

# Michael Owens: His Invention Revolutionized Making Bottles

**M**ichael J. Owens knew there had to be a better way to manufacture glass bottles.

So, he invented one.

Oh, there were glass-making machines in existence before he came along during the early 20th century, but they had their limitations, not being fully automatic. The early ones came into the glass manufacturing picture about 1889. They were known as two-man machines because one man was required to gather the molten glass and drop it into the machine molds and another man had to push and pull levers and turn on air valves.

About 1899, George C. Pyle, inventor of the electric headlight for locomotives, invented and put into operation the first fruit jar manufacturing machine that required only a single man to operate. It was called a one-man machine.

Both early machines were employed at the Greenfield, Indiana Fruit Jar and Bottling Company plant so the facility was a natural when it came to testing the Owens machines.

In fact, according to a news story in the *Hancock Democrat* of Greenfield in its Art Supplement, Page 7, of Sept. 16, 1909, three of the Owens machines were installed in the Greenfield plant ... "set to work at a schedule of 14 jars per minute for each machine, or 7,300,000 per year, or about 20 million per year for the three.

"Though the first three ... have only just begun their endless grind, steps are being taken to increase their schedule to 24 jars a minute for each machine, or a total of something over 12 million a year or 25 million or so for the three."

The Greenfield company was said to have the exclusive use of the first fully automatic machine in making fruit jars in this country. They eliminated the need for even a single operator by being hitched up to electric motors. They move up in front of patented open ovens from which there is a constant flow of molten glass. The machines do the rest and human aid is needed only to clear the jars out of the way as they drop from the machine.

"The principle of the machine is simple enough. There

NEWS ITEM: Toledoan Michael J. Owens, who invented the automatic bottle-blowing machine more than a century ago, was inducted into the National Inventors Hall of Fame in May of 2007. A spokesman at the shrine in Akron, Ohio said Mr. Owens, who died in 1923, was credited with 49 patents, including machinery for making sheet glass and light bulbs. But his bottle-blowing machine revolutionized the glass container industry and is credited with eliminating child labor in the industry. — *The Toledo Blade*

are six fruit jar molds that are placed on a wheel-like frame. The machine is moved up to the supply of liquid glass and the wheel, which operates horizontally, is started. As it brings each mold around to the open furnace, it drops an inner mold into the glass. The air is sucked out of the mold and the vacuum causes the liquid glass to rush into the mold as it keeps moving on its circular journey. As it is about to leave the supply of molten glass, a knifelike trap covers the hole and the glass is confined. It almost instantly be-

gins to congeal and before it travels three more feet, the inner mold separates and drops back, revealing the glass jar.

"It is held at the top by a permanent mold which has, in the meantime, formed at the neck of the jar. A pipe begins to puff air through this neck and the molten glass begins to swell like a fiery bubble the instant it is revealed to view.

Then the divided mold, which is the exact shape of the fruit jar, closes with the glass inside and the molten mass is blown out into the shape of the jar.

"Just before the mold gets around to the furnace again, the fruit jar mold is lowered about a foot and the mold that sucks up the glass is brought into place for its dip into the molten glass. As it clears the furnace with its glass,

the completed jar is dropped into a chute. It is still a cherry red, but perfectly molded, with trade marks and names being blown into its side and its mouth completely finished. The process begins over and over again, round and round, minute after minute, hour after hour, week after week, without limits, if the electricity doesn't fail and the supply of glass is unfailing.

"The great advantage, of course, is that the newly made jars are absolutely uniform in size and capacity, and the thickness of glass around the mouth also is of a uniform thickness. This eliminates the old problem of the top breaking when covers were put on or taken off, and the women who were packing the jars had to be sure that each sliver of glass did not remain in the foodstuffs. The new machine process prevents that.

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"From the economic point of view, it is figured that each machine operating at the rate of 14 jars per minute will make as many jars as 15 men could make in 24 hours. The men who take the jars out of the way are paid an unskilled day wage, saving the factory much money.

"It seems only fitting that the only place in the country where this machine, invention of glass worker Michael J. Owens, is to make fruit jars is in Indiana. Three-fourths of

all the fruit jars made in the United States are made in this state and most of them in Muncie and Greenfield. A third center is Terre Haute and the only two other factories making fruit jars (in 1909) are at Coffeyville, Kansas and Washington, Pennsylvania. Some fruit jars are made at bottling plants as side products."

NOTE: Modern versions of the Owens machine can produce up to a million bottles or jars a day.



## The Federation of Historical Bottle Collectors

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