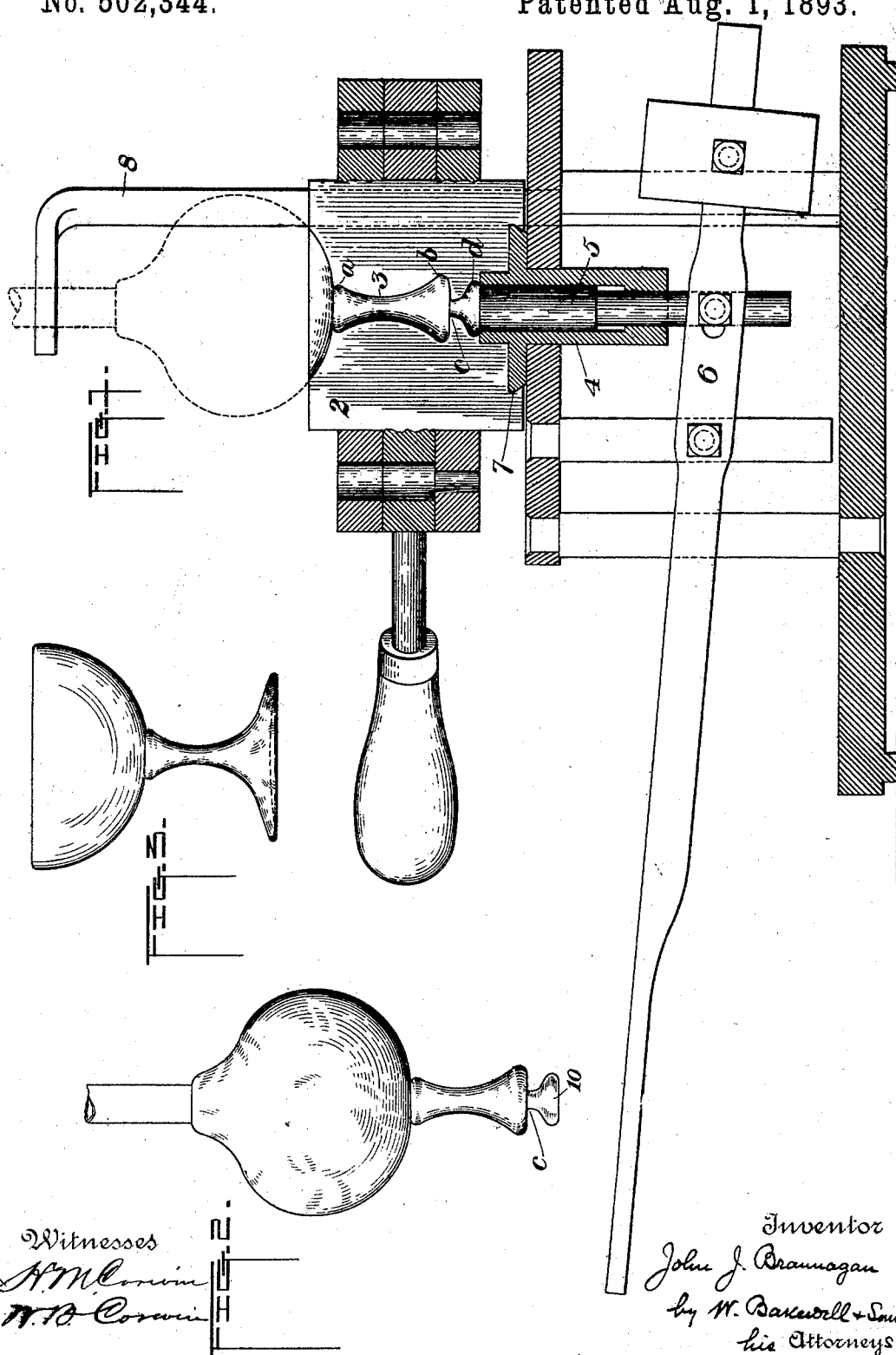


(No Model.)

J. J. BRANNAGAN.
METHOD OF FORMING ARTICLES OF GLASSWARE.

No. 502,344.

Patented Aug. 1, 1893.



Witnesses

A. M. Corwin
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UNITED STATES PATENT OFFICE.

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

METHOD OF FORMING ARTICLES OF GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 502,344, dated August 1, 1893.

Application filed January 26, 1893, Serial No. 459,776. (No specimens.)

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 Methods of Forming Articles of Glassware, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section through the mold. Fig. 2 is a side elevation of the article of glassware, the stem being united to the body. Fig. 3 is a like view of the finished article.

The object of my invention is to provide a rapid and efficient method and means for making multiple part glassware, such as goblets or other vessels having foot, stem and bowl.

I will now describe my invention so that others skilled in the art to which it appertains may employ the same.

In Fig. 1 of the accompanying drawings, 2 represents a stem mold, which may be of two parts hinged together. This mold has a matrix cavity 3 of the shape of the stem to be formed therein which cavity may be flared somewhat at and near the ends, as at *a*, *b*, to constitute enlargements at the places of juncture of the stem with the bowl and foot. Below the enlargement *b* in the mold is a contraction *c*, below which the cavity is again enlarged, as at *d*. This mold 2 is adapted to fit upon and register with a cylinder 4, in which works a plunger 5, operated by a foot-lever 6 or other suitable means, 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 dish 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, lamp, 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, a little more than 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. Owing to the contraction *c* and enlargement *d* of the mold-cavity, a button 10 is formed on the lower end of the stem, which button is composed of any surplus glass which may be placed in the mold, and it is against this glass composing the button that the plunger presses in forming the stem. The action of the plunger pressing on the glass is to crinkle the same at the point of contact, the glass cooling at this point. As this button, however, is not designed to form a part of the stem, it is broken off when the stem is removed from the mold, which may easily be done at the narrowed portion above the button, which is formed by the contraction *c* in the mold-cavity. After the stem is removed from the mold and the button 10 is separated from the stem, 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 produce articles of glassware having stems of an equal size and length, all surplus glass being taken up by the button 10.

Although I have described the bowl of the article as being blown, and have also described certain apparatus for pressing the stem, I do not desire to limit my invention to the manufacture of articles having a blown body; nor do I desire to limit myself to the use of the particular apparatus shown and described.

The advantages of my invention will be appreciated by those skilled in the art.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The method of making articles of glass-

ware having bodies, stems and feet, which consists in forming the body, pressing a stem against the body and forming a separable button on the end of the stem, separating the
5 button from the stem, and then applying a foot to the end of the stem; substantially as described.

2. The method of making articles of glass-ware having bowls, stems and feet, which
10 consists in blowing the bowl, pressing a stem against the bowl and pressing a button on

the end of the stem, separating the button from the stem, and then applying a foot to the end of the pressed stem; substantially as described.

In testimony whereof I have hereunto set
my hand.

JOHN J. BRANNAGAN.

Witnesses:

W. B. FRANCIS,
F. R. SEDGWICK.