

H. A. ARMSTRONG.
 TYPOGRAPHICAL MACHINE.
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1,106,610.

Patented Aug. 11, 1914.

2 SHEETS—SHEET 1.

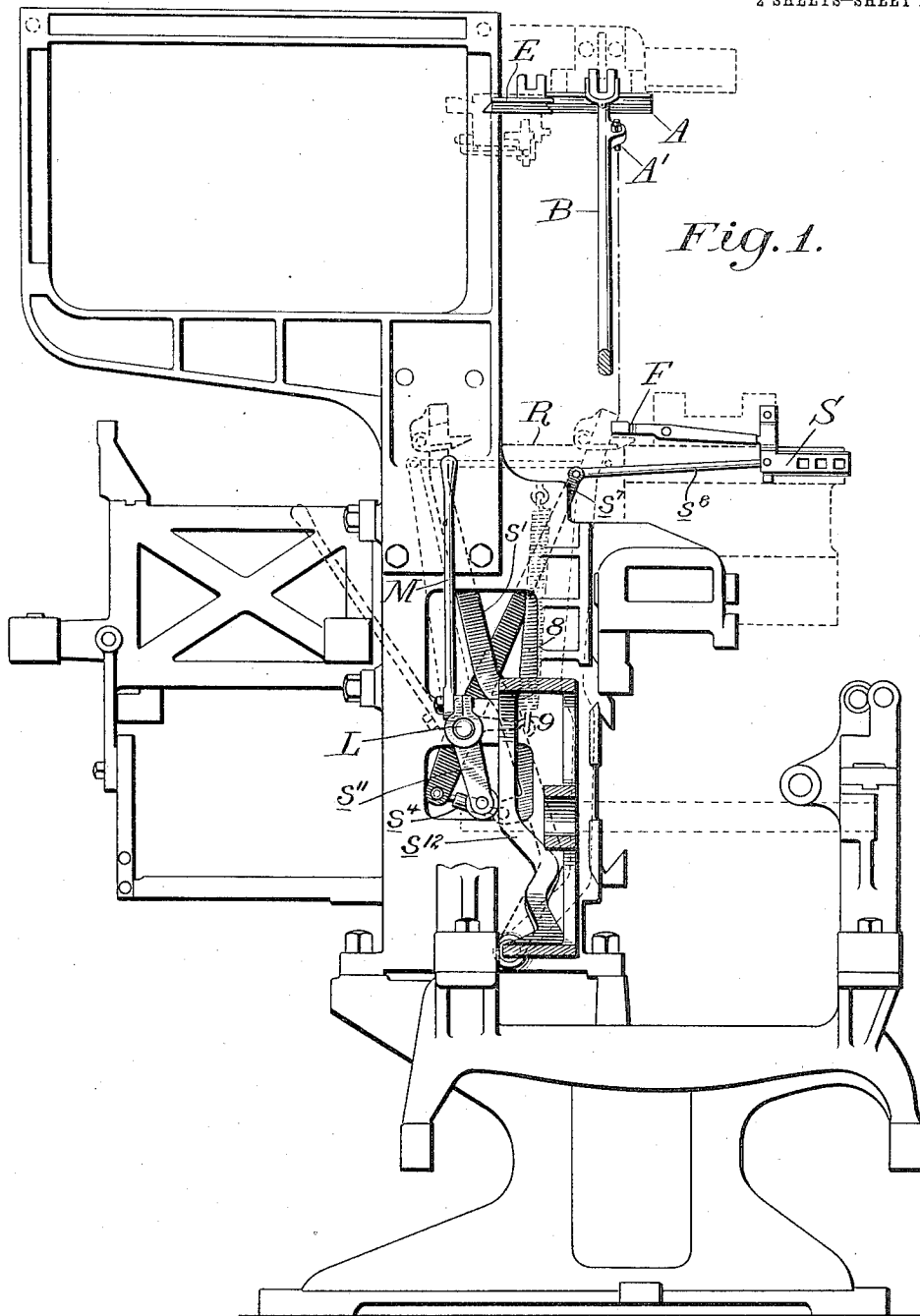


Fig. 1.

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UNITED STATES PATENT OFFICE.

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TYPOGRAPHICAL MACHINE.

1,106,610.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY A. ARMSTRONG, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Typographical Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to typographical machines, such as linotype machines of the general organization represented in Letters Patent of the United States, No. 436,532, to O. Mergenthaler, wherein circulating matrices are released from a magazine in the order in which their characters are to appear in print and then assembled in line together with spacers, the composed line transferred to the face of a mold, the mold filled with molten metal to form a slug or linotype against the matrices which produce the type characters thereon, and the matrices and spacers thereafter elevated and returned through distributing mechanism to the magazines from which they started.

More particularly, it relates to the means whereby, after the slug is cast, the matrices and spacers are returned to their places of storage.

It is the purpose of my invention to simplify and facilitate the manual control of certain of these parts, as will hereafter more fully appear from the detailed description thereof.

In the accompanying drawings, I have shown my invention in preferred form and by way of example, and as applied to a linotype machine, but many changes and variations may be made therein, and in its mode of application, which will still be comprised within its spirit.

Generally speaking, I desire it to be understood that I do not limit myself to any specific form or embodiment, except in so far as such limitations are specified in the claims.

Referring to the drawings: Figure 1 is a rear skeleton view, partly broken away and in section, of a portion of a linotype machine, having my improvements applied thereto; and Fig. 2 is a similar side view.

As illustrated in the Mergenthaler patent previously referred to, or as is customary in the somewhat modified commercial linotype machine, after the slug is cast, and the first

elevator (not shown) rises to its uppermost position, the line of matrices and spacers is transferred therefrom by the slide S into the upper transfer channel R (shown in dotted lines in Fig. 1), and the matrices thus engaged with the second elevator bar A. The bar A is carried by the arm B provided with an arm C located in suitable position to be engaged and actuated by the cam D, whereby the bar A is moved upwardly into registration with the distributor box E, to which the matrices are shifted in the ordinary way. The spacer hook U is operatively connected to the slide S, in such manner that when the slide moves the line into the transfer channel, the hook advances and engages the spacers remaining therein, and by its return movement restores them to the spacer magazine. The slide S is held in its retracted or inoperative position by the pivoted pawl or detent F. In normal operation, the detent F is tripped to release the slide by the contact therewith of the abutment A' connected to the second elevator, in such manner that when the latter descends into operative relation to the channel R, the slide is permitted to operate.

The parts so far described are or may be of any usual or preferred construction, and in themselves constitute no part of my present invention.

The means for actuating the slide S and hook U are substantially similar to those presented in Letters Patent of the United States to O. Mergenthaler, No. 557,000, wherein the parts are designated by the same reference characters. The slide S is operated by the intermediate link s^8 connected to an upright arm s^7 mounted upon a shaft (designated herein by the letter L), which shaft has a depending arm s^{11} arranged to bear against the side face of the cam wheel s^{12} . This shaft is also provided with a second depending arm connected by a link or turn-buckle s^4 with the arm s^7 , which carries the spacer hook U. The shaft, and consequently the arm s^7 and the connected arm s^4 , are operatively moved by the powerful spring 8 connected to an arm 9 fixed on the shaft. The return movements of the shaft and arms are effected by the action of the cam s^{12} on the arm s^{11} . The cam is so formed that when the spring 8 acts to shift the slide S inwardly, its movement is controlled and uniform, as is necessary to secure the

proper transfer of the matrices to the elevator bar A, as a sudden or jerky action would project them violently and spill them into the machine.

5 It sometimes happens in use that the elevator bar A is prevented from descending at the proper time, as for instance when due to the arrest of the distributor, the matrices accumulate and a jam occurs which holds
10 the elevator bar A in its uppermost position. When this happens, it is necessary for the operator to leave his place at the keyboard and pass to the rear of the machine, in order to correct the difficulty and clear the
15 parts. At this time, the slide S is held in its outward or inoperative position against the force of the spring 8 by the detent F, although the cam s^{12} has continued to move and has passed out of its restraining contact with the arm s^{11} . If now the second
20 elevator is freed and permitted to descend, it trips the detent F and releases the slide S, which shoots forward with great rapidity, because it is no longer under the control of
25 the cam, and projects the line in front of it with excessive violence and frequently with disastrous results. This difficulty subjects the operator to great inconvenience, and entirely because it is impossible to control the
30 slide at the rear of the machine simultaneously with the clearing and lowering of the second elevator.

To overcome the objection, I have provided means whereby the actuating devices
35 may be conveniently governed from the rear of the machine and at the same time that the second elevator is being manipulated. Preferably I accomplish this result by mounting an arm or handle M on the rear of the shaft
40 L, in proximity to the arm B of the second elevator, and so arranged that when the operator lowers the second elevator into relation to the channel R, and at any time before the abutment A' engages the detent F,
45 he may seize the handle M and prevent the too rapid movement of the slide S by the unresisted spring 8. This restoration of the parts to normal position also effects the re-starting of the automatic mechanism in the
50 manner well understood in the art.

As previously stated, I have shown my invention only in preferred form and by way of example, and as applied to a linotype ma-

chine, but obviously many modifications and alterations therein, and in its mode of 55 adaptation, will suggest themselves to those skilled in the art, without departure from its scope.

Having thus described my invention, its construction and mode of operation, what I 60 claim and desire to secure by Letters Patent of the United States, is as follows:

1. In a typographical machine, the combination of the line transfer device S, its operating arm s^7 the fore and aft rock shaft 65 L upon which the arm is mounted, the spring 8 connected to the shaft for operating the transfer device, the cam s^{12} to control the movement of the transfer device under the influence of the spring, and the handle M 70 mounted upon the rear end of the rock shaft to control the movement of the transfer device when not under the control of the cam.

2. In a typographical machine, the combination of the line transfer device S normally locked against action, the second elevator adapted to release it, the spring 8 for operating the transfer device when released 80 by the elevator, and the handle M connected to the transfer device and located in proximity to the second elevator; whereby the movement of said device, under the influence of the spring 8, may be controlled manually at the time it is released by the second 85 elevator.

3. In a typographical machine, the combination of the line transfer device S normally locked against action and adapted to be released automatically by one of the machine parts, a spring for operating the transfer device when released, a periodically operated cam to control the movement of said device under the influence of the spring, but adapted to move out of operative relation to 95 said device when locked against movement, and means under the control of the operator for controlling the movement of said transfer device under the influence of the spring when not under the control of the cam. 100

In testimony whereof I have affixed my signature in presence of two witnesses.

HENRY A. ARMSTRONG.

Witnesses:

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