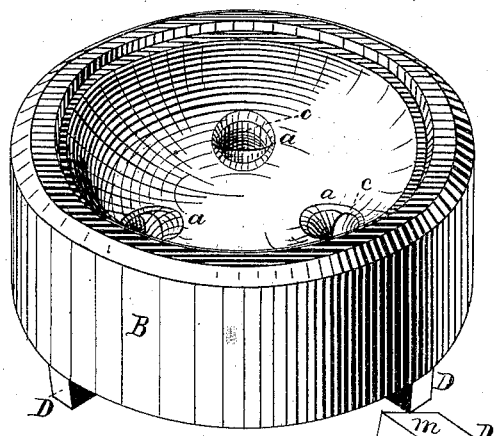
W. C. KING & A. SPERBER.

Glass-Mold.

No. 162,480. Patented April 27, 1875.

Fig. 1



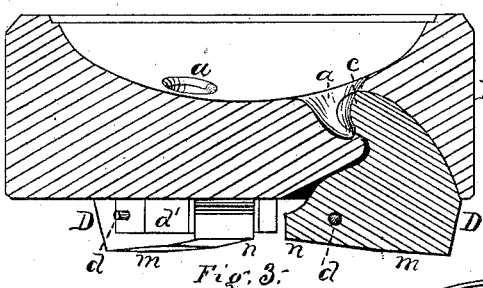


Fig. 3.

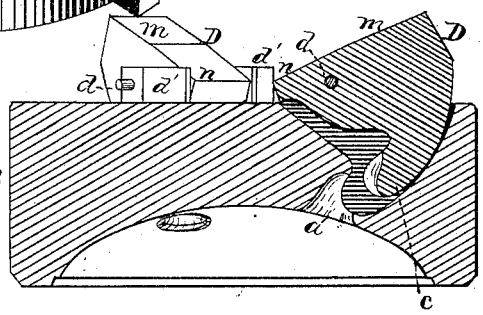


Fig. 4.

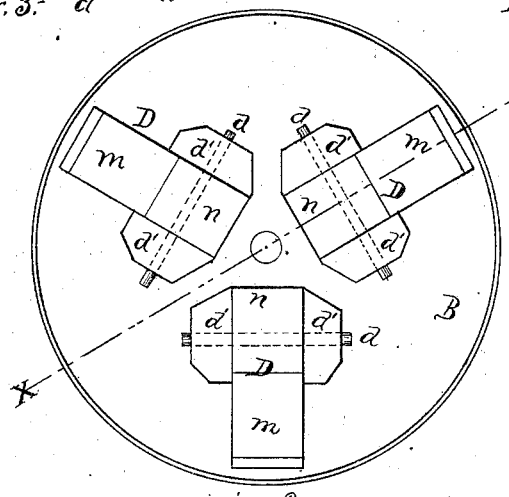


Fig. 2.

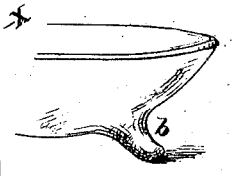


Fig. 5.

Witnesses: Cha's G. Page, Claudius B. Parker.

Inventors: William C. King, August Sperber, by George H. Christy their atty.

UNITED STATES PATENT OFFICE.

WILLIAM C. KING AND AUGUST SPERBER, OF PITTSBURG, PENNSYLVANIA, ASSIGNORS TO KING, SON & CO., OF SAME PLACE.

IMPROVEMENT IN GLASS-MOLDS.

Specification forming part of Letters Patent No. 162,480, dated April 27, 1875; application filed February 27, 1875.

To all whom it may concern:

Be it known that we, WILLIAM C. KING and AUGUST SPERBER, of Pittsburg, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Glass-Molds; and we 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 indicating like parts—

Figure 1 is a perspective view of the lower or female part of a glass-mold, such as is used in pressing nappies, and embracing the features of our present improvement. Fig. 2 is a bottom plan view thereof. Fig. 3 is a sectional view through *x x*, Fig. 2, with the hinged part of mold in position for the pressing of the article to be made. Fig. 4 is a like view, but inverted, with the hinged part in position for the discharge of the pressed article from the mold; and Fig. 5 shows in perspective a part of section of a footed nappie or bowl as pressed in our improved mold.

Our improvement relates to the manufacture of hollow or bowled articles of pressed glassware, with separate feet or legs, three or more, pressed thereon. Such feet or legs have heretofore commonly been made separately, and stuck onto the article made, or they have been pressed along with the article in jointed or two or three part molds; but by our improvement we make such feet and legs of any desired form in a mold, the body part of which is solid or unjointed, so that such feet or legs may be pressed onto, and at one operation with, a finless body. And in order that, after being so pressed, they may be discharged from the mold, we pivot in or to the body of the mold so much thereof as forms the re-entrant face of the foot or leg cavity, in such manner that, while the pressing is being done, the mold-cavity shall be closed up on all sides, and on the inversion of the mold the hinged re-entrant part of the mold may be thrown out or back, and leave a free passage-way for the discharge of the foot or leg so formed. The lower or female part of an unjointed mold for pressing a nappie is represented at B. With it is to be used the ordinary form of ring and plunger for forming the inside of the article.

In this mold we have shown cavities *a a a*, for forming three feet or legs on the article to be made. The bottom of the mold is mortised under and outside of these foot and leg cavities, as represented in Figs. 3 and 4, and in these mortises we hinge or pivot the mold-sections D. These mold-sections have each a hook-shaped extension, *c*, the end or face of which closes up the open side of the foot or leg cavity *a*. Each face *c* has in horizontal section any desirable shape; but in vertical section some part of it extends inwardly (when it is in place for pressing) beyond the extreme outer or lower point of the foot or leg cavity *a*. It will then be obvious that a foot or leg like that shown at *b* may be pressed in and delivered from a mold so constructed, and that by a suitable variation in the arrangement of the mortises and mold-sections, other form of foot or leg, any side of which diverges outwardly from an axial line passing through it parallel with the axial line of the bowl, may be pressed and delivered by a like mode of operation. Then to discharge the article so pressed the mold-sections D are rotated on their pivots or hinges *d*, so as to carry the extended re-entrant faces *c* back from the cavities *a*, and thereby leave a free passage-way for the discharge of the feet or legs so formed. The pivots or hinges *d* may be in the body of the mold, or through lugs *d'* attached below.

In other respects than those described the forms and relative arrangement of the parts named may be varied as the skilled workman may desire. And our improvement may be advantageously applied generally to unjointed molds for pressing hollow articles of glassware, by such changes as will be within the judgment and skill of glass-workers.

But with the arrangement of devices shown in the drawing, and which we believe to be the best, when the mold is placed in position for pressing the extensions *c* will thereby be brought into place, as shown in Fig. 2, so as to close up the open sides of the cavities *a*, and form the re-entrant face of the leg or foot. And for this purpose it is better to raise the faces of the lower outer ends of the mold-sec-

tions D, as shown at *m*, so that most or all the weight of the mold shall come thereon, in which case the greater the pressure applied in pressing the tighter will be the joint at the intersection of the extensions *c* and cavities *a*, with consequently a less fin; and to conceal such fin, so as practically to produce a finless article, a rib, fluting, or molding, or other form of ornamentation, may be arranged along such joint. After the pressing is done the mold is inverted, as shown in Fig. 3, and by pressure applied at the points *n* the mold-sections are rotated in their mortises, so that the extensions *c* shall be out of the way of the discharge of the feet or legs thus pressed.

It will be seen that by the construction described the movable parts of the mold are closed up and held in place by the weight of the mold itself, and by the power applied in pressing, which feature we believe to be entirely new.

Like hinged devices may be employed in connection with glass-molds, having an unjointed body generally for forming a re-entrant part in the article to be made at any desired point, so that, swinging outward after the article is pressed, it shall permit of the discharge of the article, in the manner substantially as indicated.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. A glass-mold having a part of the working-face of its cavity, intermediate between its upper and lower ends, hinged or pivoted, such part swinging into position preparatory to pressing, and swinging out or back to permit the discharge of the article pressed, substantially as set forth.

2. In combination with a glass-mold, a series of pivoted or hinged mold-sections, each of which, swinging in a vertical plane, carries an extension, *c*, for forming, when in position for pressing, a re-entrant part of the article to be made, and by swinging clear of such position, leaving an open path for the discharge of the part so formed, substantially as set forth.

3. The mode of closing up and holding in place the movable parts of the cavity of a glass-mold, by resting the mold on such movable parts or some extension thereof outside the pivoting-point, whereby an increased tightness of joint shall be secured by increased pressure, substantially as set forth.

4. The arrangement of the hinged mold-sections D, whereby they will automatically close the cavities they help to form when the mold is set in position for pressing, substantially as set forth.

In testimony whereof we have hereunto set our hands.

WILLIAM C. KING.
AUGUST SPERBER.

Witnesses:
JOHN P. HEISEL,
JOSEPH MCCOY.