W. Spang,

Type-Machine.

No. 110,303. Patented Dec. 20. 1870.

Fig 1

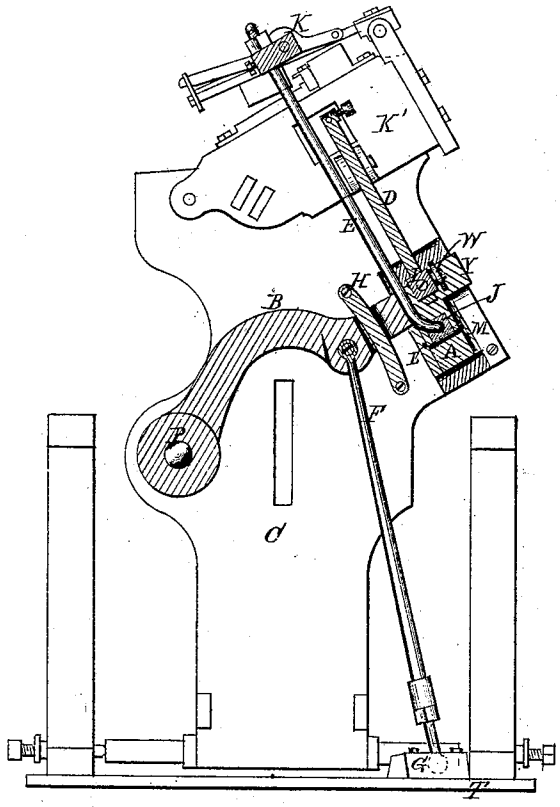


Fig 3

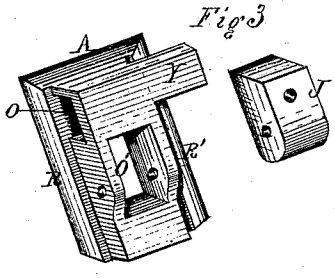
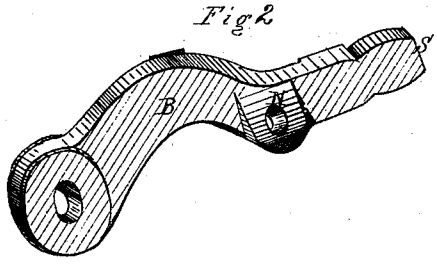


Fig 2



Witnesses. { Isaac R. Oakford, Geo. E. Nichols

William Spang } Inventor.

United States Patent Office.

WILLIAM SPANG, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 110,303, dated December 20, 1870.

IMPROVEMENT IN TYPE-CASTING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM SPANG, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful "Improvement in Type-Casting Machines;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same; reference being had to the accompanying drawing and to the letters of reference marked thereon.

The object of my invention consists in providing a simple mechanism for effectually tripping the matrix-lever and opening and closing the mold in type-casting machines.

To accomplish this, I alter the form of one end of the curved arm (which is pivoted to the front part of the oscillatory frame) and insert it in a sliding head of peculiar construction, so that when power is applied to the machine it will produce a reciprocating motion of the head and cause it, on the up-stroke, to pass under and trip the matrix-lever, and, at the same time, to open the mold through a rod connected with it and the head. The head on the down-stroke closes the mold and releases the matrix-lever.

Figure 1 is a front elevation of that portion of a type-casting machine embodying my invention.

Figure 2 is a perspective view of the curved arm.

Figure 3 is a perspective view of the sliding head, with one part separated from it.

To enable those skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

The arm B, made in the form as shown in fig. 2, is pivoted at the point P to the face of the oscillatory frame C, with the opposite end S inserted in a rectangular opening, O, made in the sliding head A.

Connected with the said arm, through an opening, N, is a rod, F, the lower end of which works by means of a ball-joint in a box, G, secured to the bed-plate T.

A guide, H, through which the arm B passes and works, is secured to the frame C, for the purpose of holding it (the arm) closely in contact with the frame.

The sliding head A is made in the form as shown in fig. 3, and has passing transversely through and near its upper end a rectangular-shaped opening, O, in which is inserted the end S of the arm B, and passing through it in an opposite direction is an opening, O', in which is inserted a block, J.

The said block is pivoted in the opening by passing a pin, L, through it and the sides of the head.

In order to give additional bearing surface to the head A, it is made somewhat wider at the base, and the projecting edges R and R' leveled or tapered off to suit corresponding grooves formed on the frame C.

One of these grooves is made by tapering the inner edge of an adjustable plate, M, so that it can be set up in case the head wears away.

The head thus constructed is placed at the proper angle and position on the frame C, and the end S of the arm B inserted in the opening O.

The lower end of a rod, E, is then secured in the block J, and the opposite end of it (the rod) is extended up and attached to the upper mold-block K.

On the right-hand side of the said rod, and pivoted to the lower mold-block K', is the matrix-lever D, the lower end of which is provided with a friction-wheel, W, which revolves on a projection, Y, formed on the outer surface of the head A.

The friction-wheel W is pivoted to a sliding box, I, which incloses the lever, and is retained on it by means of a set-screw, so that the wheel is adjusted to a proper position in order to allow the upper end of the sliding head A, when in motion, to come in contact with it and thus raise and trip the lever.

The sliding head A is designed to have a perfect parallel motion, and for this purpose the end S of the arm B has its lower and upper (or bearing) edges curved sufficiently to permit of a rocking motion, and thus allow the head to slide freely up and down in the grooves, without deviating from its direct line of travel.

The rod E is so pivoted to the block J as to permit of the slightest lateral motion, and so that it can also be turned in any direction when its upper end is released from the mold-block K.

The resistance of the rod F causes the end of the arm B nearest the sliding head to move through an arc of a circle when the frame C is vibrated to and fro; and the ball-joint, by which the said rod is connected with the box G, allows it (the rod) to have a vibrating and lateral motion, so as to adapt itself to the varying positions of the arm.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The arm B and sliding head A, constructed as herein described, and arranged on the oscillating frame C, as shown, so that the arm will cause the head to move perfectly parallel in the grooves in which it is retained, and thus producing a direct motion for tripping the matrix-lever and opening or closing the mold.

2. The construction and arrangement of the arm B, rod F, sliding head A provided with a block J and rod E, matrix-lever D provided with the adjustable box I, and friction-wheel W, as and for the purpose herein specified.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM SPANG.

Witnesses:

ISAAC R. OAKFORD,

GEO. E. NICHOLS.