W. BECK.

GLASS-MOLDS.

No. 180,450. Patented Aug. 1, 1876.

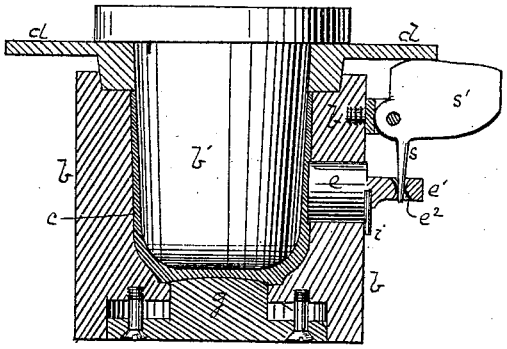

Fig. 1.

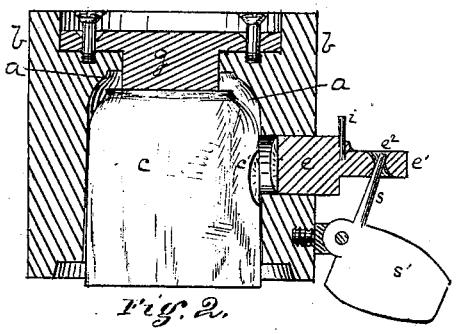

Fig. 2.

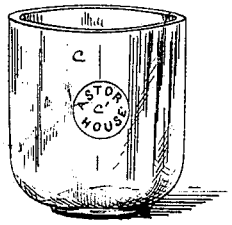

Fig. 3.

Witnesses

R. C. Wrenshall

Claudius L. Parker

Inventor: Washington Beck

By George H. Christy

his Atty.

UNITED STATES PATENT OFFICE.

WASHINGTON BECK, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN GLASS-MOLDS.

Specification forming part of Letters Patent No. **180,450**, dated August 1, 1876; application filed June 23, 1876.

To all whom it may concern:

Be it known that I, WASHINGTON BECK, of Pittsburg, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Glass Molds and Bowls; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which like letters indicate like parts.

Figure 1 is a vertical sectional view of my improved mold, and of a glass bowl pressed therein, with the plunger in elevation. Fig. 2 is a like view of the mold inverted for the discharge of the bowl; and Fig. 3 illustrates the product of the operation involved.

My improvement relates, chiefly, to the manufacture of hollow pressed glassware, wherein a figure, cut, monogram, or other design, is to be pressed or imprinted on the outer side or vertical wall or walls of the article to be made. For this purpose I make the design on the end of a die, and operate the latter through the sides of the mold, toward and from the axial line of the bowl-cavity, so that when forced in the die-face shall constitute a part of the cavity-wall, against which the molten glass is to be pressed, and so that, with a backward or reverse stroke of such die, it will clear the glass article, and offer no impediment to the removal of the latter from the mold.

My improvement can be used with any kind of mold ordinarily employed in pressing articles of glassware; but I design it chiefly for use in connection with what are known as solid or unjointed molds.

The mold *b* has a cavity, *a*, of any desired shape for the pressing of a hollow article of glassware, such as is shown at *c*, or of other form. The usual ring-plate *d* is employed, as also a movable bottom, *g*, and a plunger, *b'*.

In order to represent on the side wall of the bowl *c* a design, as shown at *c'*, or any desired figure, cut, monogram, name, or other design, I make use of a movable die, *e*, which plays loosely in a suitable hole in the side wall of the mold. This die *e* has on its inner face a representation or counterpart of the design to be pressed or imprinted into or onto the glass, and it is so arranged that while the pressing is being done its inner end shall constitute a part of the wall or face of the cavity, and so that after the article is pressed it may be shifted back out of the way of the discharge of the article from the mold. To this end I make the die *e* with a rear extension, e^1, which projects outside the mold, and has a hole, e^2, therein. In convenient proximity thereto I pivot on the side of the mold a bent lever, *s*, preferably weighted, and with the weight *s'* so arranged, by preference, that when the mold is in position for pressing, the lever *s*, passing through the hole e^2, will, under the action of the weight, force the die *e* forward to the pressing position. This position is fixed by means of a stop, *i*, inserted at the proper point. These parts are so shaped that the ring-plate *d* will engage the outwardly-bent arm of the lever, and prevent the pressure of the glass on the end of the die *e* from forcing such die backward while the pressing is being done, which latter is done in the usual way. When the plunger and ring-plate are removed, the mold is inverted, and the weight *s'* then operates to throw the die *e* back out of engagement or contact with the glass article *c*, as illustrated in Fig. 2. The weight of the movable bottom, or a slight jar, or both, will then suffice to effect the discharge of the glass article from the mold, with the desired design pressed on, or in the outer face of its vertical wall.

For the purpose of holding the die *e* forward while the pressing is being done, the bent lever may be so shaped as to be engaged by the spring-plate of the press, or by the foot-mold or bed-plate, as the mechanical equivalents of the construction described and shown, and the mode of effecting such arrangements of bent lever and moving die, so that the latter shall move through the lateral walls of a mold toward and from the axial line of the mold-cavity, in combination with a suitable stop at the limit of forward motion, will be readily understood by those skilled in the art.

The die *e* may be duplicated at one or more points around the mold.

I thus produce a finless or seamless bowl or cup-shaped article of glassware, having the name, monogram, or other proprietary mark of the owner thereon. Such an article is shown in Fig. 3. By the addition of an ordinary foot-

mold, finless or seamless goblets having such proprietary mark may be produced by the operation described.

The mode of making other hollow bowl-shaped finless articles of glassware with such mark thereon will be understood by the skilled workman.

I claim herein as my invention—

1. In combination with a glass-mold and a moving die passing through its side walls toward and from the axial line of its cavity, a weighted bent lever to effect the movement of the die, and a suitable stop to limit its inward motion, substantially as and for the purposes set forth.

2. A die, *e*, having a stop, *i*, arranged in the side wall of a mold, *b*, and a weighted bent lever, *s s'*, suitably arranged to engage a top or bottom plate of the mold while the pressing is being done, the combination being substantially as described with reference to the uses set forth.

In testimony whereof I have hereunto set my hand.

WASHINGTON BECK.

Witnesses:
CLAUDIUS L. PARKER,
GEORGE H. CHRISTY.