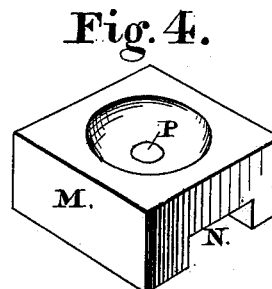
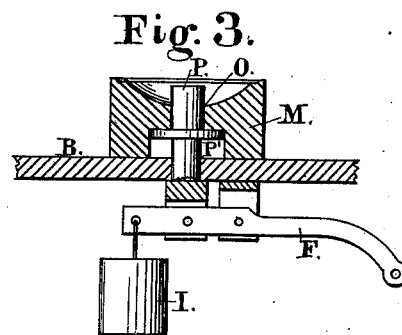
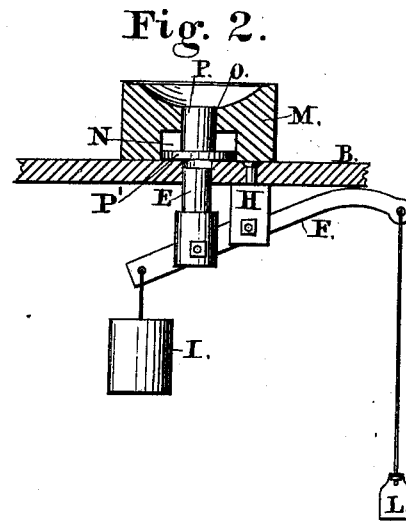
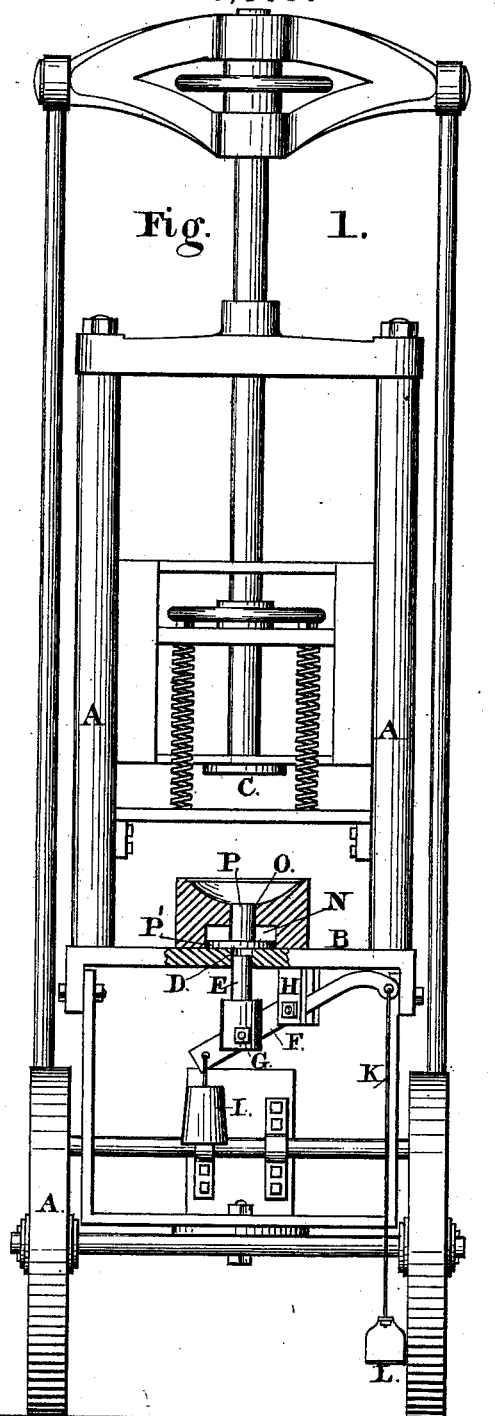


C. K. BRYCE.
Glass Mold and Method of Removing Articles
Therefrom.

No. 214,879.

Patented April 29, 1879.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES K. BRYCE, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN GLASS-MOLDS AND METHODS OF REMOVING ARTICLES THEREFROM.

Specification forming part of Letters Patent No. **214,879**, dated April 29, 1879; application filed March 26, 1879.

To all whom it may concern:

Be it known that I, CHARLES K. BRYCE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Glass-Molds and Methods of Removing Articles Therefrom, of which the following is a specification.

This invention relates to an improved method and apparatus for removing articles of glass-ware from the molds in which they are formed.

Heretofore in constructing such articles in that class of molds technically known as "drop-molds" it has been necessary to remove the molds from the press and invert them in order to release the articles. This operation requires time, and in the case of large articles is very laborious to the pressman.

The object of my invention is to obviate these objections, and provide a means for releasing the articles from the molds by mechanism directly under control of the operator, whereby by a positive motion said articles can be raised vertically from the molds in a position to be removed by means of a suitable implement.

To this end the invention consists, first, in a mold having an aperture and a recess below, in which is located a plunger provided with a shoulder at its lower end, adapted to be operated by a plunger extending through the bed of the press, by means of mechanism under direct control of the pressman, to release the article from the mold, so that it can be removed by means of a suitable implement, as more fully hereinafter specified; second, in the combination, with the bed of the press, of a vertical plunger, secured to a lever fulcrumed in a hanger below, and adapted to be elevated by means of said lever when operated by the pressman to elevate the plunger in the mold and release the article therefrom, as more fully hereinafter specified; third, in the combination, with the vertical plunger extending through the bed of the press and the lever by which said plunger is actuated, of a strap and stirrup, whereby the lever may be operated by the foot of the pressman to elevate the plunger, and raise the plunger in the mold to release the article therefrom, as more fully hereinafter set forth; fourth, in combination with the plunger extending through the bed-plate of the press and the lever by which it is actuated,

a counterpoise for depressing the lever and plunger, as and for the purposes more fully hereinafter set forth; fifth, in the combination, with the plunger extending through the bed of the press, of a lever located below the bed and connected with said plunger, and provided with a handle having a strap and stirrup or treadle, whereby the lever may be operated by hand or foot power to elevate the plunger and release the article from the mold, as more fully hereinafter specified.

In the drawings, Figure 1 represents a front elevation of a press for forming articles of glass-ware, showing my improvements. Fig. 2 represents a detached sectional view, showing the mold and discharging mechanism in position to receive the glass; and Fig. 3 represents a similar view, with the parts in position to elevate the article to discharge the same. Fig. 4 represents a view of the mold detached.

The letter A indicates the frame of the press, and B the bed, which are of the usual construction. Through the bed of the press, directly under the seat which the mold occupies when in position under the follower C, is formed an aperture, D, in which is located a vertical plunger, E, the lower end of which is slotted, through which slot extends a lever, F, to which the plunger is secured by means of a bolt, G. The said lever is fulcrumed between hangers H, secured to the under side of the bed of the press. One end of the lever is provided with a counterpoise, I, which serves to hold said lever and the plunger in a normal position. The other end of the said lever extends outwardly, and to it is secured a strap, K, having a stirrup, L, or treadle at its lower end, the outer end of the lever being under convenient control of the hand of the pressman, and the stirrup or treadle serving to enable him to operate said lever by means of his foot, if deemed preferable.

The letter M represents the mold, which may be of suitable construction for the formation of articles of any shape or design. The said mold is formed with a recess, N, on its lower side, and with an aperture, O, extending vertically through it. In said aperture and recess is secured a plunger, follower, or bottom plate, P, having a shoulder, P', at its lower end, the said plunger being adapted to be shifted ver-

tically in the aperture by a positive motion imparted to the plunger E and its operative mechanism, in order to elevate the article above the mold, so that it can be removed by means of a suitable instrument without inverting the said mold. The shoulder on the lower end of the plunger being confined in the recess in the under side of the mold limits its motion, so that it will not displace the article to such an extent as to throw it entirely from the mold.

It is evident that the recess in the bottom of the mold may be omitted, and other means may be employed for limiting the movement of the plunger—as, for instance, by forming a recess in the upper face of the bed of the press, in which the shoulder on the plunger may be confined; and, also, that other mechanism besides that described may be employed for elevating the plunger passing through the bed of the apparatus without departing from my invention. Hence I do not limit myself to the precise details for performing these functions.

The operation of my improved apparatus is as follows: The pressman fills the mold with the proper quantity of glass, and places it in its seat under the plunger in the usual manner. The plunger is then permitted to descend, pressing the glass into the mold and forming the article. When the article is formed the plunger is raised, and the pressman, by depressing the outer end of the lever, elevates the plunger passing through the bed of the press, which, in turn, elevates the plunger, follower, or bottom plate in the mold, and raises the article from the cavity in the same, and holds it in such position that it may be seized by a proper instrument in the hands of the pressman, and removed without inverting the mold or moving the same from its place.

It will be seen that by this means the greater portion of the labor and time ordinarily attendant upon the manipulation of the mold is saved, and that the wear and tear of the mold occasioned by such manipulation are obviated.

Molds for forming articles of glass have heretofore been constructed with an opening through and recessed on their under side to receive a plunger having a shoulder fitting in said recess, from the under side of which

shoulder projects a stem, so that, as the molds on a carriage travel over the bed of the press, said depending stem is brought in contact with an inclined surface, and caused to ascend through the mold, and thus tend to lift the article out of the mold. But as my invention differs from such, I make no claim thereto; but

What I claim is—

1. The combination, with a mold for forming glassware, having an aperture and a recess, within which is located a plunger having a shoulder, of a plunger separate and distinct from the plunger in the mold, said plunger extending through an opening in the bed of the press, and arranged to have a positive vertical action imparted to it by mechanism, substantially as described, operated by the pressman, whereby the plunger in the mold is caused to move vertically therein for releasing the article without inverting the mold.

2. In combination with the bed of the press, a vertical plunger, secured to a lever fulcrumed in a hanger below, and adapted to be elevated by means of said lever when operated by the pressman to elevate the plunger in the mold and release the article, substantially as and for the purposes specified.

3. The combination, with the vertical plunger extending through the bed of the press and the lever by which it is actuated, of a strap and stirrup, whereby the lever may be operated by the foot of the workman to elevate the plunger and raise the plunger in the mold to release the article, substantially as specified.

4. The combination, with the plunger extending through the bed of the press and the lever by which it is actuated, of a counterpoise, whereby the lever and plunger are automatically depressed for the reception of the next succeeding mold, substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal in the presence of the subscribing witnesses.

CHAS. K. BRYCE.

Witnesses:

JOHN MCKAIN,

DAVID K. BRYCE.