



Pressed Stoneware Bottles

Many bottle collectors are aware of Edwin H. and C.J. Merrill and their 1847 U.S. Patent number 5,206 for a process for making pressed, molded stoneware bottles by machine. Less well known is the 1868 Merrill patent for improvements to the machine (*Figure 1*). The redesigned equipment improved quality and efficiency. It also enables today's collectors to determine if a molded bottle was made before or after 1868 from markings on the bottoms, much like glass bottles can be dated based on the presence of a pontil mark. In the case of pressed clay bottles, however, the older ones have smooth bases while those with rough bottoms date from after 1868.

Before the 1847 patent few stoneware bottles were molded. Those that were molded were made using plaster molds and liquified clay. The liquified clay was poured into a plaster mold. The clay was left in the mold for a predetermined amount of time and then the liquid was poured out. The plaster mold absorbed water from the clay so when the mold was opened the walls were a uniform thickness. It was then stamped, dried, and fired. The process was slow and inefficient, so most potters chose to hand-turn bottles on a wheel instead.

The 1847 Merrill patent significantly improved the efficiency of automated clay bottle production. Their equipment used a two-, three- or four-part cast iron mold to form a bottomless bottle. A piston injected clay through a rotating core with spiraled slots that was positioned inside the mold. After the body of the bottle was formed, a disk of clay was pressed onto the bottom of the bottle with a rotating circular plate with slots designed to trim away excess clay. At the same time, a rotating spindle was inserted into the neck. The spindle had a toggle at the end that opened to 90 degrees after entering the bottle. The rotating toggle puts pressure from the inside to oppose the pressure from the spinning disk on the outside to firmly attach the disk of clay to the bottom. The toggle left distinctive marks on the inside of the bottle.

In 1868 Edwin and H.E. Merrill were issued patent 78,676 for improvements to the 1847 patent. Besides making improvements to the mold and various other parts of the machine they changed the circular plate used to attach the clay disk to the bottom of the bottle. An important difference is that the new disk had curved slots that extend close to the outer edge. The previous disk was made with straight slots. The purpose of curved slots was to put more pressure on the bottom to create a tighter joint and to minimize the removal of excess clay. (*Figure 2*)

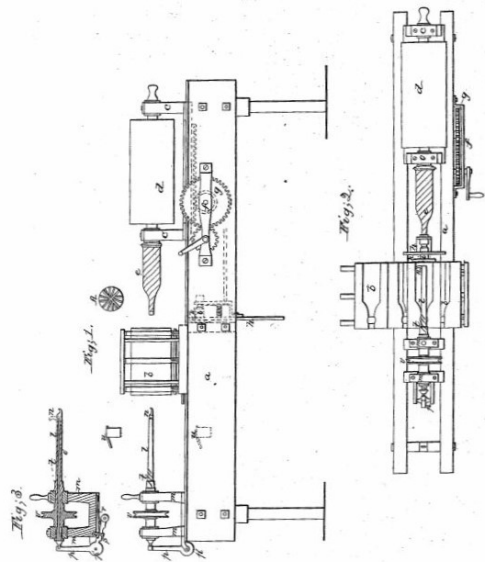
The Merrill's usually made their molds with 6, 7, 8, 10 or 12 panels which gave them a distinctive look that could not be duplicated on a wheel, although the Merrill's sometimes made molded bottles in cylindrical form. The Merrill's pottery specialized in manufacturing pressed bottles and other types of stoneware, but they also sold their equipment to other potters outside of the Akron, Ohio area. One example is the Milwaukee Stoneware Company. In 1849 they advertised pressed stoneware bottles that were probably made using Merrill equipment. A bottle attributed to them is shown in *Figure 6*. The Washington Smith Pottery of New York City also made pressed bottles by 1849.

Bottles made on Merrill equipment are easy to identify. They have distinctive markings on the bottoms, side seams, and are usually sided. Wheel-turned bottles don't have seams or bottom markings and are cylindrical.

A telltale sign of bottles made on the new equipment is the pattern on the bottom. While both versions of the Merrill machines left a windmill pattern and a small circular mark in the center, the new design left a rougher, more jagged appearance. Bottles made with the old equipment tend to have smooth bottoms. Just remember this rule of thumb: the older ones have a smooth base. (*Figures 4&5*).

Keep in mind that some potters probably continued using old equipment after 1868 but if the bottle has the telltale jagged windmill pattern on the bottom it was probably made after 1868.

E. H. & C. J. Merrill,
Making Stone-Ware.
Nº 5,206. Patented July 31, 1847.



E. H. & H. E. Merrill,
Making Clay Bottles,
Nº 78,676. Patented June 9, 1868.

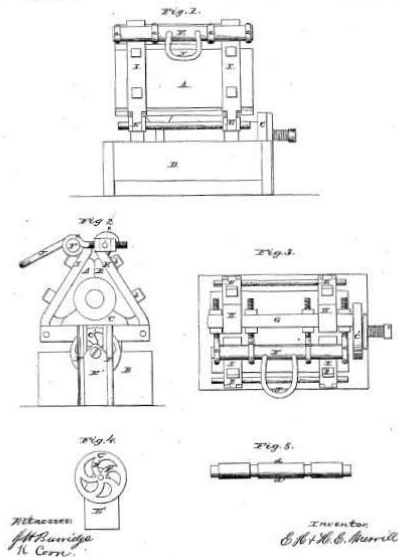


Figure 1 At left is the 1847 Merrill Patent number 5,206. It shows the design including the spindle and mold. Note the core mold with the slits used to inject the clay into the mold. At right is the 1868 Merrill Patent number 78,676 drawing that shows the improved outer case and new mechanism for operating the mold along with the new bottom plate design.



Figure 2 Inside view of a pressed bottle - The inside of bottles made with Merrill equipment have marks left by the rotating spindle and toggle that was used to help attach the bottoms of bottles. Notice the joint between the sidewall and base, the circular depression left by the end of the spindle, and the line around the sidewall left by the toggle.

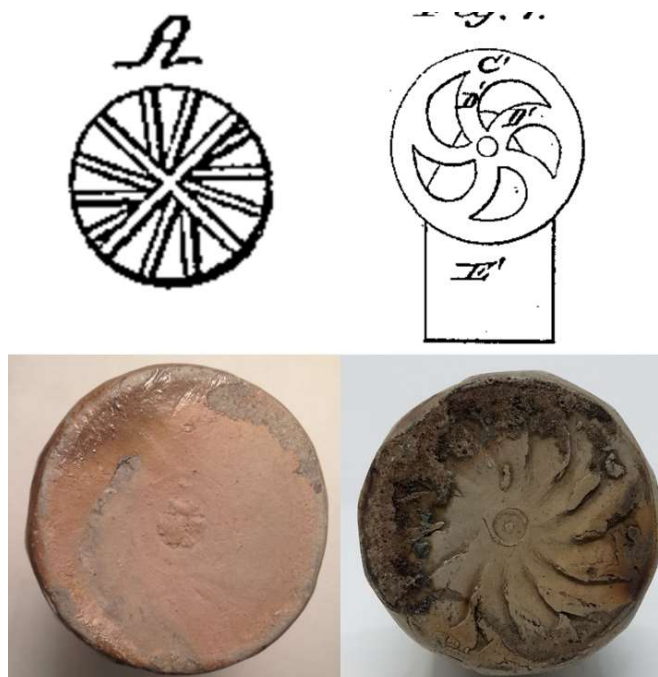


Figure 3 A key difference between the 1847 Merrill equipment and 1868 improved design is the disk used to attach the bottom of the bottle. On the left is the disk from the 1847 patent drawing and a bottle with it. On the right is the disk and bottle from the 1868 patent.



Figure 1 Pressed bottle made after 1868 - John Hanson bottled root beer in Marinette, Wis. The distinctive rough markings on the bottom help date the bottle to after 1868, which is validated by the 1874 date stamped on the bottle. Note the mold seam that is visible on the lip.



Figure 2 Merrill Advertisement - the 1868 Akron City Directory includes this ad promoting pressed stoneware bottles. The Company produced them for many different bottlers, many of them 12-sided quarts.



Figure 6 Bottle made before 1868 - the Taylor Brothers bottled small beer in Milwaukee around 1850. Their bottles were probably made at the Milwaukee Stoneware Co. using Merrill equipment (see Figure 7). Note that the bottom is smooth which is typical of bottles made using the earlier Merrill equipment.

FOR SALE.—At the Stone Ware Factory, a large lot of Flower Pots assorted sizes, 100 doz. Stove tubes &c. a large lot pressed quart and pint Beer Bottles— at low prices. Jc27 **WARDNER & WILLIAMS.**

Figure 7 An 1849 ad in the Milwaukee Sentinel advertising a large lot of pressed quart and pint beer bottles.