943, George's birthplace in Missouri was declared a U.S. National Monument. It was the first dedicated to an African American.**



**“When you can do the common things of life in an uncommon way, you will command the attention of the world.”**

# BESSIE COLEMAN

Born in Texas, 1892

## Pioneering pilot who thrilled audiences and inspired young people

**B**essie Coleman was the first African American woman to earn an international pilot's license, in 1921. When U.S. flight schools turned her down, Bessie went to France and learned to fly at a famous school for pilots. Flying was new and exciting in the 1920s, and air shows were popular. Bessie became a rock-star flyer at shows all over the country. She also gave inspiring lectures. During a speaking tour in Florida, Bessie became friends with an Orlando couple, Rev. Hezekiah K. Hill and his wife, Viola. She stayed with them in Orlando on West Washington Street. A section of the street is now named for her.

- Bessie's parents worked as sharecroppers. Her father was part Native American.
- She moved to Chicago and learned stories about World War I pilots from her older brothers. She wanted to fly, too.
- Mae Jemison, the first African American female astronaut in space, carried a picture of Bessie during Mae's first mission, in 1992.

**"I refused to take 'no' for an answer."**



# MARK DEAN

Born in Tennessee, 1957

## Scientist and inventor who helped launch the personal-computer age

**M**ark Dean was one of the original inventors of the IBM personal computer, which changed the way people work in a big way. He helped develop the color PC monitor and also created the technology that allows devices such as the mouse and keyboard to be plugged into computers and communicate with one another. Mark also managed the team that created the one-gigahertz processor chip. He's a member of the National Inventors Hall of Fame and the National Academy of Engineers.

- Mark grew up in Jefferson City, Tennessee.
- When he was a boy, Mark built a tractor from scratch with the help of his dad.
- He excelled in school and sports.
- In 1979, Mark graduated from the University of Tennessee, where he studied engineering.
- Not long after college, Mark landed a job at IBM. He holds three PC patents for being the co-creator of the IBM personal computer released in 1981.
- Mark continued to go to school and learn more. He earned a master's degree from Florida Atlantic University and a doctorate from Stanford University, both in electrical engineering.

**“A lot of kids growing up today aren't told that you can be whatever you want to be. . . . There may be obstacles, but there are no limits.”**



# DR. CHARLES RICHARD DREW

Born in Washington, D.C., 1904

## Doctor who pioneered America's first large-scale blood bank

In the late 1930s, Dr. Charles Drew invented a way to preserve blood plasma, allowing it to be stored and shipped for blood transfusions. Until Charles's discoveries, blood was perishable and not fit for use after about a week. He became the leading expert on storing blood. Charles's work was even more important during World War II. Before the United States entered the war, he oversaw blood banks to help British soldiers who were wounded. In 1941, Charles became the medical director of the American Red Cross National Blood Donor Service. He organized the collection of blood donations to help American troops. It was the first mass blood-collection program of its kind.

- Charles was an excellent athlete and was once ranked among the five best hurdlers in the United States and almost went to the Olympics.
- During World War II, the U.S. Armed Forces still kept blood from black and white donors separate. Charles spoke out against this practice and the ignorance behind it.
- When the policy wasn't changed, Charles resigned. He returned to teaching at Howard University, where he was an influential teacher and role model.

*"Here we have what rarely happens in history, a life which crowds into a handful of years significance so great, men will never forget it."  
– Dr. Mordecai Johnson, former president of Howard University, about Dr. Charles Drew*



# ELLEN F. EGLIN

Born in Washington, D.C., 1849

## Housekeeper and inventor who made washing clothes much easier

Ellen F. Eglin made her living as a housekeeper a long time ago, in the 1880s, when there were not a lot of ways to wash clothes, except with your hands. Ellen invented a machine that had two rollers in a frame that was connected to a crank. When you were doing laundry, you could put the clothes between the rollers after you scrubbed them in a wash basin. Ellen's clothes wringer made it much easier to squeeze water, soap, and dirt out of the clothes. Similar machines were used in England before Ellen's invention, but no one in America knew they existed.

- During Ellen's lifetime in the 19th century, she was one of only a few African American women inventors.
- She helped set the stage for later inventors such as Madam C.J. Walker, as well as Sarah Boone.
- Ellen went on to work as a clerk in a census office.
- She should have made a lot of money from her invention, but she sold the rights to it for \$18 without patenting it.



# THOMAS ELKINS

Born in New York, early 1800s

## His patents included an early refrigerator and a fancy toilet

**T**homas Elkins was a respected pharmacist in Albany, New York, who thought a lot about how to make people's lives better through inventions. He received his first patent in 1870 for a folding dining table that could also be used as an ironing board and a quilting frame, too. Thomas invented another interesting piece of furniture called a "chamber commode" that included a bureau, mirror, book rack, washstand, table, easy chair, and even a toilet. His most useful invention was a kind of early refrigerator that used metal coils, cooled by ice, to surround food and help keep it from spoiling.

- **In addition to his inventions, Thomas was an abolitionist, which meant someone who opposed slavery.**
- **Thomas was the secretary of the Vigilance Committee in Albany, one of many abolitionist groups formed in the North in the 1840s.**
- **He and other abolitionists offered food, clothing, money, and jobs to help enslaved people achieve their freedom.**



# SYLVESTER JAMES GATES, JR.

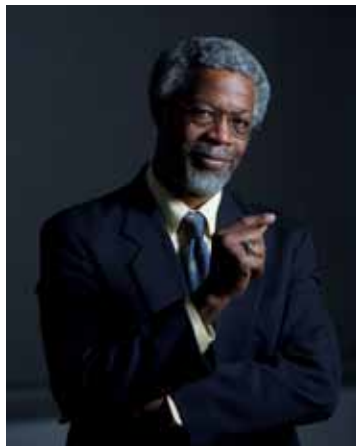
Born in Tampa, 1950

## Renowned scientist who helps people understand our universe

Sylvester James Gates is a trailblazing physicist and National Medal of Science winner. He was born in Tampa, but he grew up in the Parramore neighborhood of Orlando. His friends and family call him “Jim.” You might even have seen him on television – he has been on PBS programs such as “Nova.” In a 2016 TV commercial, he appears as himself, helping a young man understand that “you don’t have to be a brainiac” to do your own taxes. People do think of Jim as a “brainiac,” but you would find him very easy to talk with. Like the famous scientist Albert Einstein, Jim does work to help us understand the structure of our universe.

- Instead of thinking of particles to explain our world, Jim says everything may be made of very tiny pieces of string that vibrate back and forth, like guitar strings.
- That way of looking at the universe is called string theory.
- Every year, a student at Jones High School receives a \$1,000 award for excellence in math and science that’s named for Jim.
- He has delivered the prize in person every year since 2004.

“When you decide to do something with your mind, it opens doors.”





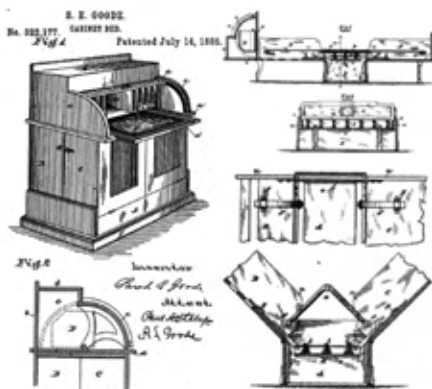
# SARAH E. GOODE

Born in Ohio, about 1850

## First African American woman to receive a U.S. patent

Sarah's original name was Sarah Elizabeth Jacobs. She was born into slavery but became a free woman after the Civil War. Sarah moved to Chicago, where she met her future husband, Archibald Goode. He was a carpenter, and after they were married, they opened a furniture store and were very successful. Many of Sarah's customers lived in small apartments in the big city. They did not have very much room in their homes for furniture. To help them, Sarah designed a special piece of furniture. At night, it could be folded out to make a full-size bed. During the day, you could fold it up to be a desk – two pieces of furniture in one.

- Sarah received the patent for her cabinet bed on July 14, 1885.
- Her invention led the way for furniture such as the Murphy bed. This kind of bed is also called a wall bed or pull-down bed. It can be stored flat against the wall or in a cabinet during the day, to save space in a small home.



# MEREDITH GOURDINE

Born in New Jersey, 1929

## Scientist who invented a way to remove smoke and fog

**M**eredith Gourdine was a physicist and engineer who pioneered research about something called electrogasdynamics, or EGD. Meredith discovered that electricity can be used to help control both smoke and fog. The system he invented removes smoke from buildings after a fire and makes the air safe for people again. Meredith's methods also helped make airports safer by clearing fog from runways. Applying the principles of EGD, Meredith also discovered ways to remove the salt from sea water and reduce pollutants in smoke. At the time of his death in 1998, he held more than 30 patents.

- Meredith grew up in Brooklyn in New York City.
- He served as an officer in the U.S. Navy before he earned his Ph.D.
- Meredith was also a star athlete. When he was in college at Cornell University, he earned the nickname "Flash" as a track champion.
- He won a silver medal in the long jump in the 1952 Olympics in Helsinki, Finland.



# TALBERT T. GRAY

## Media pioneer and the first African American TV newsman in Florida

When Talbert T. Gray joined WESH-TV in Orlando in 1969, he became the first black newsman on a commercial station in Florida. In a long career in TV, newspapers, magazines, and radio, Talbert blazed trails and opened doors, changing media in the South forever. He also published the first African American magazine to celebrate diversity in Central Florida and hosted a talk show on public television station WMFE-TV. Talbert now lives in North Carolina.

- Talbert went to high school in Memphis, in Tennessee.
- He married his wife, Mary Ann, in 1965.
- Talbert was in the U.S. Navy, and was stationed at Orlando's Naval Training Station.
- On Talbert's TV talk show in Orlando, he interviewed civil rights pioneers such as the Rev. Ralph Abernathy, and other famous people.
- He also created a newspaper and managed a radio station.
- Talbert has received many awards for this trailblazing career.

"A songwriter once wrote, 'If I can help somebody as I pass along a word or song, then my living shall not be in vain.'"



# BESSIE BLOUNT GRIFFIN

Born in Virginia, 1914

## Inventor who helped injured soldiers and later became a forensic scientist

**B**essie Blount was a physical therapist who helped soldiers who were badly hurt during World War II and the Korean War. Some of the soldiers were paralyzed. Bessie produced new, effective methods in her work with the soldiers. She invented a device that helped even paralyzed soldiers feed themselves. In 1951, she received a patent for it. Bessie made a number of other inventions. She had a very interesting life in other areas, too. In the 1970s, she had a second career as a forensic scientist, helping police solve crimes through scientific techniques and tests.

- Bessie studied nursing at the Community Kennedy Memorial Hospital in Newark, N.J., a hospital owned by African Americans.
- She studied modern dance, which helped her in her physical therapy work.
- In her forensic science career, Bessie was an expert on forgeries and fake documents.
- She became chief examiner for the police in Portsmouth, Virginia.
- In 1977, Bessie became the first African American woman to train and work at Scotland Yard, the famous police force in London. She was 63.

**“A black woman can invent something for the benefit of humankind.”**



# ZORA NEALE HURSTON

Born in Alabama, 1891

## Path-breaking author who also pioneered in the science of anthropology

**Z**ora Neale Hurston is a famous author who wrote novels including “Their Eyes Were Watching God,” which inspired a movie produced by Oprah Winfrey. Every year a week-long festival in Eatonville celebrates Zora’s legacy. Many people don’t know that Zora was also a pioneering anthropologist. Anthropology is the science of the origins and development of human beings and their cultures. Zora was the first African American woman to graduate from Barnard College in New York City, in 1928. She studied with a teacher named Franz Boas, who is now called the father of American anthropology.

- Zora was born in Alabama, but she grew up in Eatonville, Florida, which she always called her hometown.
- In her writing, Zora used the skills she learned studying anthropology.
- In 1936 and 1937, Zora received a grant to study the people of Jamaica and Haiti.
- She wrote all about her adventures in a book called “Tell My Horse: Voodoo and Life in Jamaica and Haiti” (1938).
- Zora even wrote about the subject of zombies in her book.

“Research is formalized curiosity. It is poking and prying with a purpose.”



# SHIRLEY ANN JACKSON

Born in Washington, D.C., 1946

## First African American woman to lead a major research university

**P**hysicist Shirley Ann Jackson is the first African American woman to earn her Ph.D. from the Massachusetts Institute of Technology (MIT), one of the world's top universities in science and engineering. She was also the first black woman president of the American Association for the Advancement of Science, and the first woman and African American to chair the U.S. Nuclear Regulatory Commission. Shirley is now president of Rensselaer Polytechnic Institute in New York, our country's oldest technological research university. She encourages students to break into science, technology, engineering, and math.

- Shirley's interest in science began when she was a little girl. She loved to study the bumblebees in her backyard.
- Shirley and her sister, Gloria, also built soapbox racing cars when they were kids.
- Her scientific discoveries helped lead to the invention of the touch-tone telephone, as well as caller ID and call waiting.

**"Aim for the stars, so that at least you can reach the treetops."**



# THOMAS JENNINGS

Born in New York City, 1791

## Tailor and businessman who invented dry cleaning

**T**homas Jennings was the first African American to receive a patent, in 1821 – almost 200 years ago. Thomas was a tailor in New York City. He made clothes such as pants and suits for men, and became very successful. Thomas opened a clothing shop that grew into one of the city's largest. In those days, men's suits were made of wool and other fabrics that were not easy to clean. When his customers asked Thomas for advice on removing stains on their clothes, he tried out various cleaners and methods. Thomas came up with a process called dry-scouring and added the service of dry-cleaning clothes to his business.

- Thomas's tailoring skills were so good that people came from far away to have him make their clothes.
- People who were held in slavery were not able to hold a patent in Thomas's time.
- Because he was a free man, Thomas was able to have exclusive rights to his patent and to profit from it.
- Thomas prospered through his skills and his invention. He used most of his money to free family members who were enslaved and to support the end of slavery.



# LONNIE G. JOHNSON

Born in Alabama, 1949

## NASA engineer who also invented the Super Soaker water gun

Space scientist Lonnie G. Johnson worked for NASA on the Galileo mission to Jupiter, the Mars Observer project, and the Cassini mission to Saturn. He earned many awards for his spacecraft-control systems, but he may be known best as the inventor of a popular toy: the Super Soaker water gun. Lonnie got the idea for it while he was working on an eco-friendly heat pump and accidentally shot a stream of water across the room. The Super Soaker's success allowed him to start his own company and do research in green technology. Lonnie holds more than 100 patents. He lives in Atlanta.

- In high school, Lonnie built a 4-foot-tall robot that was remote-controlled.
- Lonnie served in the U.S. Air Force after college at Tuskegee University.
- Lonnie worked for several years perfecting his accidental invention, the Super Soaker, before he sold it to a toy company in 1989.
- It is still a very popular toy and has earned Lonnie millions of dollars.

“People tell me what great times they have with the water guns.”





# FREDERICK JONES

Born in Ohio, 1893

## Inventor who pioneered refrigeration in trucks, ships, and railway cars

**F**rederick Jones invented the first automatic refrigeration unit for trucks. His work meant that food could be moved long distances without spoiling. The technology Frederick developed was adapted to ships and railway cars. His invention was very important. It meant that crops and frozen food could be sold to faraway places. Frederick's work was also very helpful during World War II, because it allowed blood serum and medicines to be transported into the battlefields. He also invented a portable x-ray unit that was used during World War II.

Altogether Frederick held more than 60 patents.

- Frederick had a hard childhood and did not have much education.
- In 1912, he moved to Minnesota and worked as a mechanic on a large farm.
- Frederick was very interested in mechanics and worked hard to teach himself about it. He also taught himself electronics.
- Frederick invented the first device that let movie projectors play sound.
- He co-founded the company that became Thermo King. It is the world leader in temperature-control equipment for transport.



# MARJORIE JOYNER

Born in Virginia, 1896

## Beauty-industry pioneer who invented the permanent-wave machine

In 1916, Marjorie Joyner opened a beauty salon in Chicago and soon met Madam C.J. Walker, a leader in beauty products (see Page 33). Marjorie had a long career with the Walker Company and became the director of its nearly 200 beauty schools. Marjorie wanted to create a better system of straightening or curling hair. She created a machine that had rods attached to a hood. A woman's hair was wound around the rods and then heated all at once to set the wave. The machine was patented and became popular with both white and black women. Later, permanents became "cold waves," which relied on chemicals instead of heat.

- Marjorie was active in politics.
- Her friends included first lady Eleanor Roosevelt and Florida educator Mary McLeod Bethune.
- In 1973, when Marjorie was 77, she went to college at Bethune-Cookman in Daytona Beach and earned a degree in psychology. She lived to be 98 years old.

**"Believe me, people can do what they set their minds to."**



# LEWIS LATIMER

Born in Massachusetts, 1848

## Inventor who was vital in bringing us electric lights and the telephone

**L**ewis Latimer's work had a big impact. He helped bring us both practical electric lights and the telephone. Thomas Edison had invented a light bulb, but it only lasted a few days. The part of the bulb that glowed was the filament in its center. Lewis invented a way to make the filament last much longer and cost less. He also helped Alexander Graham Bell patent his telephone. Later Lewis worked as the chief draftsman and patent expert at the Edison Electric Light Company. He continued to invent many things, including much safer elevators.

- Lewis's parents went to Massachusetts from Virginia to escape slavery.
- In a famous case, his father, George Latimer, was arrested for being a runaway and was tried.
- Lewis served in the U.S. Navy during the Civil War.
- After the war, Lewis got a job in a patent law firm. He was good at the detailed drawing needed to apply for a patent. He used these skills later in his career.
- Lewis worked for civil rights in the 1920s and was also an artist, poet, and composer.

**"We create our future, by well improving present opportunities, however few and small they be."**



# JAN E. MATZELIGER

Born in Dutch Guyana (now Suriname), 1852

## Shoemaker and inventor who helped bring shoes to people around the world

**B**efore Jan E. Matzeliger's invention, shoes were made almost entirely by hand. Shoemakers made molds of people's feet. The shoes were then shaped based on the molds. It took time to fasten the top of the shoe to the sole, which is called "lasting." Handmade shoes cost a lot – more than many people could afford. Jan created a shoe-lasting machine that quickly attached the top to the sole. His machine could make as many as 700 pairs of shoes a day, 10 times more than was possible before his invention. Jan received a patent in 1883. His invention brought shoes to many more people around the world.

- Jan was born in South America, in a Dutch colony.
- As a boy, he worked in a machine shop and learned a lot about machinery.
- Jan moved to the United States when he was young and began to learn English.
- He settled in Massachusetts and found work in a shoe factory.
- Jan made his first inventions out of whatever he could find, including cigar boxes and scrap wire.



# ELIJAH McCOY

Born in Canada, 1844

## “The real McCoy,” whose invention helped trains and ships run faster

**E**lijah McCoy was working as a fireman on the Michigan Central Railroad when he came up with his important invention. Part of his job was oiling the parts of the train’s steam engine. The oiling had to be done often, and the train had to stop while Elijah was doing it. In 1872, Elijah invented a “lubricating cup” that would automatically drip oil when and where it was needed, while the train was still moving. Now, trains could run for long periods without stopping. Elijah’s invention was a great success with railroads across the country. It was also used in steam engines on ships.

- Elijah’s parents fled slavery in Kentucky and went to Canada, where Elijah was born. They were helped by the Underground Railroad – the name for a secret network of people who helped enslaved people escape.
- In 1847, Elijah’s family settled in Michigan.
- He studied mechanical engineering in Scotland as a young man.
- When people tried to copy Elijah’s popular invention, railroads asked for “the real McCoy” – a popular expression that’s still used today. It means “the real thing.”



# GARRETT MORGAN

Born in Kentucky, 1877

## Publisher and inventor who patented the three-way traffic signal

**G**arrett Morgan was a businessman in Cleveland, Ohio, as well as a busy inventor. In 1920 he started the *Cleveland Call*, which became one of the most important African American newspapers in the country. Garrett owned a car in the early 1920s, when Cleveland's narrow streets were crowded with horse-drawn wagons, bicycles, and streetcars. Many accidents happened. Traffic signals were operated by hand and did not work very well. They switched from "stop" to "go" with no time in between. Garrett created an automated signal with a third position, meaning "warning." This led to the yellow light on today's traffic signals. Garrett patented his invention and sold the rights to General Electric for \$40,000.

- Garrett's mother, Elizabeth, was part Native American and part African American.
- Garrett developed many other inventions, including a type of gas mask.
- In 1916, he made national news when his gas mask was used to rescue miners who were trapped in a shaft under Lake Erie.
- Garrett's many inventions included a zigzag-stitching device for sewing machines.



**"If you can be the best, then why not try to be the best?"**

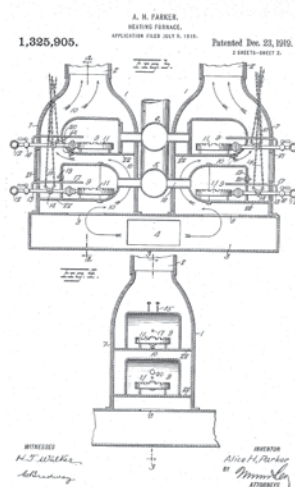
# ALICE H. PARKER

Born in New Jersey, about 1895

## Inventor who patented a system of central heating using natural gas

Alice H. Parker's life is a mystery. We know she lived in Morristown, New Jersey, and attended classes at the Howard University Academy in Washington, D.C. Because of patent records, we also know that, in December 1919, Alice received a patent for a "new and improved heating furnace." Alice's design was the first system to use natural gas to heat a home. The most common heating method at the time was to cut wood and burn it in fireplaces or stoves. Alice's invention led the way to the heating systems used in most homes today. Her invention was unique, because it drew air warmed by gas from a single box and delivered the air through ducts to various parts of the house.

- Alice earned honors and a certificate in 1910 from the Howard University Academy.
- The academy was a high school, connected to Howard University, that taught courses in English, Latin, physics, and other subjects.
- The New Jersey Chamber of Commerce named an award after Alice. It honors New Jerseyans who have made history through their work.



# RICHARD SPIKES

Born in Texas, 1878

## Inventor who improved how we drive automobiles and school buses

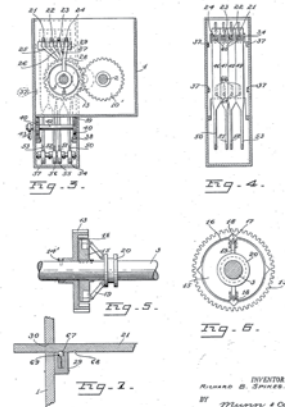
**R**ichard Spikes patented many inventions. Some of them improved automobiles, including the automatic gear shift and automatic directional signals. Richard's signaling system was introduced in 1913, in a car called the Pierce Arrow. It soon became standard in all cars. In 1932, Richard sold his automatic gear-shift design for more than \$100,000 – a huge amount of money then. He made many other, varied inventions and had a long career, right up until his death in 1962.

- Some people think Richard was from Texas. Others say Oklahoma or California.
- Richard's many inventions include a tap for beer kegs. He sold his tap design to the Milwaukee Brewing Company.
- Late in Richard's life, he was working on a safety brake for cars, but he was losing his vision. To help him finish his work, Richard invented a drafting machine for blind designers.
- His safety brake was installed in almost every school bus in the nation.

His many inventions also included an automatic car washer (1913), shoeshine chair (1939), multiple-barrel machine gun (1940), and swinging barber chair (1950).

Dec. 6, 1932.

R. B. SPIKES  
AUTOMATIC GEAR SHIFT  
Filed March 21, 1931  
2 Sheets-Sheet 2



INVENTOR  
RICHARD B. SPIKES  
BY [Signature]  
ATTORNEYS



# MADAM C.J. WALKER

Born in Louisiana, 1867

## Self-made millionaire who created beauty products for African American women

**M**adam C.J. Walker's original name was Sarah Breedlove. Her parents died when she was only 7, and she worked in the Louisiana cotton fields. Sarah moved to St. Louis to be near her brothers, who worked as barbers. In the 1890s, she began experimenting with homemade remedies for hair loss. She changed her name after she married Charles Joseph Walker. She thought "Madam Walker" would sound better on ads for her new product, which she named "Madam Walker's Wonderful Hair Grower." Sarah was very good at promotion and found great success in her business. She became one of the nation's first woman millionaires.

- Before the Civil War, Sarah's parents had been enslaved workers on the same Louisiana plantation where she was born.
- She worked washing clothes and cooking before her success as an entrepreneur.
- The Walker Company trained representatives who became well known throughout black communities all over the country.
- Being a "Walker agent" offered women a rare chance to make money.

**"I had to make my own living and my own opportunity. But I made it! Don't sit down and wait for the opportunities to come. Get up and make them."**



# JAMES E. WEST

Born in Virginia, 1931

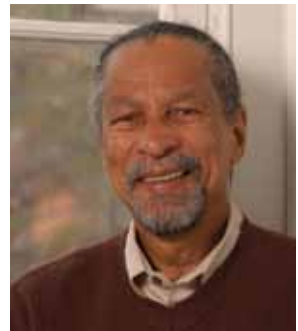
## Inventor and professor who developed a better microphone

James West was working at Bell Laboratories in the 1960s when he teamed with another scientist to develop a new kind of compact microphone. Before his invention, microphones were expensive and needed a large battery. James's work made microphones much more affordable and also smaller. By 1968, James's invention was being mass produced. It is now used in 90 percent of all microphones – in telephones, video cameras, baby monitors, and hearing aids.

- When he was a boy, James took apart appliances to see how they worked. (He never did that when things were plugged in, of course. That's dangerous.)
- After he retired from Bell Labs, James became a research professor at Johns Hopkins University in electrical and computer engineering.
- Throughout his career, James has received more than 250 patents.
- He is a member of the National Inventors Hall of Fame.

**“If I had a screwdriver and a pair of pliers, anything that could be opened was in danger. I had this need to know what was inside.”**

**– James West on his childhood curiosity about how things worked**



## To Learn More

Many books tell us more about African Americans who have made history in science and other fields. Visit a library near you, such as the Orlando Public Library next to the History Center, and a librarian will be happy to help you find good books. For information about the Orange County Library System and its other branches, go to [ocls.info](http://ocls.info).

Lots of websites also contain information about African American trailblazers. Some that we used in researching the biographies in this book are:

[AfricanAmericanHistoryOnline.com](http://AfricanAmericanHistoryOnline.com)

[Biography.com](http://Biography.com)

[BlackInventor.com](http://BlackInventor.com)

[Black-Inventor.com](http://Black-Inventor.com)

[Encyclopedia.com](http://Encyclopedia.com)

[GreatBlackHeroes.com](http://GreatBlackHeroes.com)

[GreatFemaleInventors.com](http://GreatFemaleInventors.com)

[Inventors.About.com](http://Inventors.About.com)

[MyBlackHistory.net](http://MyBlackHistory.net)

[Teacher.Scholastic.com](http://Teacher.Scholastic.com)

## Orange County Regional History Center Research Center and Library



The Joseph L. Brechner Research Center contains more than 17,000 photographs and postcards, 6,000 books, and a vast collection of archival material. Open to the public by appointment, Mon.-Fri., 10 a.m. - 5 p.m., and Wed. on a walk-in basis, noon - 4 p.m. Email [Adam.Ware@ocfl.net](mailto:Adam.Ware@ocfl.net) or call 407-836-8541.

# ORANGE COUNTY REGIONAL HISTORY CENTER



## A History Center with Its Own History!

The Orange County Regional History Center is housed in the 1927 Orange County courthouse. Trials took place over many decades in the courtroom you'll see on a visit to our museum. The History Center is also home to the Historical Society of Central Florida's vast and varied collections – preserving our area's rich heritage.

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