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J. E. MILLER.

Molds for the Manufacture of Hollow Glass-Ware.

No. 154,184. Patented Aug. 18, 1874.

Fig. 1.

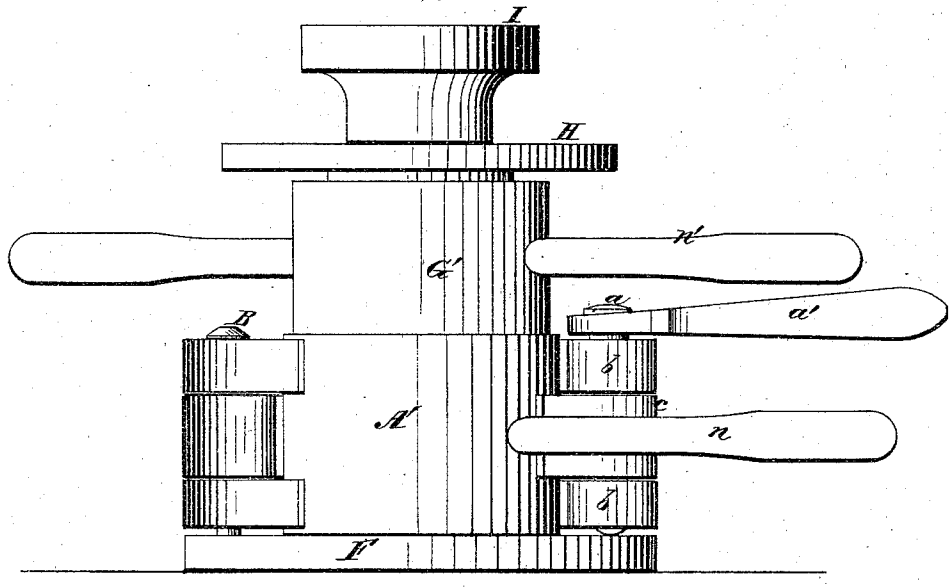

Fig. 2.

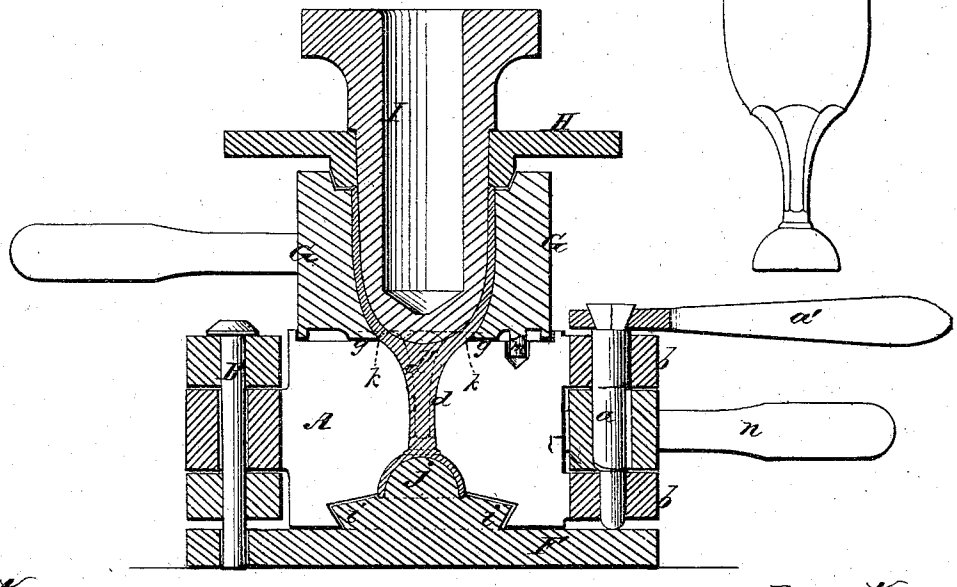

Fig. 3

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Fig. 4

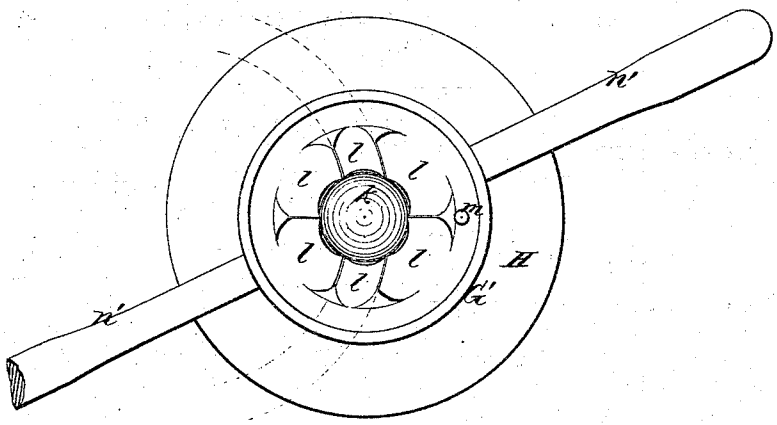


Fig. 6

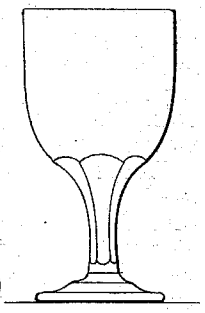
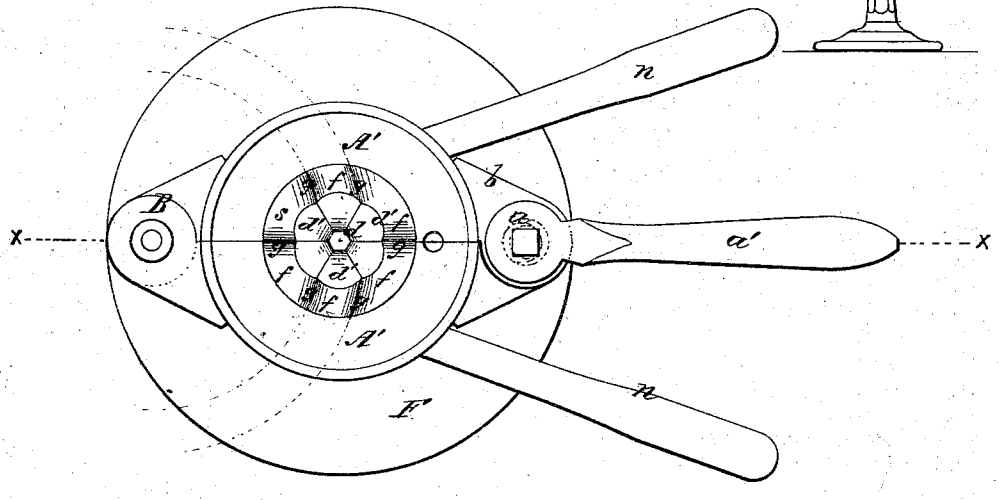


Fig. 5



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UNITED STATES PATENT OFFICE.

JOHN E. MILLER, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN MOLDS FOR THE MANUFACTURE OF HOLLOW GLASSWARE.

Specification forming part of Letters Patent No. **154,184**, dated August 18, 1874; application filed June 26, 1874.

To all whom it may concern:

Be it known that I, JOHN ERNEST MILLER, of Pittsburg, county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Molds for Manufacturing Pressed Glassware having arched legs or standards with fluted surfaces; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of my improved mold. Fig. 2 is a transverse section of the same in the line *x x* of Fig. 5. Fig. 3 is a side view of a wine-glass which the mold represented will produce. Fig. 4 is an inverted view of the cylinder or upper section of the mold. Fig. 5 is a top view of the leg or lower section of the mold. Fig. 6 is a view of the wine-glass finished, its foot portion having been spread out by heating.

The nature of my invention consists, first, in the lower jointed and fluted section of the mold formed on top with male arches, the major portion of the bases of which are adjoined on lines which are concentric with one or more circles struck from the center of the hinge-joint of the mold, and the minor portion of their bases adjoined on a line radial with the center of said hinge-joint of the mold, in combination with the upper bowl-section of the mold, formed with a central orifice through it, and with female arches, matching the male arches, formed on its under side and around the central orifice. Second, it consists in the combination of the projection on the base of the mold with the leg and bowl sections, constructed as hereinafter described.

By my invention the lower or leg section can be opened while the upper or bowl section of the mold is upon it, and an arched leg or standard, having a fluted surface, and closely resembling cut ware, adjoined to the bowl portion, can be produced, and at the same time the foot portion may be molded with a hollow in its under side to facilitate the forming by reheating of the foot proper; and the whole operation can be carried on very expeditiously, and without any of the liability of stretching or deforming the article as is experienced in the use of molds which have the bases of all the arches adjoin on lines radial with the center of the mold.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

A A′ is the lower section of the mold, which is divided centrally in a vertical plane, and its two parts hinged together at B, and drawn forcibly together by means of an eccentric pin, *a*, passed through lugs *b b* on the part A and the lug *c* on the part A′, and turned by a handle, *a′*, attached to its upper end, as shown in the drawings. The section of the mold A A′ is made with a central upward-flaring passage, *d*, through it, and the surface or wall which surrounds this passage is fluted, as at *d′*, these flutes terminating in arches *f f*, formed on the top of the mold around the flaring passages, and the major portion of the bases *g g* of said arches being adjoined on lines which are parts of concentric circles struck from the center of the hinge-pin of the two halves of the mold, as will be evident from the dotted segments of circles on the drawings, while the minor portion of the bases of the arches adjoins on a line radial with the axis of said hinge-pin of the two halves of the section of mold A A′. The arches terminate laterally in an annular shallow chamber formed in the top of the mold, as represented. The mold-section A A′ is arranged upon and hinged to the base-plate F, which is formed with a central circular projection, *i*, surmounted by a central semi-spherical projection, *j*, of smaller diameter, as shown. The projection *i* is dovetailing, and fits a corresponding groove cut around a central cavity of the mold A A′, and the projection *j* extends up into a semi-spherical molding-cavity of the mold A A′, and produces a hollow, as illustrated, on the under side of the portion of glass which is to form the foot of the articles molded. G is the bowl-section of the mold, constructed with a mold-cavity for forming the bowl of a glass article, and with a reduced central orifice, *k*, through its lower end. The edges of this orifice are fluted, and these flutes run outward on the under side of the mold-section G into female arches *l l*, which exactly match the arches of the lower section, as shown in Figs. 2 and 4. These female arches also terminate laterally in an annular chamber or cav-

ity of the upper section of the mold, as shown. The section of mold G is placed upon the section A A′, and is held in position by a pin, *m*, permanently affixed to the former, and made to enter a hole formed in the latter at the point where the halves of it adjoin when brought together. H is the follower and I the plunger used in connection with the mold during the operation of pressing a hollow glass article, such as represented in Fig. 3. The sections A A′ and G are, as usual, provided with handles *n n n′*, by which they are manipulated.

From the foregoing description it will be seen that, when the glass article is molded in the sections A A′ and G, the section A A′ can be opened while the section G is in position, for the male arches will slip through the female arches when the halves of the mold-section A A′ are opened. When the lower section of mold A A′ is opened the upper section can be removed, and the article removed from it in the usual manner. After the article is removed its lower end is reheated, and the hollowed foot spread out, as shown in Fig. 6.

I am aware that Joseph Magouan obtained a patent September 25, 1847, for a mold the lower section of which opens and shuts on a hinge-joint. I also am aware that A. M. Baggs obtained a patent December 24, 1873, for a mold the lower section of which opens and shuts on a hinge-pin; but in both of these patents the scallops or projections which form the junction between the upper and lower sections of the mold are adjoined on lines which are radial to the axis of the mold-cavity, and therefore the act of opening the lower section of the mold causes a strain to come upon the article of glass between its foot and body, the effect of which is very injurious to the glassware. The strain is due to the elevation of the upper section of the mold by the contact of the scallops or projections of the lower section with the projections of the upper section during the act of opening the lower section. My invention of adjoining the projections on lines concentric with the axis of the hinge of the mold obviates this completely, and therefore, while I do not claim the invention embraced in the patents above referred to,

I claim as new—

The combination of the male arches *f* on the top of the lower jointed and fluted leg-section A A′ of the mold and the female arches *l* on the under side of the upper bowl-section G of the mold, said arches having the major portion of their bases adjoined on lines concentric with the center of the hinge-pin B of the section A A′ of the mold, and the minor portion of their bases adjoined on a line radial to the center of said pin, substantially as and for the purpose set forth.

JOHN ERNEST MILLER.

Witnesses:
JOHN KLIEN,
JAMES D. REED.