

D. Bruce.
Type Casting Machn.

N^o 83828.

Patented Nov. 10. 1868.

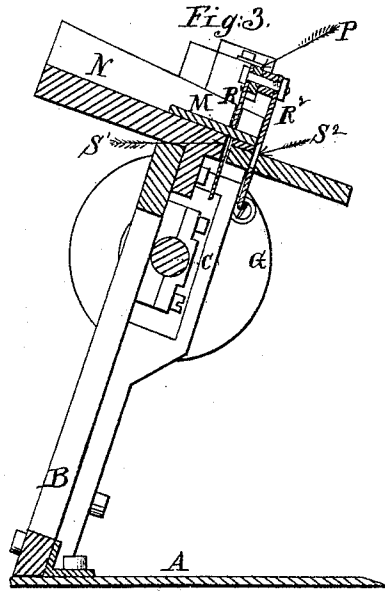
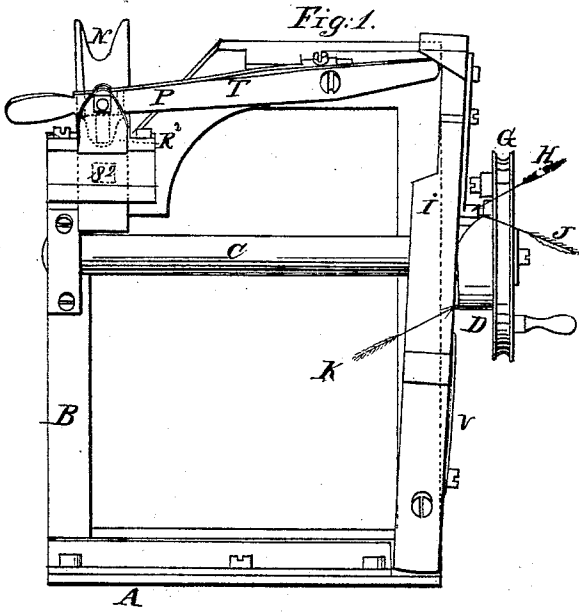
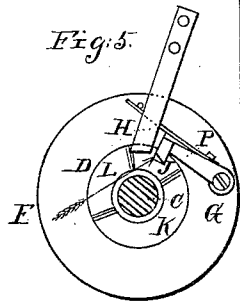
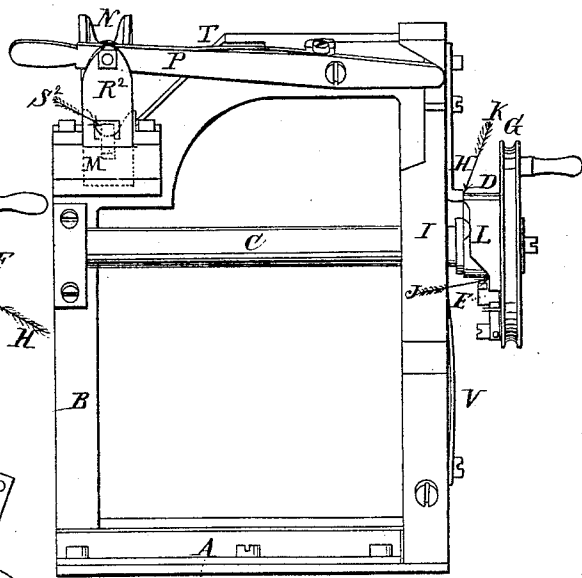
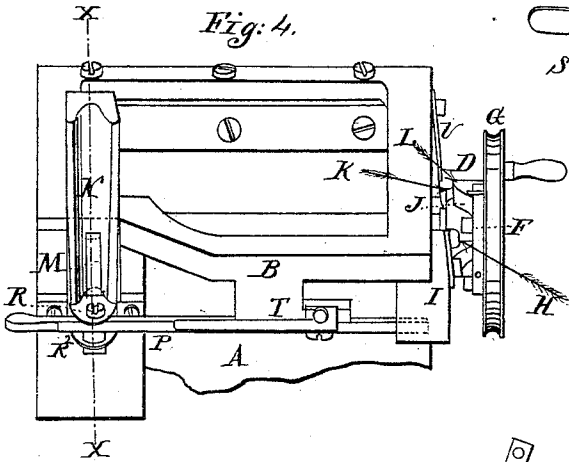


Fig. 2.



WITNESSES:

W. Bruce
Franklin Barntt

INVENTOR:

David Bruce,

United States Patent Office.

DAVID BRUCE, OF BROOKLYN, NEW YORK.

Letters Patent No. 83,828, dated November 10, 1868.

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, DAVID BRUCE, of Brooklyn, Kings county, and State of New York, have invented certain new and useful Improvements in Mechanism for Registering or Governing the Motions of Printers' Type-Casting Machines; and I do hereby declare that the following is a full description of the same.

The nature of my improvements consists—

First, in combining, with the propelling-shaft of a type-casting machine, a face cam-wheel of such form and shape as to operate, by three consecutive movements upon a vertical or upright cam-lever, to throw the propelling-shaft out of connection with a loose driving-pulley.

Second, in combining, with the said cam-wheel, a loose driving-pulley, having a spring pawl attached to the side thereof, for locking automatically to the said cam-wheel.

Third, in combining, with a vertical or upright cam-lever, a wedge-shaped tappet, for operating on the said cam-wheel.

Fourth, in combining, with the upright cam-lever, and frame to which it is attached, a horizontal type-registering-lever.

Fifth, in combining, with the frame of the apparatus having an inclined gutter attached thereto, a horizontal type-registering lever having two type-registering plates on its end, with openings through them, so arranged that both holes are opened only when the registering-lever is raised to its greatest elevation.

But to describe my invention more particularly, I will refer to the accompanying drawings, forming a part of this specification, the same letters of reference, wherever they occur, referring to like parts.

Figure 1 is a front elevation of the apparatus when disconnected from the driving-pulley.

Figure 2 is a like view of the same, when connected with the driving-pulley.

Figure 3 is a cut sectional view of the end of the apparatus, through the line *x x*, fig. 4.

Figure 4 is a plan view of the apparatus.

Figure 5 is a detached face-view of the face cam-wheel, and loose driving-pulley in connection therewith.

Letter A represents the bed-plate of a type-casting machine, to which is attached, by any suitable means, a frame, B, so arranged with reference to the motions and position of the type-mould as to receive the type instantly they are discharged therefrom, and the propelling-shaft C of the type-casting machine, as to admit of its operating the working-parts of the apparatus, simultaneously with the operations of the type-casting machine.

Letter D is a face cam-wheel, secured firmly upon the propelling-shaft, and having a notch, E, cut in its periphery. The object of this notch is to admit of a pawl, F, secured to the side of a loose pulley, G, on the propelling-shaft, engaging into it, to lock them to-

gether, to operate the type-casting machine, through suitable cams for that purpose, secured on the propelling-shaft.

This engagement of the pawl into the notch of the cam-wheel is governed or controlled by the shape or outline of the face of the cam-wheel, operating upon a wedge-shaped or inclined-plane tappet, H, attached to and projecting from the side of an upright cam-lever, I, secured by a centre-pin, to the front of the frame B, and its operations are as follows:

When the upright cam-lever I is in the position shown in fig. 1, the tappet H is projected back into a cavity, J, formed in the face of the cam-wheel. In this position it comes under the toe of the pawl, which being made bevelling, as shown in fig. 5, rides up and over the tappet, thereby lifting the pawl out of the notch E. By so doing, it allows the loose pulley to rotate, without rotating the propelling-shaft of the machine, and thus stops it from running instantly that the type-mould gets choked, and ceases to deliver type to the registering-apparatus.

To set the machine in operation, the upright lever is thrown forward, as shown in fig. 2. This withdraws the tappet from under the pawl, so that it can fall into the notch in the periphery of the cam-wheel, (as shown in fig. 5,) to couple or lock together the loose pulley with the propelling-shaft. By so doing, the tappet H comes upon the flat or plain face K of the cam-wheel, as shown in fig. 2, in which position it is when the type escape from the gutter of the apparatus. The tappet then passes on to the lower or depressed face L, (shown in fig. 2,) at which time the type M falls from the type-mould into the gutter N, and at the same time the outer end of the horizontal registering-lever P is allowed, by the cam on the upper end of the upright lever I, to descend, so as to cut off the escape of the type from the gutter. This is done by means of two registering-plates, R¹ and R², attached to the end of the registering-lever, and having discharging-holes, S¹ and S², in or through them, of unequal areas, and so arranged that the type, (as shown in fig. 3,) passes only through the opening S¹ in plate R¹, when first falling into the gutter, and thus prevents the outer end of the lever P from dropping down to the position shown in fig. 1, to force the tappet back and under the toe of the pawl, to disconnect the loose pulley from the cam-wheel on the propelling-shaft of the type-machine.

The operation of the apparatus, therefore, is to stop the running of the type-casting machine automatically, whenever, from any cause, the mould fails to deliver type to the registering-apparatus, and is as follows:

When the type fall into the gutter from the mould, they slide down it, and through the opening S¹ in the registering-plate R¹, as shown in fig. 3. At this time the tappet H is acting against the depressed face L of the cam-wheel. It then passes over the cavity J, in consequence of the type under or through the plate R¹

preventing the end of the registering-lever from descending, as shown in fig. 1, to force the tappet back under the pawl, and then comes upon the face K of the cam-wheel. This causes the outer end of the registering lever to rise, as shown in fig. 2, to expose the opening S² through the registering-plate R², and allows the type to escape from the gutter. As a second type descends the gutter, and passes through the opening S², just as the first one escapes from the apparatus, it will be obvious, that so long as type are fed into it, the end of the registering-lever can never descend, as shown in fig. 1, and thereby force the tappet back into the cavity of the cam-wheel, to disengage the pawl from the notch in the edge of it to stop the machine. Therefore, when the type-mould is choked, or from other causes ceases to drop type into the gutter of the registering-apparatus, the lever will always drop down, in consequence of the pressure of the spring T on it, and stop the machine till the obstruction can be removed.

Letter U is a spring, for keeping the upright cam-lever up to its work.

Having now described my invention, I will proceed to set forth what I claim, and desire to secure by Letters Patent of the United States.

1. I claim the loose pulley G, having a pawl, F, attached thereto, in combination with the cam-wheel D, having a notch, E, in its periphery, substantially as hereinbefore set forth.

2. I also claim, in combination with the driving-shaft C, the cam-wheel D, having a cavity, J, in its face, and planes K and L, substantially as described, and for the purposes hereinbefore set forth.

3. I also claim, the combination of the upright cam-lever I, having the tappet H attached thereto, with the said cam-wheel D, when formed as hereinbefore described.

4. I also claim the combination of the said upright cam-lever I and frame B with the horizontal registering-lever P, substantially as hereinbefore described, and for the purposes set forth.

5. I also claim, in combination with the frame B, the inclined gutter N, made and arranged substantially as hereinbefore set forth.

6. I also claim, in combination with the horizontal registering-lever P, the registering-plates R¹ and R², substantially as hereinbefore described, and for the purposes set forth.

7. I also claim, in combination with the inclined gutter N and registering-plate R¹, the type M, arranged and operating in the manner described, and for the purposes set forth.

DAVID BRUCE.

Witnesses:

W. BRUCE,
CHARLES L. BARRITT.