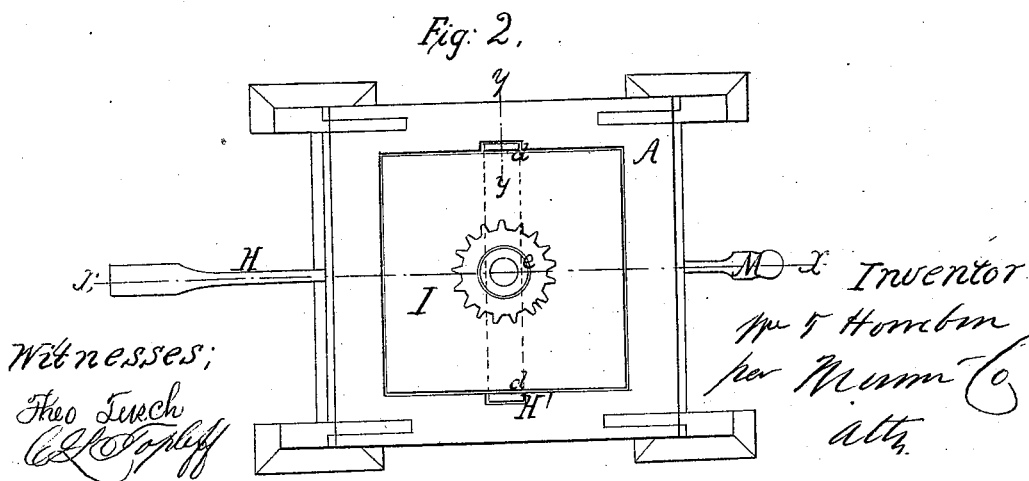
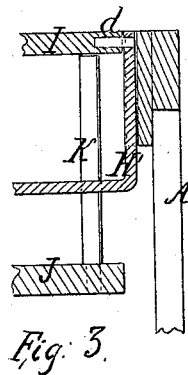
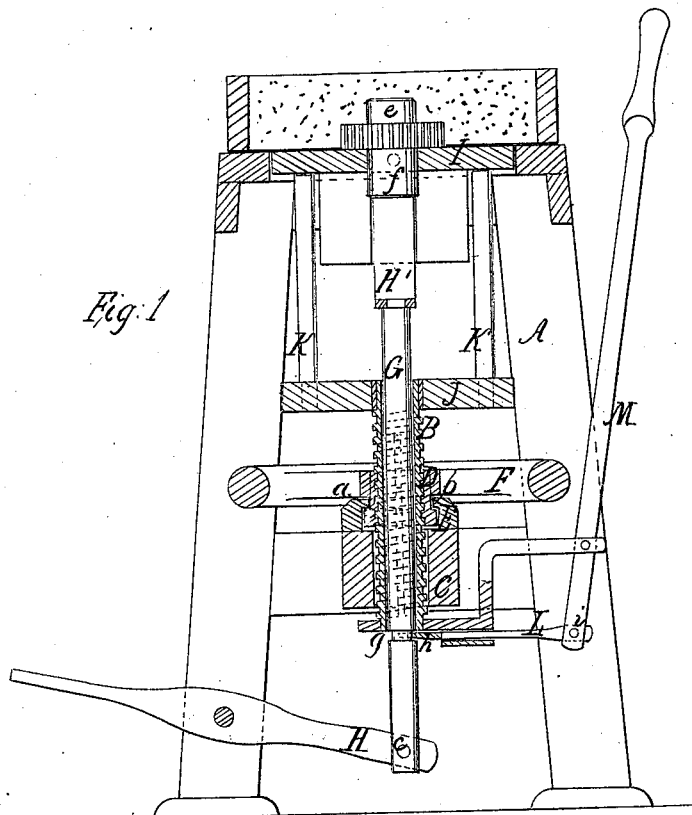


W. T. Horrobin,
Molding Apparatus.
No 46,564. Patented Feb. 28, 1865.



UNITED STATES PATENT OFFICE.

W. T. HORROBIN, OF BIDDEFORD, MAINE.

IMPROVED DEVICE FOR FORMING MOLDS FOR CASTING.

Specification forming part of Letters Patent No. 46,564, dated February 28, 1865.

To all whom it may concern:

Be it known that I, W. T. HORROBIN, of Biddeford, in the county of York and State of Maine, have invented a new and Improved Device for Forming Molds for Casting; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of my invention, taken in the line *xx*, Fig. 2; Fig. 2, a plan or top view of the same; Fig. 3, a vertical section of a portion of the same, taken in the line *yy*, Fig. 2.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and useful device for forming molds for casting; and it consists in attaching the pattern to a plate so arranged that it may be raised and lowered, and also inverted and drawn from the flask, all being arranged in such a manner that the labor or process is not only materially expedited, but also performed with less risk of disturbing the sand in drawing the pattern from it.

A represents a framing, which may be constructed in any proper manner to support the working parts.

B is a hollow or tubular screw, which passes vertically through a cross-bar, C, in the framing A, and has a nut, D, upon it above said cross-bar, said nut being provided with a groove extending circumferentially around it to receive an annular flange, *b*, on a metal box, E, which is secured to the cross-bar C. (See Fig. 1.) The nut D is the hub of a hand-wheel, F, and by turning said wheel the screw B may be raised and lowered.

G is a rod, which is fitted within the screw B, and is allowed to slide freely up and down therein, the lower end of said rod being connected by a pivot, *e*, to a foot-lever, H, in the lower part of the framing. The upper end of the rod G is attached to a frame, H', the ends of which are fitted in grooves in the sides of the framing, said grooves serving as guides, and in the upper part of the frame H' there is suspended on pivots or journals *d d* a plate,

I, to which the pattern is secured, said pattern consisting in this case of a gear, the wheel, and one journal, *e*, being at one side of the plate, and the other journal, *f*, at the opposite side.

To the upper end of the screw B there is attached a square plate, J, having a rod, K, secured vertically to it near each angle or corner. The rod G has a groove, *g*, made circumferentially in it some distance above its lower end, and L is a rod having a fork, *h*, at its inner end, the outer end of said rod being connected by a pivot, *i*, to the lower end of a lever, M. This fork *h*, when shoved into the groove *g* of the rod G by actuating the lever M, prevents said rod from moving in the screw B.

The operation is as follows: The plate I is adjusted so that its upper surface will be flush with the top of the framing A, the rod G being retained or held by the fork *h* of the rod L, and the screw B being adjusted so that the rods K of plate J will support the plate I in proper position. The flask shown in red, Fig. 1, is placed on the framing A, and is filled with sand, which is packed around the pattern on the upper surface of plate I. The rods K are then lowered by turning the wheel F, and the plate I descends in consequence of the lower end of screw B bearing on the fork *h* of rod L. By this means the pattern on the upper surface of plate I is drawn out from the sand in the flask. The flask is then removed, the plate I elevated to its former position—to wit, with its upper surface flush with the top of the framing A. The fork *h* is now, by actuating-lever M, thrown out from the groove *g* in the rod G, and the attendant or operator presses down with his foot the outer end of the lever H, and thereby throws up the plate I some distance above the top of the framing A, sufficiently far to admit of the plate I being turned or reversed, so as to bring the opposite side uppermost. The plate I is then allowed to descend to its original position, a second flask placed in the framing A, and the sand packed around the other portion of the pattern, which is drawn down out of the flask as the other portion of the pattern, as previously described. Thus by this simple arrangement I can draw the pattern from the

sand expeditiously and without the liability of displacing the sand as the pattern is drawn from it, as is the case with the ordinary manual process.

I would remark that in cases where more than two flasks are required to form a mold, and consequently more than one plate I, the first plate, when the two first flasks are charged, may be removed and a second plate, I, inserted in the frame H'. I would further remark that instead of withdrawing the patterns from the flasks the latter may be drawn from the former; but the principle would be the same in either case. I would also remark that in cases where the patterns are withdrawn upward it may be done by means of a crane or equivalent arrangement above the molding-bench, with a screw, cam, or lever, or their equivalent, attached so as to withdraw the pattern upward.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The swiveled plate I, employed substantially as herein described, for presenting different patterns or parts of patterns to the flasks.

2. The combination of the plate J, rods K, and sliding rod G, for supporting the plate I in its operating position, or elevating it to be reversed.

3. In combination with the above, the retaining-fork L *h* and groove *g*, for preventing the disturbance of the plate I while in use.

W. T. HORROBIN.

Witnesses:

WM. P. HAINES,
R. M. CHAPMAN.