

UNITED STATES PATENT OFFICE.

CHARLES D. FOX, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MOLDS FOR GLASS BOTTLES.

Specification forming part of Letters Patent No. **138,323**, dated April 29, 1873; application filed January 14, 1873.

To all whom it may concern:

Be it known that I, CHARLES D. FOX, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and valuable Improvements in Molds for Making Glass Bottles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the figures and letters marked thereon, forming part of this specification.

Figure 1 of the drawing is a top or plan view of my invention, and Fig. 2 is a vertical central section of the same.

My invention has reference to molds used in manufacturing glass bottles. The object of my invention is to produce a seamless bottle, the molds heretofore used being of such construction that they form a seam which cuts the wrapper in which bottles are frequently put up. My invention, then, consists, first, in constructing the cylinder, shoulder, and neck of the mold in one undivided piece; secondly, in constructing the mold so that the bottle will be discharged from the bottom thereof instead of from the top or sides, as heretofore; thirdly, in certain details of construction, as hereinafter fully specified.

Heretofore molds for forming glass bottles have been generally constructed in two ways. In the first, the mold opened vertically down its entire length, thus allowing the bottle to be withdrawn laterally; in the second, the cylinder is made seamless, and the casing or part of the mold which formed the neck is constructed in two sections, which are opened to allow the bottle to be withdrawn upwardly from the cylinder-casing. Molds of the first kind form a vertical seam on the cylinder, shoulder, and neck of the bottle, while those of the second form a seam at the junction of the cylinder and shoulder and a vertical seam on the shoulder and neck.

Referring to the accompanying drawing, A represents a mold constructed according to my invention. The cylinder, shoulder, and neck are shown at A', cast or formed in one seamless piece, the walls of the cylinder being made to incline very slightly together as they

approach the shoulder, so as to allow the bottle to be easily withdrawn. B represents the top of the mold, which is made in two sections, provided with suitable handles, and pivoted at *b*. A flaring opening in the top is shown at *b'*, said opening being wider at its lower than at its upper edge. When the bottle is blown in the mold the metal spreads over the top. This is brushed off as far as may be, but leaves a projecting flange about an eighth of an inch across, which would prevent the bottle from being withdrawn downwardly unless the top could be opened; and further, unless the neck were of greater diameter than the upper edge of the opening in the top. C represents the bottom of the mold, which is hinged at *c*, and kept in place by means of the weighted lever D, swiveled at *d*. The object I have in view in making the lever and bottom separate is this: if the bottom and lever were fastened rigidly together, when the former became worn at *d* it would not keep the latter well up to its place, but would permit it to drop at one side, thus producing a seam at that point on the bottle. As constructed, however, the bottom is kept in proper position even after the swivel *d* becomes worn.

The method of operation is as follows: The glass is placed in the mold as usual. When the bottle is formed the "blow-over" is swept off and the top opened by spreading apart the sections forming the same; the lever is then raised, permitting the bottom to drop and the bottle to fall into a suitable receptacle. The bottle is then taken to the furnace, and the neck heated and operated upon by a tool which turns down the blow-over and renders invisible the short seam formed thereupon by the top.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A mold for glass bottles, having the cylinder, shoulder, and neck cast or formed in one seamless piece, as shown, and having the hinged bottom C opening downwardly to allow the bottle to be taken from the bottom of the mold, substantially as specified.

2. A mold for glass bottles having the cyl-

inder, shoulder, and neck-receiver cast or formed in one seamless piece, substantially as and for the purpose specified.

3. The hinged bottom C, opening downwardly, substantially as shown and described.

4. In combination with the bottom C, the ever D, as and for the purpose described.

In testimony that I claim the foregoing I have hereunto subscribed my name in the presence of two witnesses.

CHARLES D. FOX.

Witnesses:

GEO. C. SHELMEERDINE,

M. DANL. CONNOLLY.