

# Black Inventors of America

By PROFESSOR MCKINLEY BURT

## Elijah J. McCoy

Elijah J. McCoy, the son of runaway slaves, was born in Canada. His father, by dint of hard labor in the Northwest woods, managed to send a teenaged McCoy to Scotland, for an education in mechanical engineering. Upon return to the United States, the already-imaginative young engineer settled in Ypsilanti, Michigan.

In 1870, he began experimenting with lubricators for steam engines. At this period, one of the biggest problems in American industry was "down-time"; this was due to the fact that machinery (and production) had to be halted, while lubrication was performed by hand oilers. Engineering-economists, in analyses of the American economy for the post-Civil War period, have estimated such losses to have been a full 22 percent of the Gross Product or service. McCoy's driving ambition was to find some method whereby machines could be oiled as they worked.

In 1872, working in his own tiny machine shop, he developed a container, or cup, with a tiny stopcock...that regulated the flow of oil onto moving elements of machines. This was the first automatic lubricator and since this date (July 23, 1872), millions of machines all over the world have been equipped with some version of his invention...including the moon-exploration vehicles.

Whether this was a matter of Naval vessels, oil-drilling rigs, locomotives, saw mill equipment, mining or construction machinery...no one would even consider a purchase...unless inspection revealed that it was equipped with the "Real McCoy." That is how a black man's name became a by-word in the industrial sectors of the world.

McCoy went to patent over 50 lubricating units and 25 other ingenious mechanical devices useful not only to industry - but to all mankind. For example, the lawn sprinkler (patented on September 26, 1899).

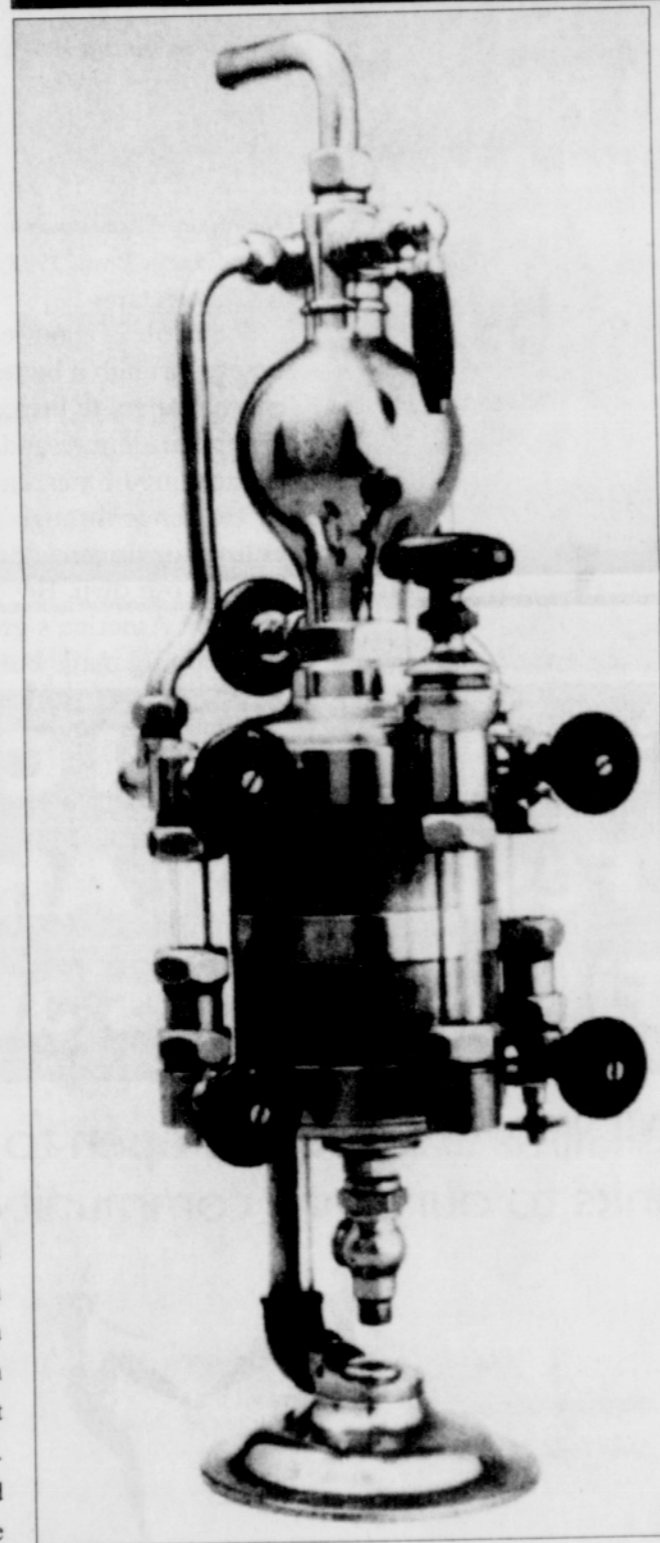
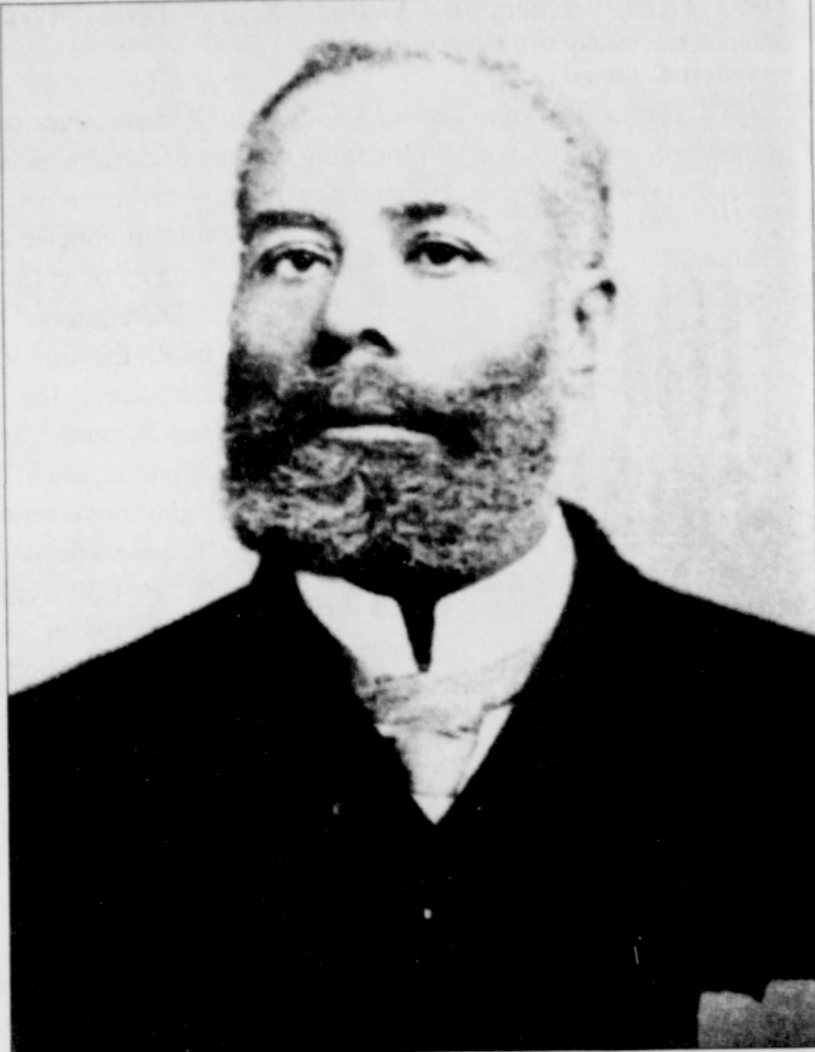
## Jan Matzeliger

Jan Matzeliger was born in Paramaribo, Dutch Guiana, of parents who were former slaves. A slender and erect young man, known for a keen sense of humor, he began work in a Lynn, Massachusetts, shoe factory in 1877. Here he was shocked to find that one shoe alone took hours to complete. The reason for this was that hand lasters had to painstakingly pleat the leather and fitted uppers to the soles. To young Matzeliger it seemed incredible that by 1877, no machine had been devised for the operation. He decided immediately that he was the man who could solve the problem.

There seems to have been a common pattern to the makeup of these black inventors: initiative, resourcefulness, independence, and a tremendous drive and will to surmount obstacles...the unconquered spirit!

Matzeliger promptly rented a room over the Old West Lynn Mission. Here he constructed prototypes of his ideas, using scraps of wood, old cigar boxes, and improvised tools. After several years of experiment and much trial and error, he felt that he was on the right track. By using an old forge, abandoned by a local blacksmith, he was able to mold the needed gears and cams.

By 1883, he had evolved a fantastic piece of machinery, which combined so many different operations that it could manufacture an entire shoe in



Clockwise from top: Elijah J. McCoy, Jan Matzeliger and McCoy's invention, the automatic engine lubricator.

one minute. His invention was an immediate success. Its adoption created thousands of new jobs, where before only a few master craftsmen were required. *Shoe prices were cut and wages doubled.* Thousands of white immigrants left their European poverty to come to work in the prosperous industry created by this black innovator. Exports quickly jumped from one million pair to eleven million pair per year. Within five years, Lynn, Massachusetts, became the world's largest shoe manufacturing center.

For reasons undetermined, the Patent office delayed its stamp for six years and Jan Matzeliger sold his Patent to Sydney A. Winslow, who promptly founded the United Shoe company.

In just a few years, Winslow bought up 40 smaller companies, hired hundreds of workers and increased the value of his product from a mere \$220,000 to \$242,631,000!

The Automatic Shoe Last Machine was patented on September 22, 1891.

## Granville T. Woods

(1856-1910)

From the subways of New York, to the "fruited plains" of the Midwest; from the Rockies to our Western shores; and, indeed, wherever else in the world that a "Song of the Rails" is meaningful...we are indebted to the prolific outpouring of electrical and mechanical genius from an Australian-born black man.

The parents of Granville T. Woods emigrated to the U.S. when he was sixteen. He had had little formal education, having been apprenticed out as a bellows-blower at the age of ten. But even so, his inquiring mind expanded this railroad yard job into an informal school.

In his early teens, he mastered the mechanics of the locomotive engine, even paying from his meager earnings for tutorage from the master mechanic. Consequently, when his family settled in Missouri, he was quickly employed as an engineer by the Iron Mountain Railroad. Later he became Chief engi-

neer aboard the British steamer, "Ironsides."

By 1880 he had established his own shop in Cincinnati, Ohio; and a few years later he became interested in thermal power and steam-driven engines.

He filed his first patent in 1890, on an improved steam-boiler furnace (the original is included in this text).

The inventions of this inspired black inventor were catholic: A telephone, which he sold to the Bell System; a telegraph system which enabled moving trains to communicate with each other and which was successfully used in 1885 on the New Rochelle Road.

In 1892, an electric railway system of his invention was operated at Coney Island, New York; and it was June 10, 1922, when he was granted a patent on the Automatic Air Brake - joining Andrew Beard as an inspired innovator in the field of railroad safety.

In all, Woods invented fifteen appliances basic to electric railways. His invention in 1900, however, served as entirely different field - an electric incubator for the hatching of chickens.

Edison, Bell, and the Westinghouse Company bought some of the devices he invented. Indeed, Woods brought two patent cases against the former; and in both cases, he was able to prove that he had earlier rights to inventions claimed by Edison. After the second loss to the black inventor, Thomas Edison offered him a position; but Woods turned it down, preferring to be his own master in the "Woods Electric Company."

Descriptions of the litigation and the confrontations between these two giants are colorful and fascinating.

Ward Harris, a well-known authority on Thomas Edison, left the world's most complete collection of inven-

tions and writings by that inventor, when he died. The reader may wish to know that much pertinent information is available at 49 Fremont Street, San Francisco, California 94105.

Woods was given to almost poetic titling of his inventions and to descriptions of their benefits to humanity. Take for example, the "Synchronous Multiplex Railway Telegraph," of 1887; designed "for the purpose of averting accidents by keeping each train informed of the whereabouts of the one immediately ahead or following it, in communicating with stations from moving trains; and in promoting general social and commercial intercourse."



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Lewis Howard Latimer, received his first patent in 1874. He later became a skilled draftsman for such greats as Alexander Graham Bell and Hiram S. Maxim, founder of The U.S. Electric Lighting Co. As a student of Hiram S. Maxim, Latimer unlocked the Secret of The light bulb, as we know it today, "Carbon Filaments." Latimer's invention made it possible for Electric lights to be installed in homes.

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