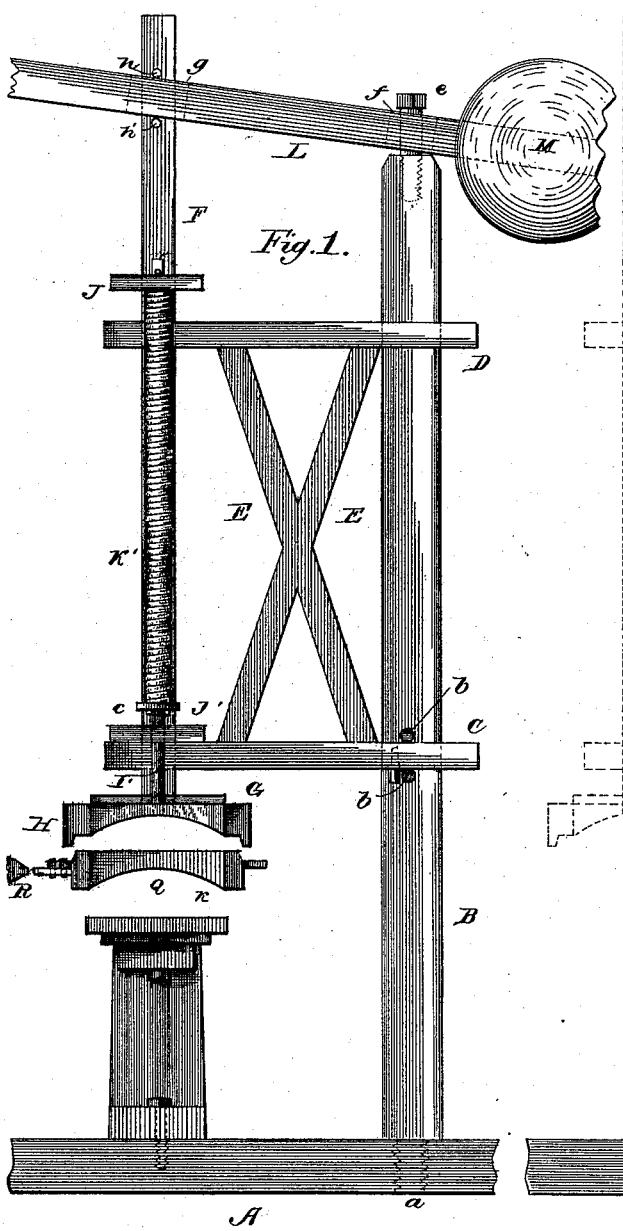
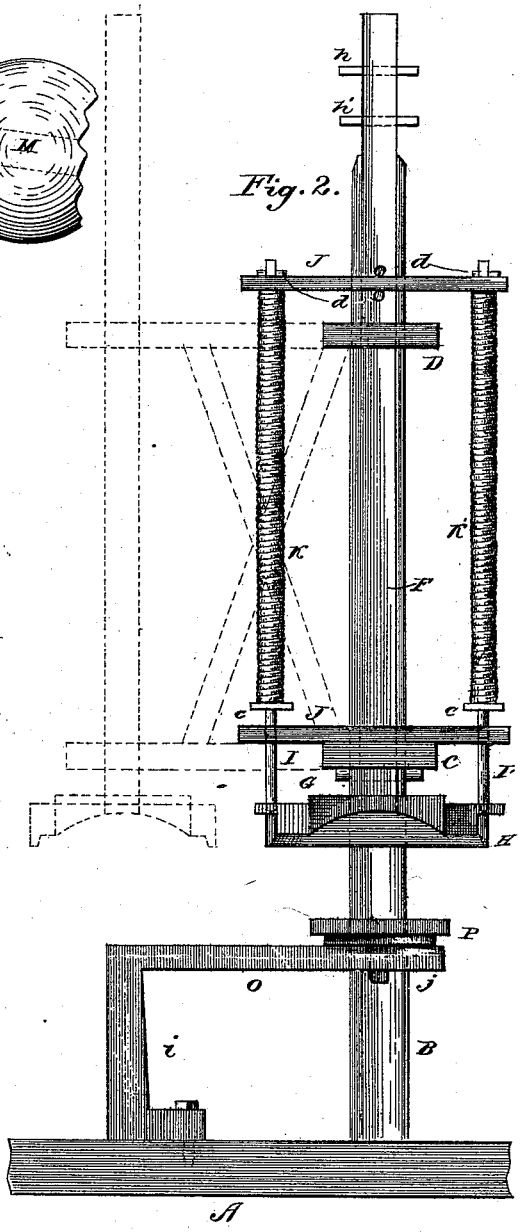
(No Model.)

G. B. BARNES.

PRESS FOR FORMING LENSES ON ARTICLES OF GLASSWARE.

No. 418,881. Patented Jan. 7, 1890.





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UNITED STATES PATENT OFFICE.

GEORGE B. BARNES, OF BELLAIRE, OHIO, ASSIGNOR OF ONE-HALF TO THE LANTERN GLOBE COMPANY, OF SAME PLACE.

PRESS FOR FORMING LENSES ON ARTICLES OF GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 418,881, dated January 7, 1890.

Application filed February 21, 1889. Serial No. 300,732. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. BARNES, a citizen of the United States, residing at Bellaire, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Presses for Forming Lenses on Articles of Glassware; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a new and improved press for forming and stamping lenses on lantern-globes, such as are shown in my patent, No. 372,509, dated November 1, 1887; and it is the object of my invention to provide a press composed of comparatively few parts, and thereby insure economy and portability, and one in which the lens may be stamped and formed on the lens-seat of the lantern-globe with rapidity and with little or no waste of material; and the novelties of my invention accordingly consist of a standard for supporting the globe and present the lens-seat to the action of a plunger, a hand-lens retaining-ring encircling the lens-seat, a spring-ring inclosing the plunger, and suitable mechanism to operate the plunger, either by hand, foot, or other power, as well as in other details of construction, all as will be more fully hereinafter described and claimed, and which are illustrated in the accompanying drawings, wherein like letters refer to identical parts in the several views, and in which—

Figure 1 is a side elevation of the entire device, showing the lens-ring in proper position; and Fig. 2, a front elevation, with the lens-ring removed, and illustrating in dotted lines the position of the plunger and operating mechanism when swung out of contact with the globe.

A represents a base, made, preferably, of iron, and which may be provided with suitable legs for its support; or, instead of this arrangement, the base may be mounted on a stand of a convenient height to be reached readily by the workman. Extending vertically upward from the base and provided with a screw-threaded extension *a*, engaging with a corresponding chamber in said base, is a circular standard B, made, preferably, of metal. Encircling this standard B is an arm C, retained in position on said standard by means of the pins *b b*, above and below such arms, and a short distance above the same is another and similarly-constructed arm D, rigidly connected to the arm C by suitable braces E E. A piston F extends down through suitable openings near the extreme outer ends of the arms C and D, and on the extreme lower end of this piston is fastened a plunger G, provided with a suitable concavity on its lower face. This plunger is surrounded by a nicely-fitting ring H, and extending up from this ring are the two guides I I′, passing up through suitable cross-pieces J J′ rigidly attached to the piston F. Encircling these guides I I′ are the spiral springs K K′, bearing against the upper cross-piece J and against the disks or shoulders *c c* of the guides I I′. As the springs K K′ exert a constant pressure downward, such pressure would tend to withdraw the guides from the opening in the upper cross-piece; but to prevent such an occurrence suitable pins *d d* are passed through the upper ends of the guides and above such upper cross-piece.

On the extreme upper end of the standard B is a vertical pin or screw *e*, passing down through an enlarged opening *f* in the lever L. This lever L is provided with another opening *g*, through which the upper portion of the piston F extends, and above and below this lever is a pin *h h′*, so that the piston may be moved vertically upward or downward by a suitable pressure applied to the outer end of said lever. A suitable counterbalancing-weight M is secured to the other end of this lever, so that the piston F may be always kept normally in an elevated position, as shown. This counterbalancing-weight M may be provided with an opening therein, through which the end portion of the lever L extends, and with a set-screw, so that said weight may be secured on said lever at any desired point.

At one side, and in front of the standard B, is a vertical arm *i*, provided with an integral right-angled supporting-arm O, the end *j*

whereof is directly in front of the standard B and vertically beneath the plunger G. Removably secured to the end *j* of the arm O is a button or stud P, made the exact shape of the interior of the lens-seat of the globe or other article. A lens-retaining ring Q, provided with a handle R, and with an opening *k* therein, of the exact size of the external diameter of the plunger G, is adapted to be inserted over the outside of the ring-seat of the globe.

In using the above-described press I make use of the following method of operation: The globe or other article is passed over the arm O, with the inside of its lens-seat resting securely in position on the stud or button P. The lens-retaining ring Q is now placed over the outside of the lens-seat and supporting-shoulders and a sufficient quantity of molten glass deposited on the lens-seat. The movable part of the press—that is to say, the lever L, piston F, and the outer part of the press having the swinging movement—are now swung around, so that the finger G is directly over the button P of the arm O. The lever L is now depressed, carrying the piston F, plunger G, guides I I′, and ring H with it. When near the bottom of the stroke, the ring H will come into contact with the lens-retaining ring Q and its progress will be arrested; but as the piston continues to descend the upper cross-piece J′ will be forced downward against the springs K K′, which will exert a firm pressure against the ring H, so that a tight joint will be formed between the same and the lens-retaining ring Q. The plunger G, entering the lens-retaining ring Q, and coming in contact with the molten glass therein, will cause such glass to assume the form of the concavity in the bottom of the plunger, thereby forming the lens and causing a perfect union between the lens and the lens-seat. The pressure is now released from the lever L, the counterbalancing-weight M will elevate the same, and piston F, cross-pieces J J, and ring H, the arms C and D, with attached parts turning readily on the standard B, are swung out of position, as shown in dotted lines in Fig. 2, and the globe or other article removed, and the work allowed to proceed, as before.

I do not wish to be limited to the precise description of the press as just made, as several of the parts might be varied somewhat. For instance, the pins *b b* and *d d* might be dispensed with and rings or shoulders substituted, the pins *h h′* might be dispensed with and an ordinary hinge substituted, the joint of the lever L at the upper portion of the standard might be replaced by a ball-and-socket joint, and many other changes might be made; but such would require merely the application of mechanical skill and not inventive ingenuity, and would only increase the expense without advantageously affecting the functions of the press.

Having now described my invention, what I claim as new therein, and wish to secure by Letters Patent, is—

1. In a press of the character described, the combination, with a supporting-arm for holding the article, of a vertically-movable plunger above said arm, and a separate ring incasing said plunger and adapted to be forced outwardly when the plunger is in engagement with the article, substantially as described, and for the purpose set forth.

2. In a press of the character described, the combination of a base A, a standard B, a piston F, mounted thereon, a plunger G at the lower end of said piston, and a supporting-arm O for holding the globe or other article, substantially as described, and for the purpose set forth.

3. In a press of the character described, the combination of a base A, a standard B, a piston F, mounted thereon, a plunger G at the lower end of said piston, a spring-supported ring H, surrounding said plunger, and a supporting-arm D for holding the article beneath said plunger, substantially as described, and for the purpose set forth.

4. In a press of the character described, the combination of a base A, a standard B, a piston F, mounted thereon, a plunger G at the lower end of said piston, a ring H, encircling said plunger, a ring Q, surrounding the lens-seat of the article, and a supporting-arm O for holding the article beneath said plunger, substantially as described, and for the purpose set forth.

5. In a press of the character described, the combination of a base A, a standard B, supporting-arms C and D, pivotally mounted on said standard, a piston F, passing down through said arms, a plunger G at the lower end of said piston, cross-pieces J J′, rigidly attached to said piston, guides I I′, passing through said cross pieces, springs K K, encircling said guides, a ring H at the lower end of said guides, a lever L for operating the piston, a counterbalancing-weight M on the end of said lever, a supporting-arm O, mounted on said base, and a button or stud P on the end of said arm N and adapted to support the article, substantially as described, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE B. BARNES.

Witnesses:
GEORGE M. WOODBRIDGE,
J. M. MARING.