W. P. Barr.

Type Casting Mach.

No. 5278 Patented Sept. 4. 1847.

Fig. 1.

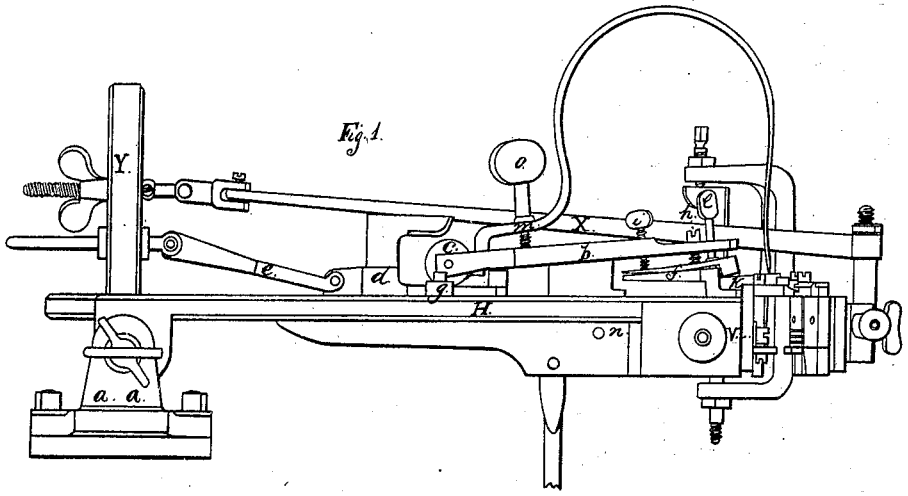


Fig. 2.

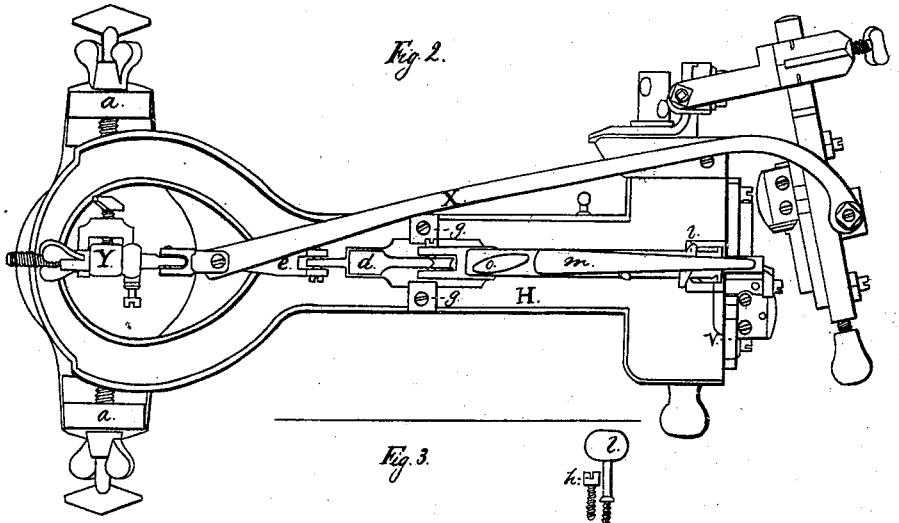


Fig. 3.

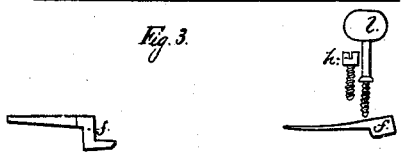
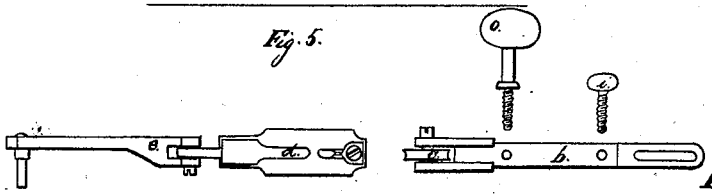


Fig. 4.

Fig. 5.



Witnesses.

D. W. Price

Geo. M. Covert

Inventor

Wm. P. Barr

UNITED STATES PATENT OFFICE.

WILLIAM P. BARR, OF NEW YORK, N. Y., ASSIGNOR TO GEORGE BRUCE & CO.

IMPROVEMENT IN TYPE-CASTING.

Specification forming part of Letters Patent No. **5,278**, dated September 4, 1847.

To all whom it may concern:

Be it known that I, WILLIAM P. BARR, of the city and county of New York, in the State of New York, have invented a new and useful improvement on the mode of holding and working the matrix and discharging it from the type in machines and hand-molds for casting printing-types, which I describe as follows, reference being had to the annexed drawings, making a part of this specification.

In the arm H, Figure 1, to which the stool side of the mold V is secured, in the machine for casting printing-types which was patented to David Bruce, Jr., March 17, 1838, at about one-third of its length from the mold, a slot is made to receive the working-center of the lever *b*, the pin *n*, which forms its fulcrum, passing through the arm and across the slot. This lever is of a convenient length, and at the end nearest to the hinge *a a* of the arm terminates in the pulley *c*, which is embraced by the forked or double-acting slide *d*, connected to the upright stud Y by the hinged rod *e*, and having its longest slide below the pulley and its shortest above. At the end of the lever nearest to the mold is the matrix-holder *f*, formed of two pieces, the ends of which pass under the lever for nearly half its length, and are secured in that position by the adjusting-screw *h* in the slot at the end of the lever, while another adjusting-screw, *i*, passes through the lever and presses on the end of the matrix-holder, by the use of which adjusting-screws it can be raised or lowered to suit the mold. Immediately beyond the lever are the jaws of the matrix-holder, into which the matrix *k* is placed, and where it is firmly held by turning the tightening-screw *l* in the slot of the lever. The matrix-holder, though secured to the lever, as stated, is not absolutely immovable, for it is left with a little play, to give the spring *m*, which is also secured to the lever and acts on the matrix, the power of carrying the matrix to the stool without the exact setting which would be indispensable if the matrix-holder were made tight to the lever and no spring were used.

The double-acting slide, the lever, the matrix-holder, and the matrix and spring being arranged on the arm as described, the machine is put in motion. The arm moving on its hinge descends, carrying with it the lever, and thereby enlarges the space between the lever and the upright stud, forcing the lower slide, which is confined to its path by guides, to pass under the pulley, by which that end of the lever is raised, and the end that carries the matrix-holder is pressed down till the matrix touches the mold and receives a cast, when the arm again rises, the lower slide is pushed from under the pulley, and the upper one passes over it, depressing that end of the lever and raising the opposite one, which lifts the matrix from the mold and leaves the type free to drop out. If the fulcrum of the lever be in the same plane with the face of the matrix, the latter will be lifted nearly perpendicularly from the mold and type, and cannot injure the type in discharging; but if it be desirable to lift the matrix at an angle of a few degrees from a perpendicular, the fulcrum of the lever must be placed lower, or the matrix-holder, by means of the adjusting-screws, must be drawn nearer to the lever, for which purpose sufficient space should be allowed.

The invention here described for holding and working the matrix and discharging it from the type with reference to one type-casting machine can be applied to other machines. Its use gets rid of the destructive operation of tilting the matrix on the edge of the mold, by which both mold and matrix were greatly injured and large quantities of type destroyed. The matrix-holder can also be used with the hand-mold by securing the end of it to a stud projecting from the stool side of the mold to become the fulcrum by which to raise the holder and matrix, using for that purpose a lever at the back of the mold. The matrix-holder in two pieces, as already described, is probably easier to make than in any other form; but a good one can be made with one arm having a fixed shoe for the matrix with a movable plate and screw to confine it, as shown in Fig. 5.

Disclaiming any right to use the patent type-casting machine that I have referred to in this specification, or any special right to the common modes of working and discharging the matrix from the type in type-casting, I claim as my invention and desire to secure by Letters Patent—

The lever working in a slot in the arm of a

machine for casting printing-types on a pin passing through the arm and across the slot in the plane of the face of the matrix or below it, the forked or double-acting slide, by the movement of which the lever is controlled and worked, the attachment of the spring to the lever so that it shall be moved entire with the matrix and diminish in pressure at the moment of discharging from the type, or the attachment of the spring to the matrix-holder for the same purpose, the matrix-holder with its tightening and regulating screws, and also the matrix-holder with one arm and a fixed shoe, in which the matrix may be confined or allowed to move and the holder may be confined or allowed to move, and the arrangement and combination of these parts as here described, or varied to suit another machine or hand-mold for casting printing-types, so as to move the matrix to and from the mold and to discharge it from the type nearly perpendicularly or at any suitable angle without using the edge of the mold for a fulcrum.

WM. P. BARR.

Witnesses:
D. W. BRUCE,
GEORGE M. COVERT.