

(No Model.)

W. FOX.
Manufacture of Handled Glassware.

No. 232,886.

Patented Oct. 5, 1880.

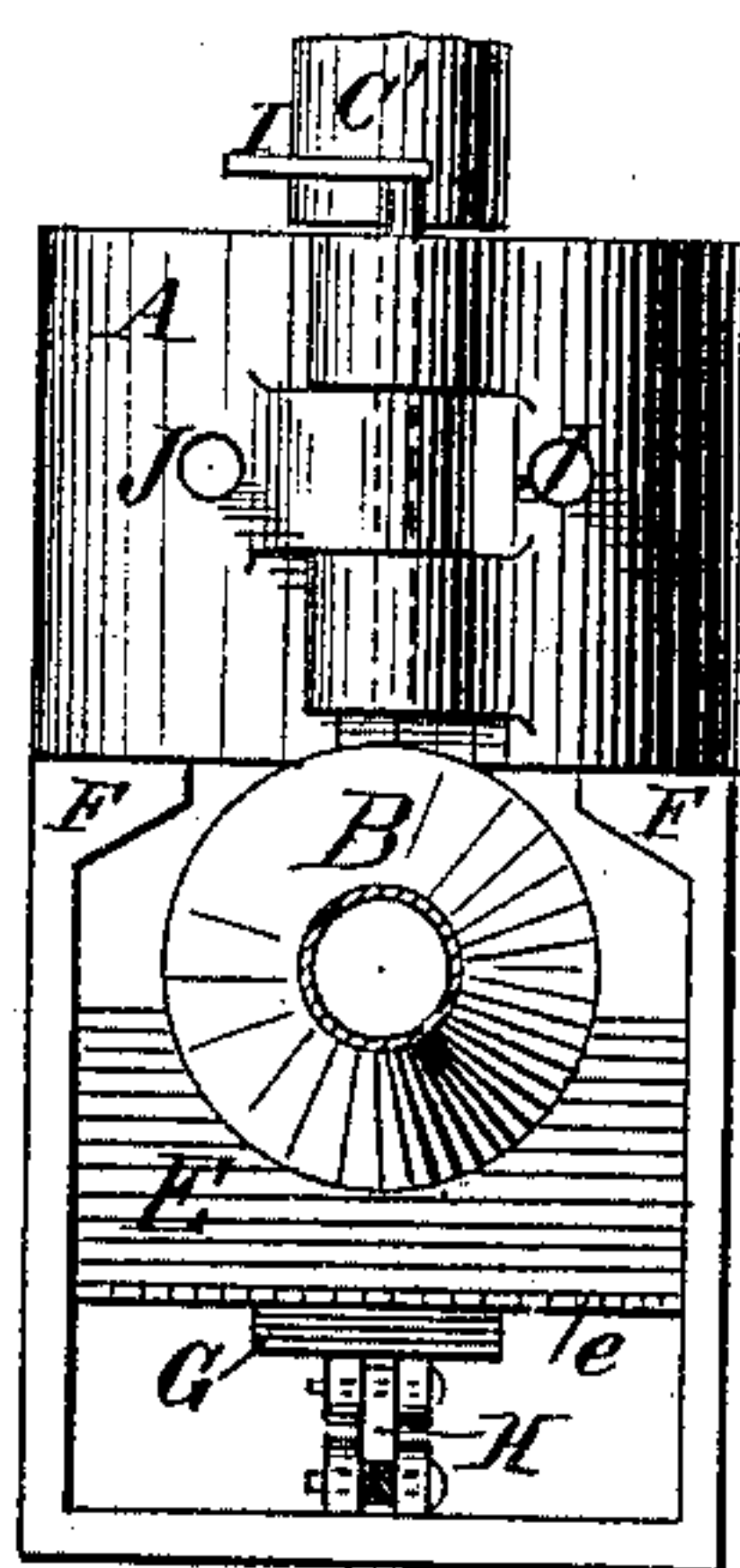


Fig. 1.

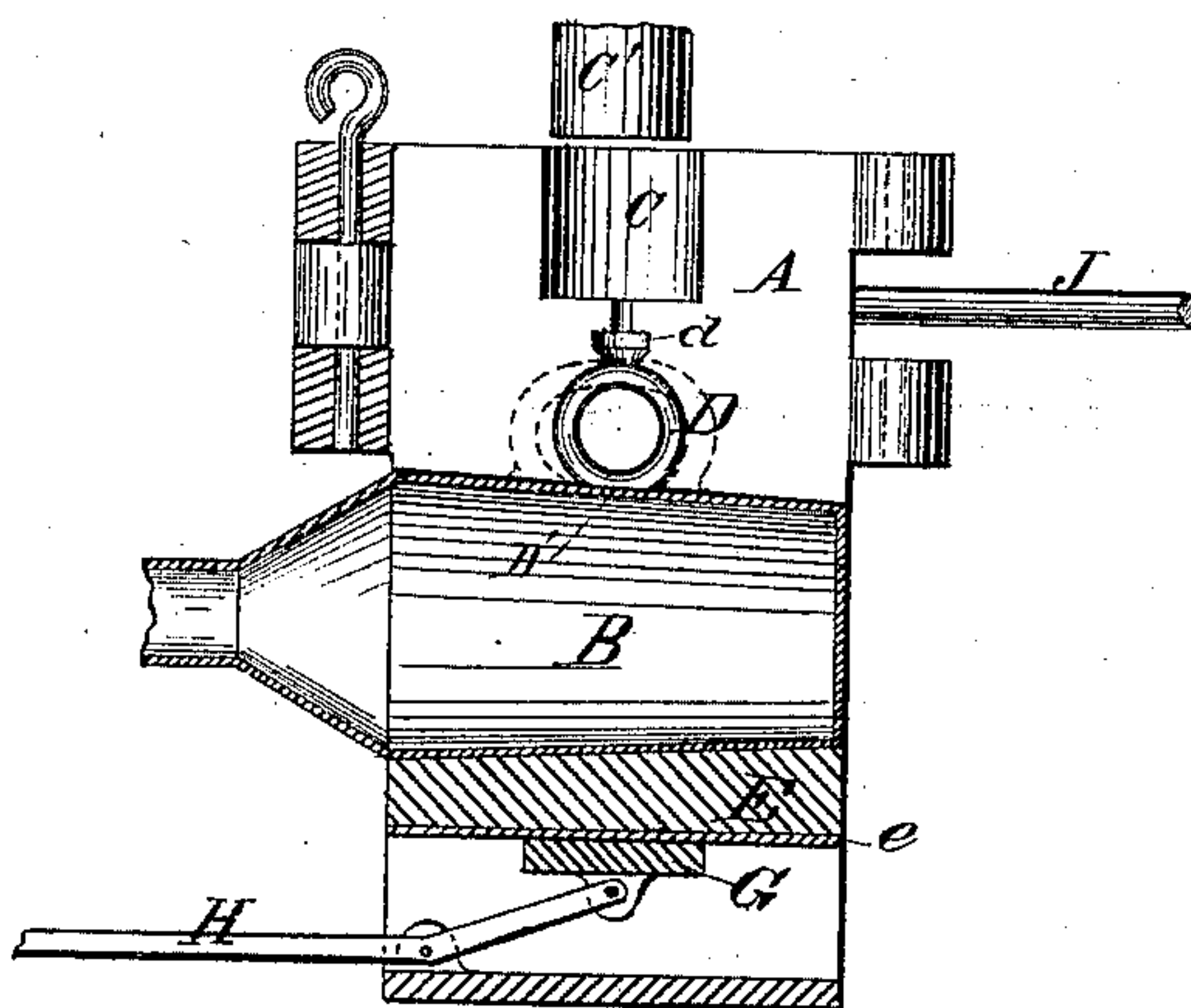


Fig. 2.

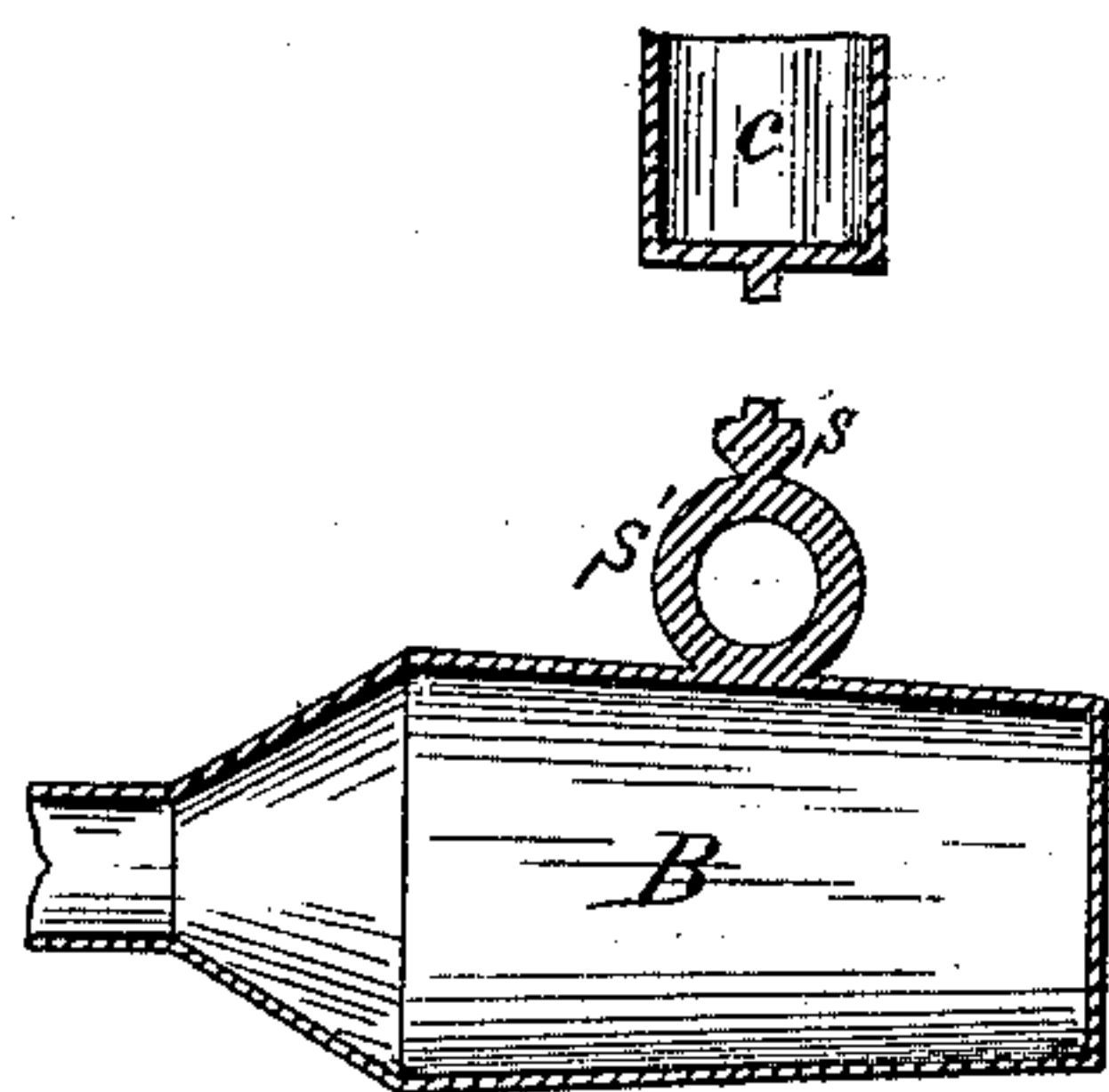


Fig. 4.

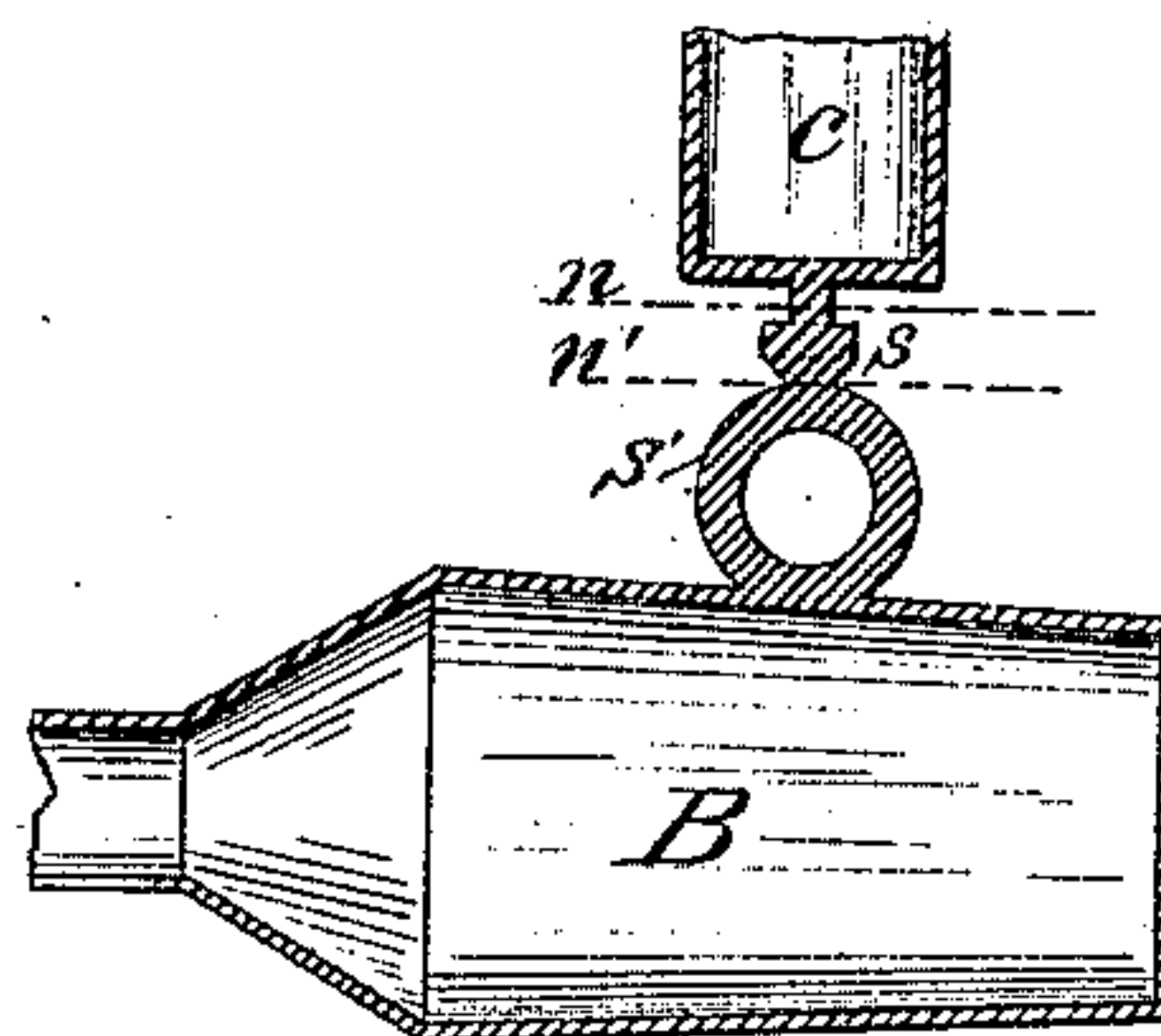


Fig. 5.

Witnessed.

C. L. Parker
R. A. Whittlesey

Inventor William Fox,
By Attorney George H. Christy

UNITED STATES PATENT OFFICE.

WILLIAM FOX, OF STEUBENVILLE, OHIO, ASSIGNOR TO HIMSELF AND
R. J. BEATTY, OF SAME PLACE.

MANUFACTURE OF HANDLED GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 232,886, dated October 5, 1880.

Application filed July 2, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FOX, of Steubenville, county of Jefferson, State of Ohio, have invented or discovered a new and useful Improvement in Manufacture of Handled Glassware; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a front end elevation of a mold and apparatus embodying my present invention. Fig. 2 is a face view of one-half of the two-part open-and-shut mold which I employ for making the handle, and a sectional view of the rest of the apparatus, and showing the article in place; and Figs. 3 and 4 illustrate, by sectional views, the product and the manner of further finishing the same.

My present invention relates to the making and attaching of handles to articles of glassware, either blown or pressed, and if blown either with or without a mold.

Heretofore such handles have been stuck on and shaped by hand after the article was otherwise finished, or during the finishing of the same; but as the handle is then hand-made it is difficult to secure perfect symmetry and ornamental shapes except at considerable expense. It is also old in the art to press a handle separately, insert it in the cavity in the wall of a blowing-mold, and blow the article onto the handle; but this leaves fin or other marks on the bowl. Also, the handle and bowl have been pressed together at one operation; but in such work the same difficulty is met with. And it is also old to combine with a jointed blowing-mold a supplemental press arranged in the mold-wall so as to press a handle on while the article is still in the mold, the difficulty remaining the same; also, in such apparatus, as the stroke of the plunger was parallel with the mold-wall, and as the handle had two points of contact and union with the article at different distances from the plunger, it was difficult to get the proper pressure at the point of contact where the resistance was greatest without getting too much pressure at the other point of contact, and thereby spoiling the work.

In my apparatus, A represents an ordinary two-part jointed mold, in each of the faces of which I make the one-half of a plunger or pressing-cavity, C, in which to operate in any known way a plunger, C', and also a handle-cavity, D, of ring form, as shown in full lines, open on its lower side at the bottom of the mold, as at D', so as to give a place for contact and union; or the cavity may be of the form shown in dotted lines, so as to give two points of contact and union for the handle and article; but as to the form of the handle-cavity I do not limit myself, as it may be of any desired form capable of being pressed, and plain or ornamental, and with one or more openings beneath, through which to effect a union with the article.

The cavities C and D are united by a reduced gate, port, or passage, d, large enough for the glass to flow through to form the handle before the handle solidifies, but not so large as to render the pressure liable to force the glass of the handle through the wall of the article. This cavity may be shaped, if so desired, so as to form a knob, s, as an ornamentation to the handle.

The mold is to be provided with the usual handles J and fastening and locking device I. This mold, when ready for use, is mounted on a U-shaped or open-ended frame, F. Inside the lower part of the frame is a receiver or rest-block, E, made, by preference, of plaster-of-paris or other material which will not injure the heated glass articles placed thereon and supported on a metallic plate, e. The upper face of this rest-block may be as desired; but I prefer to make it hollowing and approximately or exactly of the shape of the lower side of the article B to which a handle is to be attached.

Where such articles are of uniform size and shape, or approximately so, the rest-block E may be made fixed in position; but in order to adapt to articles of various sizes and shapes I prefer to make it vertically movable, so that by means of a lever, H, operating against the bottom of the rest-block E, either with or without an interposed plate, G, or other known or suitable way, it may be raised up, so as to bring the glass article B, when placed thereon, up against the bottom of the mold A, and

after the handle is pressed thereon and the mold A is opened, so as to lower the article B with its handle, the more easily to remove it.

The lever H, when used, is intended to be worked by the boy who inserts the article B to its place on the rest-block; but other construction or arrangement of devices for raising and lowering the rest-block may be employed, or for one class of work it may be adjusted and fixed in one position and for another class in another position; also, it may be removed through the open end of the frame, and a rest-block of another size and style may be inserted.

The heated article B, which, for the present purposes, may represent any blown or pressed hollow article of glassware, such as a bottle or jar finished except as to its neck, or unfinished, or the bowl of a goblet, tumbler, or other hollow article finished or merely shaped, (but preferably finished or polished around that part where the handle is to be attached, either by being rotated in its mold or by fire-polishing or otherwise,) is by the operator, preferably while attached to a blow-rod, pontee, or snap, rested on the rest-block E and raised up in the proper position, so that the point where the handle is to be attached shall come opposite to the opening or openings of the ring-cavity D. The proper amount of molten glass is then dropped into the cavity C, and the handle is pressed onto the article B by the proper stroke of the plunger C', care being taken that the pressure shall be sufficient to fill the metal well into the cavity and against the article, but not enough to press the handle through, nor indent materially the wall or side of the article at the point or points of contact and union. The product, on being removed from the mold, presents the appearance shown in Fig. 3, where *c* represents the block or excess of glass remaining in the cavity, and *s'* the handle. The excess may be broken off in the line *n*, so as to leave material for a knob, *s*, to be finished by grinding or otherwise, or in the line *n'*, after which a plain finish can be made by grinding. In this manner a handle may be made on a blown goblet-bowl, lamp-bowl, pressed or blown tumbler, or on other hollow, blown, or pressed ware on which a handle is desired; and it is a characteristic feature of my present invention that the handle is made and attached in an apparatus

separate and distinct from that in which or by which it is made and receives substantially its shape and form. 55

Hence I make provision for the making, shaping, and finishing of that part of the article to which the handle is to be attached before the handle is attached, and under such conditions that the perfectness of the finish is not liable to be impaired by the work of making and attaching the handle. The preferable way of working the invention is in the making of finless blown glassware. 65

The blowing is done in a wood-lined or other suitable mold, and is rotated while being blown, so as to secure freedom from fins or other mold-marks, and then a handle is pressed in the manner described onto the finished bowl; and an article of glassware free from fins and provided with a pressed handle I believe to be new. 70

I claim herein as my invention—

1. A movable support, E, constituting a rest for the article to which a handle is to be applied, and having a properly-shaped seat for supporting the article steadily in position, in combination with a pressing-mold having a pressing-cavity, C, and handle-cavity D, substantially as set forth. 75 80

2. The arrangement, in a mold, A, of the cavities C and D, substantially as set forth, whereby the pressing-plunger, which forms the handle and brings it in contact with the article presented to the opening or openings of the handle-cavity, shall act substantially at right angles to the face of the article onto which the handle is to be pressed. 85

3. The method of making handled glassware by first pressing or blowing the article to shape, then transferring it from the molding or shaping apparatus to a separate suitable receiver or guide, which shall hold it in proper position at the ports or openings of a handle-pressing apparatus, and while so held pressing a handle thereon, substantially as set forth. 90 95

4. As a new manufacture, hollow blown glassware having a finless bowl or body and a pressed handle, substantially as set forth. 100

In testimony whereof I have hereunto set my hand.

WILLIAM FOX.

Witnesses:

R. H. WHITTLESEY,
GEORGE H. CHRISTY.