

(No Model.)

J. J. BRANNAGAN.  
MANUFACTURE OF GLASSWARE.

No. 504,552.

Patented Sept. 5, 1893.

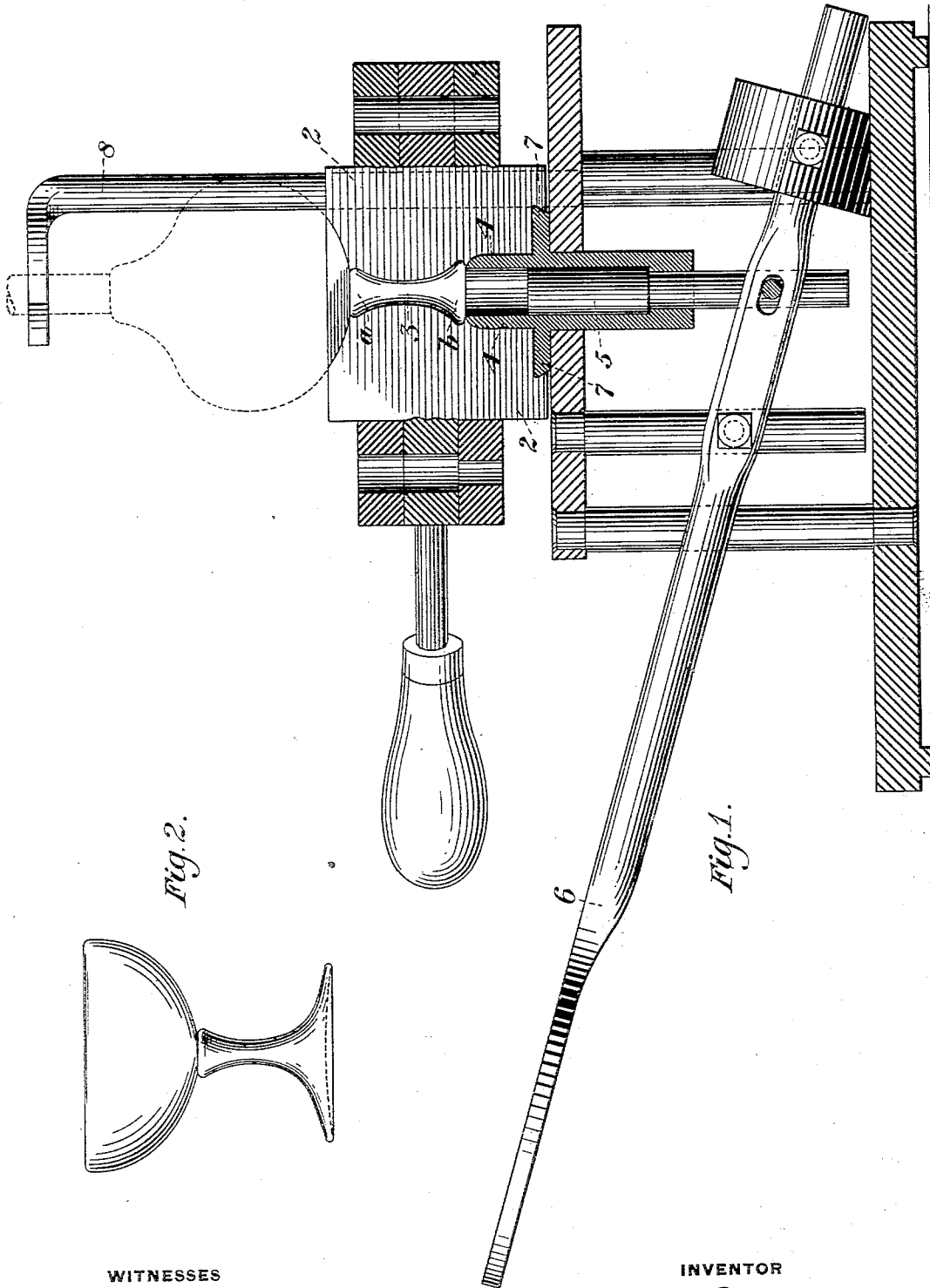


Fig. 2.

Fig. 1.

WITNESSES

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# UNITED STATES PATENT OFFICE.

JOHN J. BRANNAGAN, OF MARTIN'S FERRY, OHIO.

## MANUFACTURE OF GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 504,552, dated September 5, 1893.

Application filed October 29, 1892, Serial No. 450,334. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN J. BRANNAGAN, of Martin's Ferry, in the county of Belmont and State of Ohio, have invented a new and useful

Improvement in the Manufacture of Glassware and Molds Therefor, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section through my improved apparatus. Fig. 2 is a side elevation of the finished article of glassware.

The objects of my invention are to provide rapid and efficient methods of and means for making articles of glassware, such as goblets, having foot, stem and bowl.

In the accompanying drawings, 2 represents a stem-mold, which may be made of two parts hinged together, and has a matrix cavity 3 of the shape of the stem to be formed therein, said cavity being preferably flared somewhat at the ends, as at *a, b*, to constitute enlargements at the places of juncture of the stem with the bowl and foot. This mold 2 is adapted to fit upon and register with a cylinder 4, in which works a plunger 5 operated by suitable means, such as a foot-lever 6, to force molten glass from the cylinder up into the stem-cavity. The preferable construction of these parts is shown in Fig. 1, 7 being a rim or flange surrounding the cylinder and constituting a base on which the mold 2 rests. At the top of the cavity 3, the mold 2 has a dishd surface corresponding in contour to the base of the bowl to which the stem is to be applied.

The operation is as follows: The bowl of the goblet or other article is blown in a paste mold, and then with the blow-pipe still attached thereto, and without need of reheating, it is placed upon the top of the mold 2, this mold having previously been closed and a gathering of glass, sufficient to make the stem, having been put in the cylinder 4. To center the bowl in position, I prefer to use an

upright guide-frame 8 for the blow-pipe. The blower then depresses the foot-lever 6, whereupon the ascent of the plunger 5 forces the glass up into the stem-cavity, forming the stem and causing it to adhere to the bottom of the bowl at the top of the stem-cavity. The stem-mold may then be opened, and the glass article, having bowl and stem united, removed. The next operation is that of applying the foot, which is made separately, preferably off-hand, and is applied, when hot and plastic, to the lower end of the stem and is caused to adhere thereto. The blow-pipe may then be detached, and the mouth of the goblet finished in the usual way.

By means of my invention I am enabled to cheapen the manufacture of such articles of glassware and to produce articles of better appearance than has been possible with the methods heretofore commonly used.

I am aware that it is not new to form articles of glassware by uniting a blown body to a pressed stem and I do not desire to claim the same broadly.

Without limiting myself strictly to the construction of the apparatus herein described, I claim—

1. The method of making articles of glassware having bowls, stems and feet, which consists in blowing the bowl in a paste mold, pressing a stem against the bowl, and then applying a foot to the end of the pressed stem; substantially as described.

2. The method of making articles of glassware, having bowls, stems and feet, which consists in blowing the bowl, pressing a stem against the bowl, and then applying a foot to the end of the pressed stem; substantially as described.

In testimony whereof I have hereunto set my hand this 17th day of October, A. D. 1892.

JOHN J. BRANNAGAN.

Witnesses:

JAMES MCCAFFREY,  
L. W. DUFF.