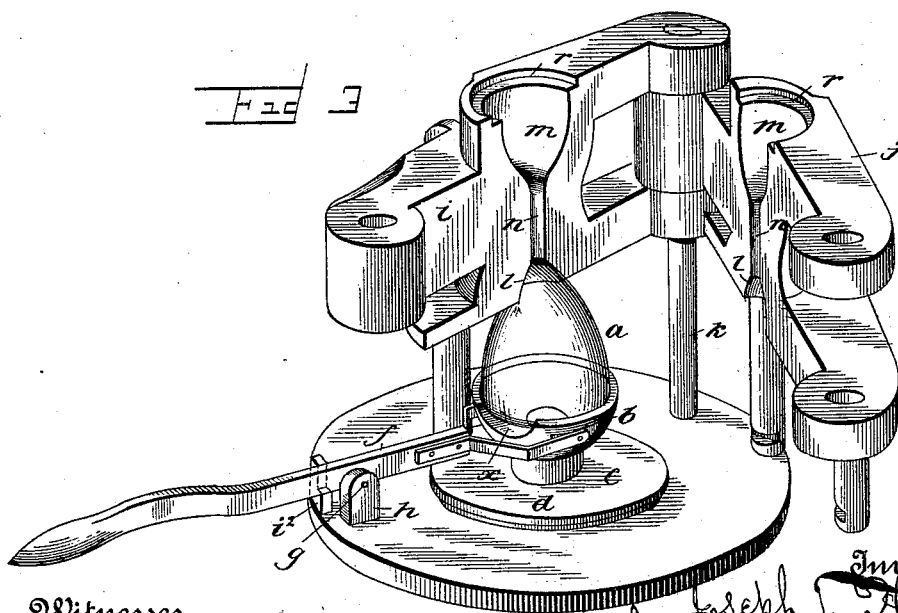
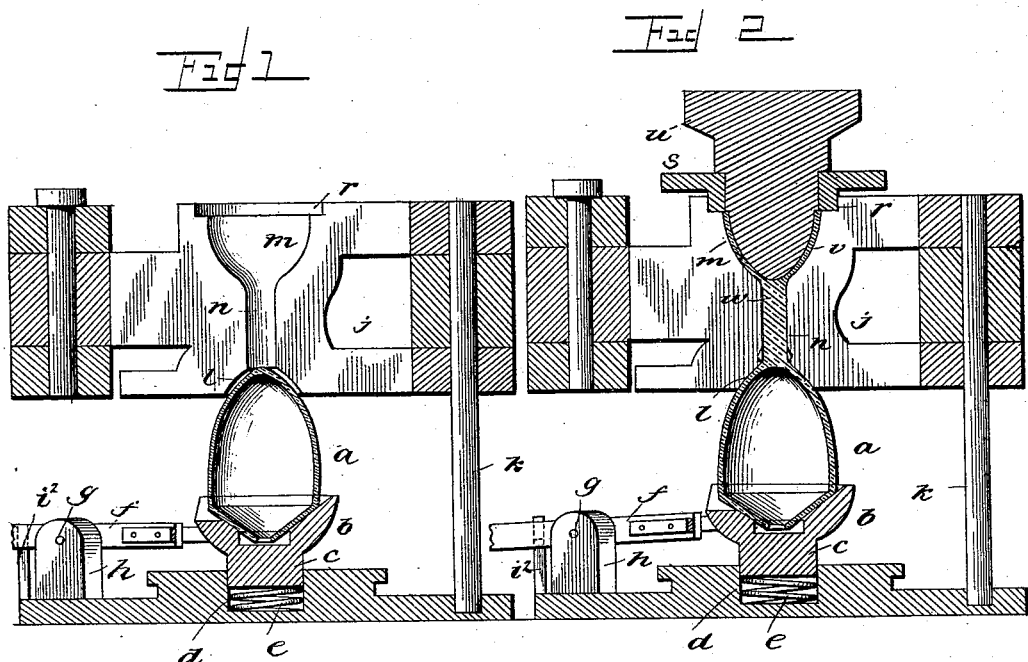


(No Model.)

J. T. HANES & T. BLANKINSOP.
APPARATUS FOR FORMING STEMMED GLASS ARTICLES.

No. 490,905.

Patented Jan. 31, 1893.



Witnesses
Wm. H. Johnson
W. W. Orville

Inventor
Joseph T. Hanes
Thomas Blankinsop
John W. Johnson
 Their Attorneys.

UNITED STATES PATENT OFFICE.

JOSEPH T. HANES AND THOMAS BLANKINSOP, OF MARTIN'S FERRY, OHIO.

APPARATUS FOR FORMING STEMMED GLASS ARTICLES.

SPECIFICATION forming part of Letters Patent No. 490,905, dated January 31, 1893.

Application filed August 11, 1892. Serial No. 442,809. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH T. HANES and THOMAS BLANKINSOP, citizens of the United States, residing at Martin's Ferry, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Apparatus for Forming Stemmed Glassware, of which the following is a specification.

So far as we know and can find blown bowls with pressed stems in the manufacture of glassware, have been made as follows: The bowl is blown on the tip of a blow-pipe, in a mold, and is held by and forms a fixture with the blow-pipe in said mold, in the operation of forming and uniting the stem to the bowl by pressing the stem forming part in the same mold in which the bowl was blown. The mold is then opened and the article removed and placed in a snap and finished in a "glory hole." In these operations the blower is subjected to the inconvenience of handling the cumbersome iron blow-pipe until the article is knocked off for placing in the snap. Our invention simplifies the operation by separately blowing the bowl, then knocking it off the blow-pipe, then placing it in an open supporting-cup in our apparatus and therein pressmolding and attaching the stem to the bowl, so that the blower at once knocks off the pipe and the presser removes the bowl to our apparatus for the attachment of the stem as stated and this is the feature of our invention.

The accompanying drawings illustrate our apparatus for supporting the blown bowl in an open base cup and pressmolding and attaching the stem to said bowl, and in which—

Figure 1 is a vertical section showing the blown bowl supported in the position it occupies in the apparatus to receive the pressed stem; Fig. 2 is a similar view showing the stem press-formed and attached to the bowl; and Fig. 3 shows the mold in open position and the bowl placed in the open base-cup in position to allow the mold to be closed over the stem attaching end of the bowl.

In the drawings *a* shows the body of the article, which, it will be understood is blown in a separate mold, knocked off the blow-pipe and placed in a base-cup *b* which has a central bottom stem *c* fitting in a well *d* upon a

spring *e* in the base-plate of the apparatus, whereby the base-cup is held in a central spring sustained position beneath the stem press-forming-mold. A forked foot-lever *f* is pivoted diametrically to the outer walls of the base-cup, and its fulcrum pin *g* is in a stud *h*, at one side of which is a similar stud *i*² which has a step or shoulder on which the foot lever is placed to hold the base cup down against the pressure of its spring, when the bowl is placed upon the cup. For this purpose the lever is free to have a sidewise movement upon its fulcrum pin to engage said shoulder like a ratchet tooth.

The mold is formed of two half parts *i, j*, hinged upon a vertical pin *k*, and when closed are locked at their free ends as is usual in such molds. Each section is suitably supported upon legs so as to close centrally with the base-cup. The bottom of the mold is open and is cup shaped at *l*, to conform to the shape of the stem end of the bowl which it receives when closed over it. The upper end of the mold is also open and is cup shaped at *m* to form the bottom or "flare" of the stem of a cup shape; while between these top and bottom cup formations *l, m*, the mold has a central opening *n* the form of the stem, so that when the mold parts are closed they form a closed top-cup *m* and an inverted open bottom cup *n* which latter co-operates with the open base cup *b*, to support the blown bowl in position in the mold to receive the pressed stem. The upper mold-cup is surrounded by a recess *r*, into which a cap *s* fits, having a central opening through which a plunger *u* works to press the molten glass from the upper cup into and through the central opening *n* and joined with the end of the bowl. It will be understood that the plunger is adapted to form the cup or "flare" *v* of the stem at the same time it is forming the stem *w* and that it is attached to a press. The side of the base-cup is preferably scalloped out at *x* to facilitate placing the broken neck of the bowl therein. The bowl having been blown in a separate mold is knocked off the pipe and placed in a hot state with its broken end downward into the open base-cup, which is held by its foot-lever in a depressed position by the ratchet shoulder as stated. This depressed position of the open base-cup is to support the bowl low down

so that the mold parts can close over the upper end of the bowl without touching it. The mold is in open position when the bowl is so placed and it is then closed and locked, and the foot lever thrown off its catch. The open base-cup under the tension of its spring seat, then rises and places and holds the upper end of the bowl closely within the inverted lower cup-shaped cavity in the mold. The cap is then placed on the mold and the molten glass is dropped into the upper cup through the cap opening. The mold is then shoved under the press and the plunger forced down through the cap upon the glass forcing it into and through the stem forming opening in contact with the end of the bowl to which it adheres. The mold is then opened, the article removed and placed in the snap and finished. In this way and by our device we take the body and set it in position to have its stem press-formed and properly put upon the bowl, saving time and labor over the present way of joining glass bodies.

An opening is formed in the mold at one side to permit the attendant to see when the stem is fully pressed upon the end of the bowl.

Referring to the inverted cup shaped cavity in the bottom of the mold it will be understood that it is only sufficient to receive and hold the stem connecting part of the bowl with a close joining over the lower end of the opening wherein the stem is molded; and that the upper cup is only sufficient to hold glass enough to form the stem and its bottom or "flare." It will also be understood that the upper supported end of the blown body must fit with a perfectly close joining upon the walls of the inverted open cup shaped cavity in the underside of the mold, so that the portion of the blown bowl which receives the end of the stem as it is being molded, will not have its shape changed in the least while the separate parts are being united. It will also be understood that the blown bowl is put into its containing cup in a cold state and that it is seated and held in the cup by the shape it has when knocked off the blow pipe.

We claim as our improvement;

1. A device for joining glass bodies comprising a hinged mold having an upper cavity

adapted to form a cup-shaped foot, a cap and a plunger for said cavity, a central opening therein extending to and terminating in a bottom opening adapted to receive the base of a blown bowl, a fixed base having a socket, a spring within said socket, a cup adapted to receive the blown neck or mouth of said bowl, and seated upon said spring, a lever pivoted to said cup, and a fixed stop for engaging said lever for holding said cup down against the upward pressure of said spring, whereby to support the blown body upon said cup when the mold is open and to automatically elevate and support with a yielding pressure said blown body within the said bottom cavity for the purpose stated.

2. A device for joining stems to glass bowls, comprising an open upward flaring spring sustained cup for containing a blown bowl, a ratchet lever device for holding said cup in a depressed position, in combination with a mold having an open cup shaped cavity on its underside, a cup shaped cavity on its upper side and a contracted central communicating opening therefor, and a press actuated plunger for the upper cup, substantially as described.

3. A device for joining glass bodies comprising a mold of matching hinged sections supported upon legs and a hinge forming pin and having a cup shaped cavity in its upper side, and an open inverted cup shaped cavity in its lower side, and a central contracted opening communicating with said cavities, in combination with a spring sustained upward flaring cup below and centrally with said mold, a ratchet lever device for holding said cup down against the pressure of said spring, and a press-actuated plunger for the upper mold cup, whereby a bowl blown in a separate mold is supported in a cold state while the stem is press-molded and united to said blown bowl.

In testimony whereof we have hereunto signed this specification in the presence of witnesses.

JOSEPH T. HANES.
THOMAS BLANKINSOP.

Witnesses:

JOHN S. COCHRAN,
R. F. ALLENDER.