

(No Model.)

P. J. McDONOUGH & T. E. SHELLY.
METHOD OF AND APPARATUS FOR MAKING ARTICLES OF GLASSWARE.
No. 586,388.

Patented July 13, 1897.

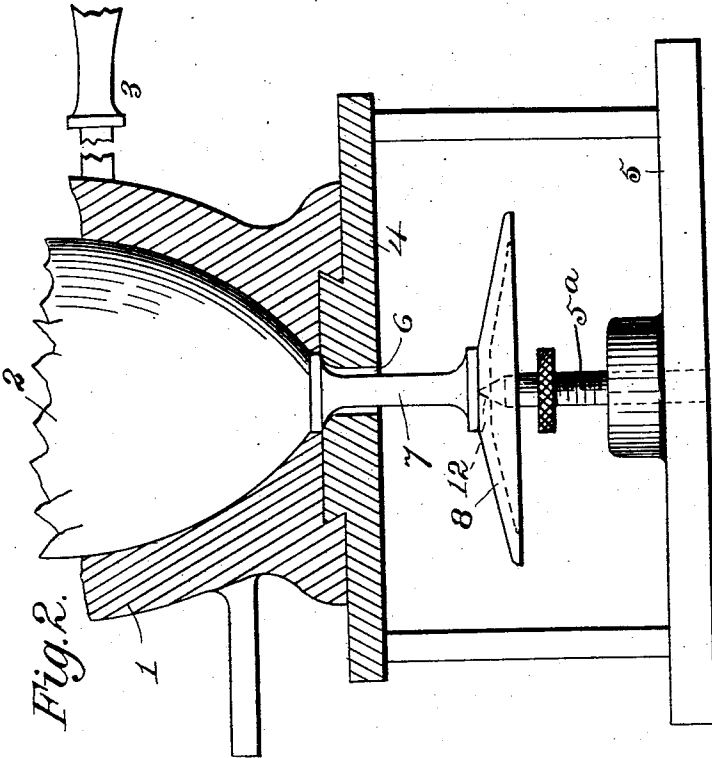


Fig. 2.

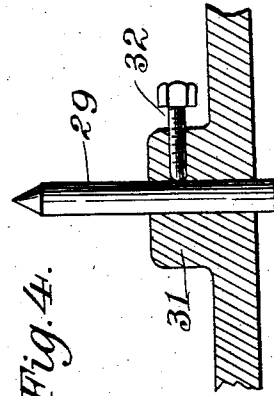


Fig. 4.

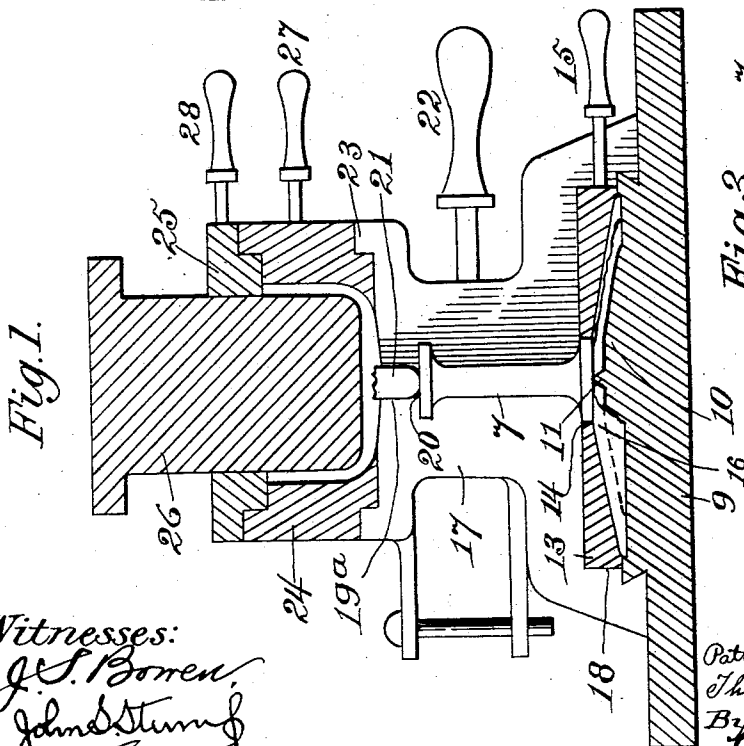


Fig. 1.

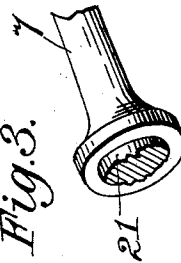


Fig. 3.

Witnesses:

J. S. Boren
John Stumm

Inventors:
Patrick J. McDonough
and
Thomas E. Shelly
By *C. J. Bell*
Atty.

UNITED STATES PATENT OFFICE.

PATRICK J. McDONOUGH AND THOMAS E. SHELLY, OF BELLAIRE, OHIO.

METHOD OF AND APPARATUS FOR MAKING ARTICLES OF GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 586,388, dated July 13, 1897.

Application filed April 21, 1897. Serial No. 633,133. (No model.)

To all whom it may concern:

Be it known that we, PATRICK J. McDONOUGH and THOMAS E. SHELLY, citizens of the United States, residing at Bellaire, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Methods of and Apparatus for Making Articles of Glassware, of which the following is a specification.

This invention relates to the manufacture of glassware, and particularly to such class of ware having bowls, stems, and feet.

The prime object of the invention is to provide methods and means of forming a stem and foot complete in one and the same piece and by one and the same operation and to form the overflow or surplus glass on the stem in such a manner that the stem, foot, and surplus glass may be removed from the mold in one piece, the said glass broken off, and the bowl blown to the broken surface of the stem, so that every stem and foot may be left complete, equal in size, and uniform in weight and thickness, and a fractured or broken surface presented on the end of the stem, to which the bowl may be more readily and firmly blown.

A further object of the invention is to provide new and improved means for pressing the feet of such glassware complete with the stem without a seam or ridge on the exposed surface of the feet and stems.

In the accompanying drawings, forming part of this application, Figure 1 is a central vertical section of the press-mold, partly broken away, showing the stem and foot pressed into shape. Fig. 2 is a similar view, partly broken away, showing the bowl blown to the stem. Fig. 3 is a perspective view of the broken or fractured end of the stem. Fig. 4 is a sectional view of a modified form of adjusting means.

The same numeral-references denote the same parts throughout the several figures of the drawings.

The mold 1, in which is blown the bowl 2, is of the usual open-and-shut form, having a handle 3 and a suitable base 4, supported on a frame 5 and provided with an aperture or opening 6.

The mold for pressing the stem 7 and foot

8 consists of a base 9, having a raised portion 10 to form a concavity in the bottom of the foot, said raised portion being provided with a teat 11 to form a notch or depression 12 in the center of the said cavity. A solid ring 13, having a central hole 14 and a handle 15 and a beveled inner surface 16, rests on the base 9 and surrounds the raised portion 10, with an interval of space between the beveled surface of the ring and said raised portion, in which the foot is formed without a seam, ridge, or other abrasion on its outer or exposed surface.

The open-and-shut mold 17 has a bottom cavity 18 to accommodate the ring 13, a central bore in which is formed the stem 7, and a gate or opening 19^a, contracted at 20 to hold the overflow or surplus glass 21, which accumulates after the stem and foot is completed. This mold is provided with a suitable handle 22 and a peripheral flange 23, within which a solid ring 24 is placed, having a solid detachable cover or top plate 25, through which a plunger 26 is operated. The ring 24 has an operating-handle 27, and the cover-plate 25 is provided with a similar handle 28.

The frame 5 is provided with a screw 5^a, the point of which engages the notch 11 in the foot, whereby the latter is adjustably held in position to have the bowl applied.

A modified form of adjusting means is shown in Fig. 4. Herein a pin 29 is adjustably secured in an enlargement 31 of the frame by a set-screw 32.

The operation is as follows: The glass is pressed through the gate 19^a from the ring 24 until the central bore 19 and interval or space between the raised portion 10 and the beveled surface 16 of the ring 13 is filled, which completes the stem and foot in one piece by one and the same operation, and the surplus or the glass not required in forming said stem and foot is formed on the end of the stem in the said gate. The mold 17 is opened and the ring 13 lifted off over the top of the stem, the ring-aperture being larger than said stem-top, and said complete stem and foot, with the surplus glass adhering thereto, is removed, and then the surplus glass is broken off at the contracted point 20, leaving the stem end in a fractured or roughened condition. Then

the stem is placed in the base 4 of the bowl-mold and adjustably supported in proper position on the screw 29 and the bowl blown to the fractured surface of the stem.

5 It will be observed that by employing the solid ring 24 there is no opening or exit for the glass under pressure except through the gate into the stem-bore, and inasmuch as the entire pressure of the plunger is against the
10 walls of the ring 24 the split mold 17 is not forced open in the least. Consequently there is no seam or ridge left on the stem.

It is obvious that by providing a gate or receptacle for surplus glass the stem and feet
15 are always made of equal size and thickness and a bowl or other article may be applied to the end of the stem, as desired. The uniting of the bowl to the stem is made more firmly, readily, and of greater strength by applying
20 the bowl to the fractured surface of the stem, inasmuch as the glass will unite more quickly and without blow-holes.

It will be understood that but one operation will be required to produce the stem and
25 foot in one complete piece. The bowl is then blown to the stem, the top edge of the bowl is cracked or broken off, and said edge is fire-polished, which completes an article of glassware, as described.

30 Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The method of making articles of glassware having bowls, stems, and feet, which
35 consists in forming the stem with a complete foot on one end and surplus glass on the other end, fracturing the stem end by removing the

surplus glass, and then applying the bowl to said fractured end, as set forth.

2. The method of making articles of glassware having bowls, stems, and feet, which
40 consists in pressing the stem in a suitable mold with a complete foot on one end and surplus glass on the other end, breaking off the surplus glass, then blowing the bowl to the
45 broken-off surface of the stem, as set forth.

3. A stem and foot press-mold comprising open and shut portions, a solid ring having a cover, and seated in the top of said portions, and a plunger operated through said cover in
50 said ring, as set forth.

4. In a stem and foot press-mold, the combination with the open and shut portions, of a ring in the top of said portions, a ring in the bottom of said portions, and a plunger
55 operated in the said top ring, as set forth.

5. An apparatus for pressing the stems and feet of articles of glassware, comprising a base having a raised portion, a ring having a central aperture and surrounding the raised portion
60 with an interval or space between said portion and ring, a split mold having a central bore and a gate contiguous with the bore and inclosing the ring, a solid ring upon the split mold and having a cover and a plunger
65 adapted to be operated through the cover in said solid ring, substantially as set forth.

In witness whereof we hereunto set our hands in the presence of two witnesses.

PATRICK J. McDONOUGH.

THOMAS E. SHELLY.

Witnesses:

J. F. MELLOTT,
D. W. COOPER.