

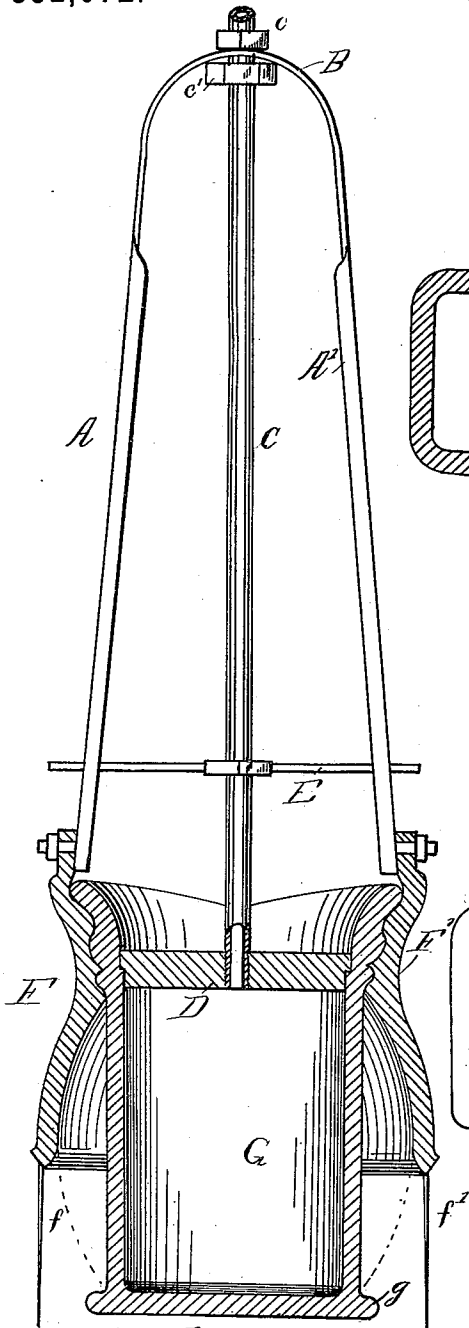
(No Model.)

P. ARBOGAST.

MANUFACTURE OF GLASSWARE.

No. 352,672.

Patented Nov. 16, 1886.



WITNESSES: *Fig. 1.*
A. A. Moore.
A. E. Rawlinson.

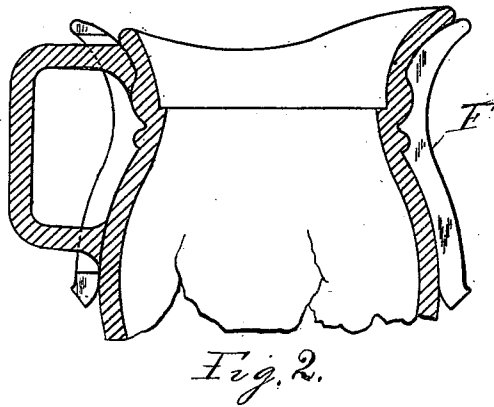


Fig. 2.

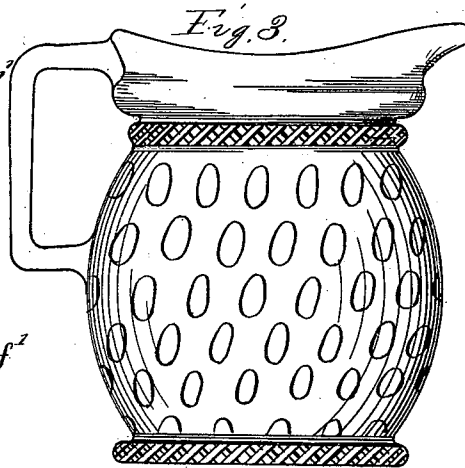


Fig. 3.
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UNITED STATES PATENT OFFICE.

PHILIP ARBOGAST, OF PITTSBURG, PENNSYLVANIA.

MANUFACTURE OF GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 352,672, dated November 16, 1886.

Application filed March 11, 1886. Serial No. 194,907. (No model.)

To all whom it may concern:

Be it known that I, PHILIP ARBOGAST, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in the Manufacture of Glassware; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

This invention has relation to the manufacture of glassware, and has for its object to provide a glass-maker's tool which shall be used as a combined tool, blow-pipe, and mold.

This invention therefore consists in attaching to or making integral with the ordinary tool or glass-tongs a partial mold or former, and in combining with the said tool and former a blow-pipe, in order that the article to be formed can be blown and molded or formed without removing it from the tool or tongs.

This invention further consists in the construction, combination, and operation of parts, as more fully hereinafter described, and specifically claimed.

Referring to the accompanying drawings, Figure 1 is a vertical sectional view of the partial mold or former with a blank in position therein, the tool or tongs to which the mold is attached being shown in full. Fig. 2 is a view of one-half of the mold or former, with a sectional view of a portion of a finished article in position therein. Fig. 3 is a face view of a pitcher as it is finished.

A A' are the two legs of the tool or tongs, and B is the bow of the same, said bow being made integral with the legs. Through the center of the bow B passes the rod C, which is held in position by nuts *c c'* on either side of the bow. To the lower end of the rod C is attached the interior former, D, having the configuration of the interior of the open end of the article to be blown. A rod, E, is fastened to the rod C, its ends passing through holes in the legs A A', near their lower ends, the object of the rod E being to brace the legs and prevent the halves of the mold from getting out of alignment.

The mold or former is made in two pieces, F F', each piece being attached, as shown, to one of the legs A A' of the tool or tongs. The

upper portion of the halves of this former is made to conform with the exterior configuration of the article to be manipulated, while the lower portions are flaring or bell-shaped.

The rod C may be formed tubular and pass completely through the block or former D, so as to adapt it to be used as the blow-pipe; or a separate blow-pipe, as shown in dotted lines in Fig. 1, may be used.

If deemed advisable, guide-rods *f f'* may be attached to the lower part of the former, to limit the distance at which it will be placed upon the blank.

The operation of the device is as follows: The blank G having been previously heated in the glory-hole, is taken therefrom by means of a pair of snaps grasping the bottom *g* of the blank, and its open ends placed within the mold or former on the ends of the legs A A', the block D fitting within the open mouth of the blank. The tool is then grasped in the hand, and the legs being brought together the formers F F' embrace the open end of the blank, its configuration being exactly the same as that of the blank, thereby retaining the shape of the blank while the article is being blown. The blower is then brought into operation, and the lower part of the blank is bellied, the flaring portion of the mold—the lower portion of the mold—acting as a former and guide to the size of the bellied portion. After blowing, the arms A A' are allowed to spring apart, thus opening the mold to allow the finished article to be withdrawn therefrom and taken to the heating-oven to be polished.

As shown in Fig. 2 of the drawings, an opening is formed at the junction of the two halves, to permit the handle, if previously attached to the article, to protrude.

I claim—

1. The combination, with a glass-maker's tool or tongs, of a sectional mold or former adapted and designed to retain the molded portion of a blank in shape, and serving as a partial mold for the unfinished portion of the blank while being blown, substantially as shown and described.

2. The combination, with a glass-maker's tool or tongs, of a partial mold or former, an interior block or retainer, and a blow-pipe constructed and arranged substantially as described, whereby the molded parts of a blank

are held in shape while the other portions are being finished by blowing.

3. The combination, with a glass-maker's tool or tongs, of a sectional mold, an interior
5 block or retainer, and a blow-pipe, said mold being of such size and configuration as to mold only the upper half of the article blown therein.

4. The combination, with a glass-maker's tool or tongs, of a sectional mold, one end of
10 which is open and bell-shaped, while the other

end is shaped to conform with the outline of the blank to be placed therein, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of March, 1886.

PHILIP ARBOGAST.

Witnesses:

A. A. MOORE,

THOS. A. CONNOLLY.