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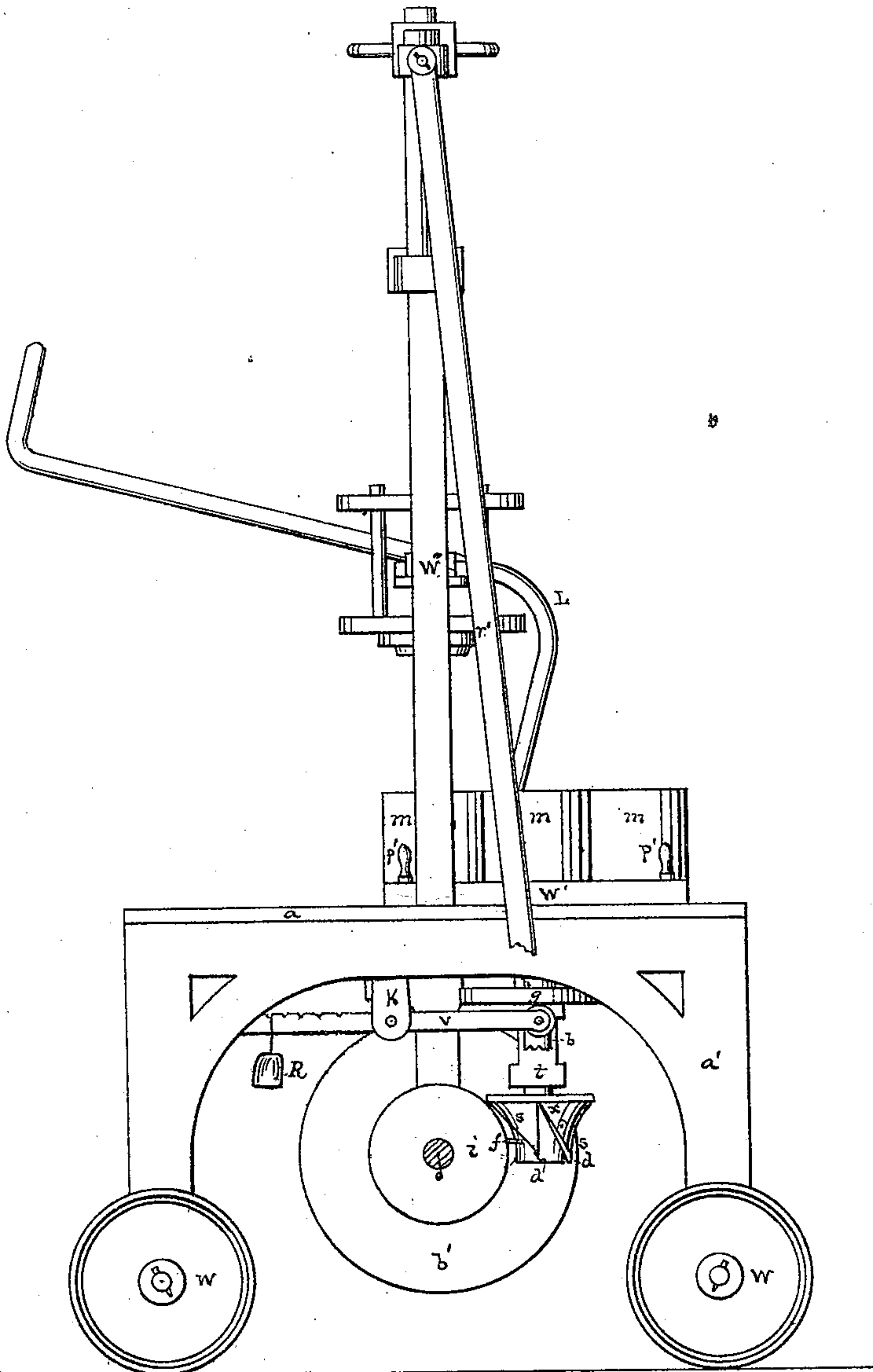
**W. C. KING.**

## Glass-Presses.

No. 134,070.

Patented Dec. 17, 1872.

Hzg. 2.



Witnesses.

John P. Heisel

Ludwig Blemer

Inventor.

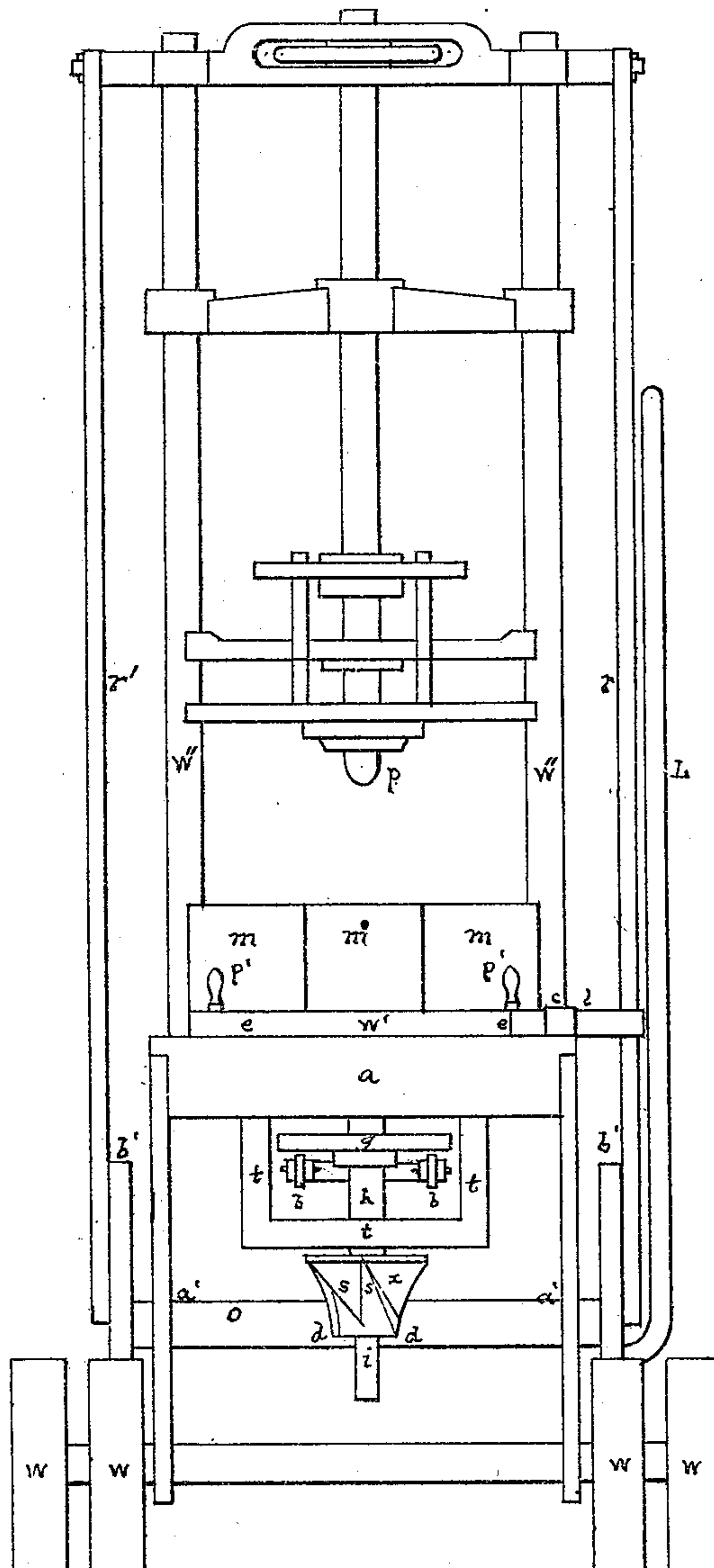
Ym. C. King

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Glass-Presses.

No. 134,070.

Patented Dec. 17, 1872.

Fig. 2.



Witnesses.

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Fig. 3.

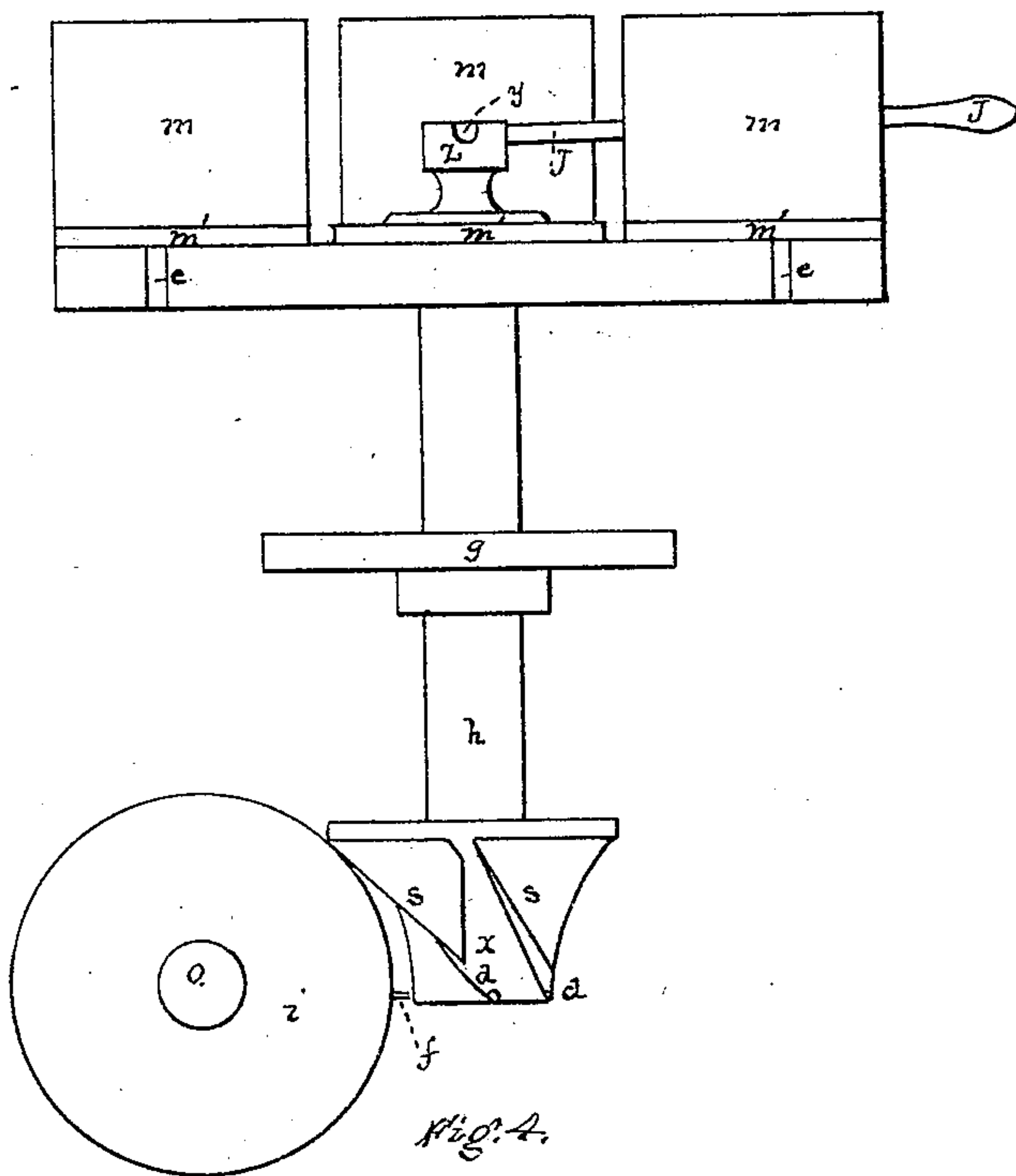
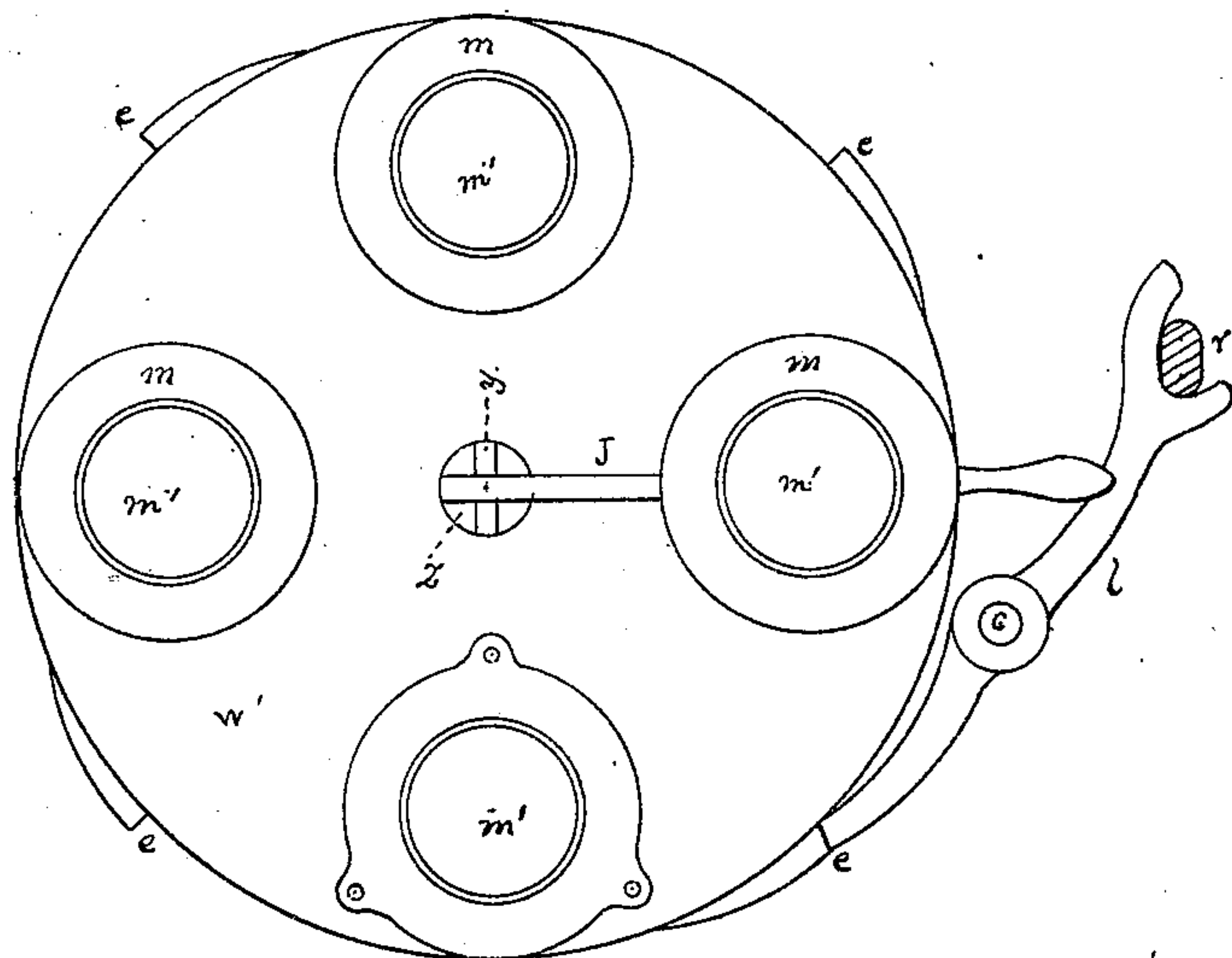


Fig. 4.



Witnesses.

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# UNITED STATES PATENT OFFICE

WILLIAM C. KING, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN GLASS-PRESSES.

Specification forming part of Letters Patent No. 134,070, dated December 17, 1872.

*To all whom it may concern:*

Be it known that I, WILLIAM C. KING, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Machine for Operating Molds in Pressing Glassware, the same being an improvement of the machine for which Letters Patent were granted to me May 9, 1871; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing making part of this specification, in which—

Figure 1 is a side elevation of my improved press or machine for operating glass-molds, having one of the wheels  $l'$  removed and one connecting-rod,  $r$ , broken off; Fig. 2 is a front elevation of the same; Fig. 3 is an enlarged side view of the molds, mold-base, and devices for operating the same; and Fig. 4 is an enlarged top view of the same with locking-lever  $l$ .

To enable others skilled in the art to make and use my invention, I will describe its construction and mode of operation.

In constructing my improved glass-press or machine for operating glass-molds, I make use of a press of the ordinary construction, having a bed-plate,  $a$ , and frame  $a'$  mounted upon wheels  $w$ , uprights  $w''$ , connecting-rods  $r'$ ,  $r$ , plunger  $p$ , and lever  $L$ , by which the plunger  $p$  is caused to descend and ascend in pressing articles of glassware; but I make the following changes and additions: I pierce a hole in the bed-plate  $a$ , in which I insert a vertical shaft,  $h$ , carrying on its upper end the mold-base  $w'$ , which is fast thereon, and revolves in contact with the upper surface of the bed-plate, when the shaft  $h$  is turned around.  $t$  is a hanger bolted to the under side of the bed-plate  $a$ , and serves to give another bearing to the shaft  $h$ . Screwed down onto the mold-base  $w'$  are plates  $m'$ , on which the molds  $m$  rest. These plates  $m'$  are so shaped or recessed on their upper surfaces as to center the molds and hold them to their places by fitting into their bottoms and yet allow of their being lifted off or opened up in the case of jointed molds. The plates  $m'$  can be shifted slightly in any direction to correct any inaccuracy in the position of the molds. When the plates  $m'$  are secured in their proper places and the molds  $m$  resting on them, the center of each mold

passes exactly beneath the center of the plunger  $p$  when the mold-wheel  $w'$  is revolved. On the lower end of the shaft  $h$  I securely fasten a wheel,  $x$ , the surface or rim of which is so curved as to be concentric in outline with the circumference of the wheel  $i$ . This wheel  $i$  is firmly fastened to the horizontal cross-shaft  $o$  at a point directly opposite or at right angles with the axis of the shaft  $h$ , and carries a pin or friction-roller,  $f$ , on its edge or rim. The curved surface of the wheel  $x$  is partially sunk-en, so as to form several inclines,  $s$ , corresponding in number with the molds  $m$ , on which the pin or friction-roller  $f$  travels, when the shaft  $o$  and attached wheel  $i$  are partially revolved back and forth.  $d$  are falls or drops, which are each provided with a spring, or counterweighted, so as to allow the pin  $f$  to push it aside when it (the pin  $f$ ) descends or moves in one direction, and come back to its place and compel the pin  $f$  to travel or slide on an incline,  $s$ , when it (the pin  $f$ ) moves in the opposite direction.  $P'$  are handles fastened firmly to the mold-base  $w'$ , by which, when desired, the mold-base and molds can be revolved instead of by the wheel  $x$  and pin  $f$ , as above described.  $v$  is a lever forked at one end, carrying a friction-roller,  $b$ , on the end of each fork, and turning on a pin in the fulcrum  $k$  attached to the under side of the bed-plate  $a$ . The wheel  $g$  is rigidly secured to the shaft  $h$ , and the whole shaft  $h$ , attached wheels  $x$  and  $g$ , and mold-base  $w'$  and molds  $m$  are supported almost entirely by the friction-rollers  $b$  by hanging a weight,  $R$ , at the proper distance from the fulcrum  $k$  on the lever  $v$ , thereby greatly reducing the friction of the mold-base  $w'$  on the bed-plate  $a$  when revolving. The lever  $v$  can be so modified and placed as to support the shaft  $h$  by a step, in which the lower end of the shaft  $h$  may turn instead of the fork and friction-rollers, as above.  $l$  is a lock or stop-lever turning on a center,  $c$ , on the bed-plate  $a$ , and having the outer end forked to embrace the connecting-rod  $r$ . The inner end engages with notches  $e$ , corresponding in number with the molds, in the edge of the mold-base  $w'$ .  $Z$  is a pillar secured to the center of the mold-base  $w'$ , and having grooves or cavities  $y$ , as shown in Figs. 3 and 4, in which the rods  $J$  of the drop-molds rest while being turned over and emptied.



The operation of my machine is as follows: The molds *m* are heated to the proper temperature for working and placed on the plates *m'* of the mold-base *w'*. The molten glass is then dropped into the mold beneath the plunger, and it caused to descend therein by drawing down the lever *L*, thereby pressing the semi-fluid glass into an article of ware. The lever *L* is then thrown up, which withdraws the plunger, and just as its point emerges from the mold the pin *f* strikes one of the inclines *s*. As the pin *f* moves in a vertical plane, and the shaft *h* with mold-base *w'* is free to revolve, the pin *f* slides up the incline, carrying the shaft *h* and mold-base *w'* one-quarter way around, and bringing the next mold into position beneath the plunger. The connecting-rod *r*, coming forward as the lever *L* is thrown back, strikes the fork of the stop-lever *l* and throws the other end into one of the notches *e* in the edge of the mold-base *w'* in time to stop its motion at the proper point. While the mold-base *w'* is revolving, the friction-rollers *b* travel around on the under surface of the wheel *g*, and, by supporting the weight of the mold-base and molds, greatly reduce the friction and facilitate its motion. On bringing the lever *L* down again, the connecting-rod *r*, moving down and back, strikes the fork of the lever *l*, throwing the other end out of the notch *e* in the edge of the mold-base, which, being released, is revolved one-quarter way around again by the pin *f* striking another of the inclines *s* of the wheel *x*, as before.

In the annexed drawing, I have shown four molds on the mold-base; but I do not confine myself to that number, but will use any practicable number found most suitable.

The pieces of ware are removed while the mold-base is stationary at any convenient point on its circumference.

In using unjointed or drop molds a handle, *J*, is inserted in a hole in the circumference of the mold, and thereby raised and turned bottom up, this rod *J* resting and turning in the cavities *y* in the pillar *Z*. The piece of ware drops out and is removed to the "leer," when the mold is turned mouth up and lowered to its place again, and the handle withdrawn so as not to interfere with the uprights *w''*.

In operating with jointed or open-and-shut molds, two handles are inserted in the mold, the key-pin withdrawn, mold opened, piece of ware removed, mold closed, and key-pin replaced, when it is ready to pass on by removing the handles.

To secure economy, the operation of removing the ware from the molds is performed by an assistant, relieving the pressman of that part of the labor, and allowing him to direct his whole time and attention to cutting off the glass and working the lever. As the pressman is by this arrangement relieved of all the time and labor of handling and operating the molds, he is enabled to turn out a much larger amount of ware in a given time than by the old method, at present in general use; and yet, as several molds are employed, no delay is necessary to prevent their becoming too hot or to allow the ware to become firm enough to be turned out.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The revolving mold-base *w'* carrying several molds *m*, operating relatively to the plunger *p*, substantially as and for the purpose set forth.

2. The combination, with the revolving mold-base *w'*, of a wheel, *x*, having inclines *s* and drops *d*, and a wheel, *i*, having a pin, *f*, arranged substantially as and for the purpose set forth.

3. In combination with the revolving mold-base *w'* a forked lever, *v*, with friction-rollers *b*, and a wheel, *g*, on shaft *h*, substantially as described, and for the purpose set forth.

4. The combination, with a mold-base, *w'*, of a stop-lever, *l*, with forked end and connecting-rod *r*, substantially as and for the purpose described.

5. The pillar *Z* on the mold-base *w'*, having grooves or cavities *y*, substantially as and for the purpose specified.

In testimony whereof I, the said WM. C. KING, have hereunto set my hand.

WM. C. KING.

Witnesses:

JOHN C. HEISEL,  
LUDWIG BLEMERS.