

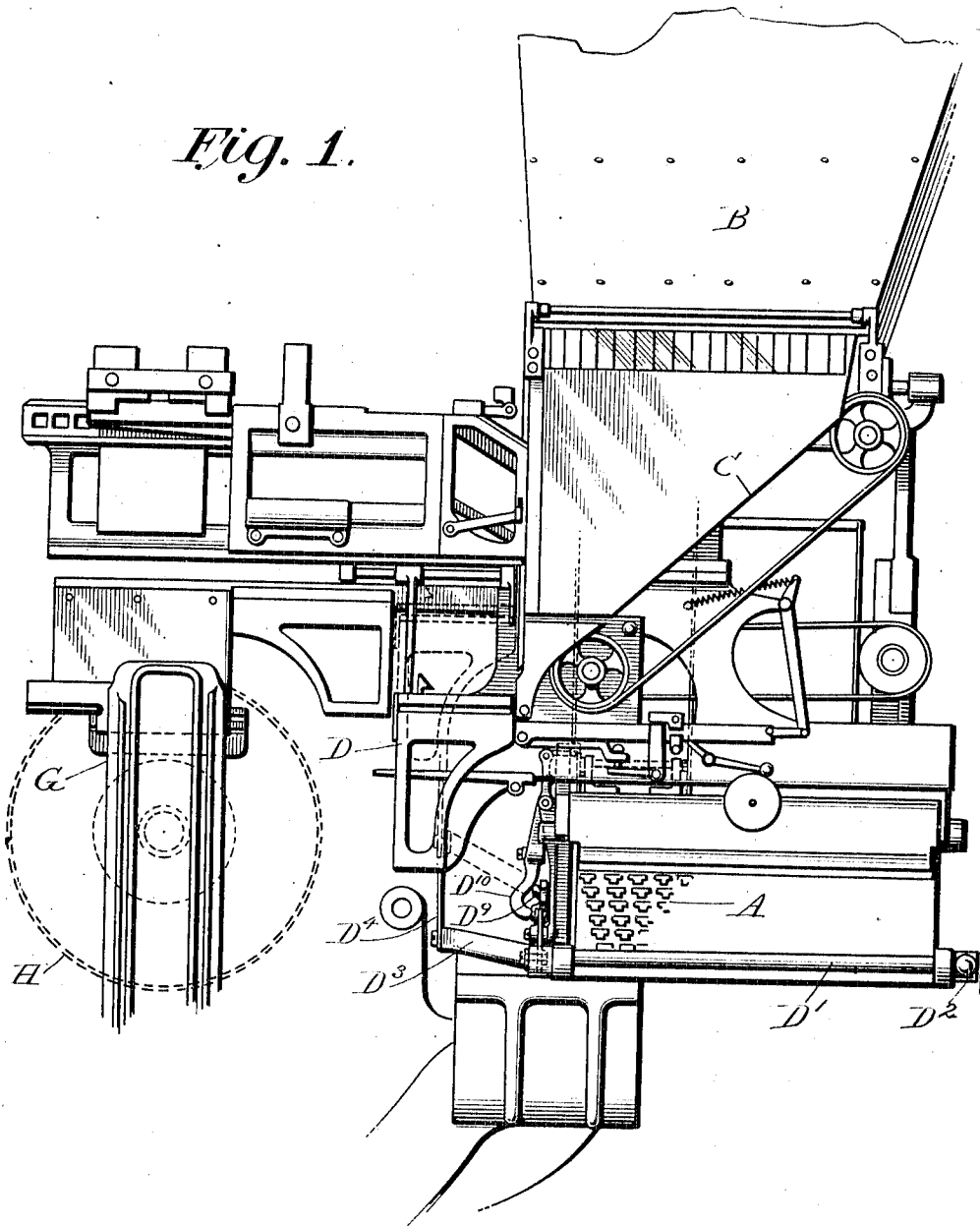
1,088,730.

J. R. ROGERS.
TYPOGRAPHICAL MACHINE.
APPLICATION FILED AUG. 4, 1911.

Patented Mar. 3, 1914.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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L. V. Morrison

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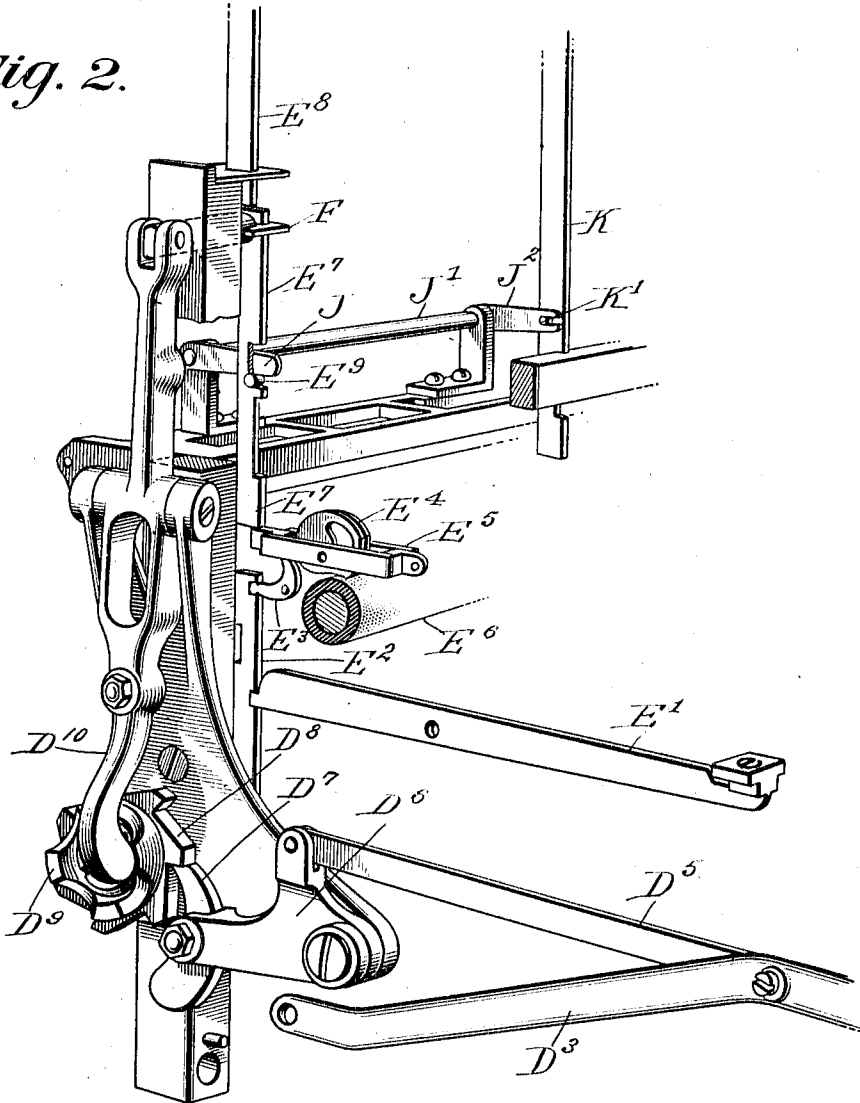
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3 SHEETS—SHEET 2.

Fig. 2.



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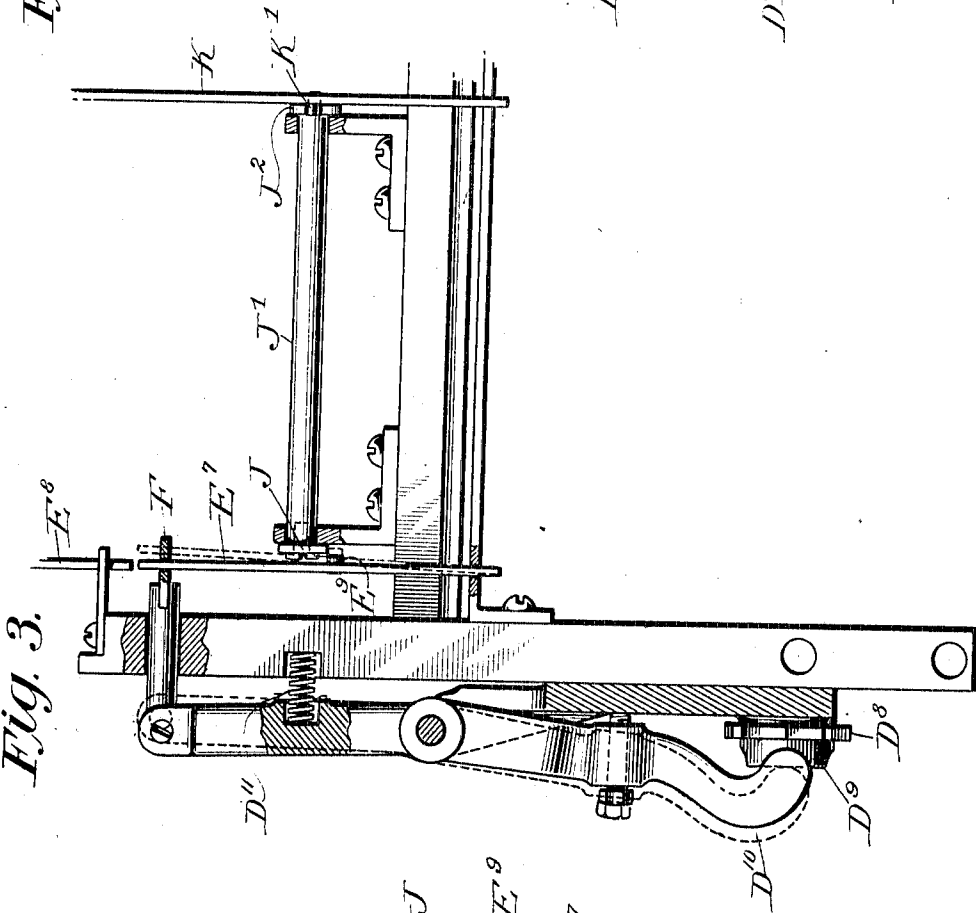
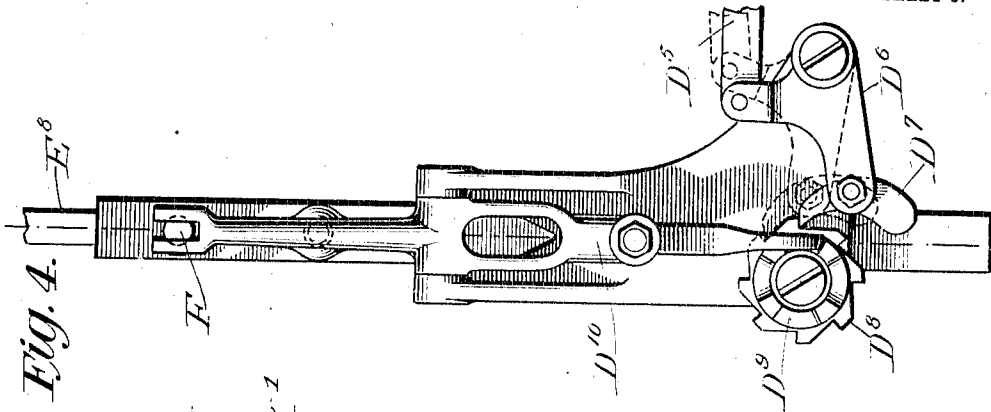


Fig. 3.

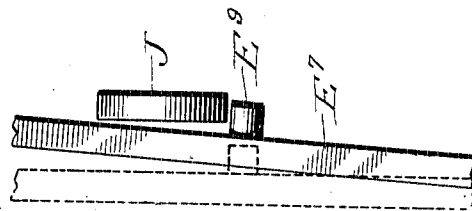


Fig. 5.

WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN RAPHAEL ROGERS, OF BROOKLYN, NEW YORK, ASSIGNOR TO MERGENTHALER
LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

TYPOGRAPHICAL MACHINE.

1,088,730.

Specification of Letters Patent.

Patented Mar. 3, 1914.

Application filed August 4, 1911. Serial No. 642,295.

To all whom it may concern:

Be it known that I, JOHN RAPHAEL ROGERS, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Typographical Machines, of which the following is a specification.

My invention relates to typographical machines, and more particularly to that class thereof known to the public under the name "linotype," and as illustrated for instance in U. S. Letters Patent to O. Mergenthaler, No. 436,532. In this type of machine, the matrices are stored in channeled magazines and are released therefrom by suitable escapements through the manipulation of connected keyboard devices, whereby they are delivered to a common assembling belt from which in turn they pass into the assembler elevator.

As is well known to those skilled in the art, the various matrices in a font are delivered to different extents, due to the fact that certain letters are more frequently employed than others. For instance, the letter "e" is used more than any other letter in the alphabet, and therefore it results that a single channel does not contain an adequate supply of such matrices. Accordingly, it has been customary, in the case of such frequently employed matrices, to store them in a plurality of channels in the magazine, and so arrange the escapement operating means that the selecting devices are mechanically shifted from one to another, the shifting means being under the control of some periodically operated part, so that the change is made automatically and does not require the attention of the operator. In practically every such instance, where a plurality of channels is employed to contain the same character, these channels are arranged in contiguity to each other, and in such manner that the shifting of the escapement operating means may be secured by simply moving one of the actuating members into relation to the appropriate parts of the neighboring channel. It also becomes desirable to employ such shifting means in connection with noncontiguous channels, and even where they are located at a considerable distance from each other. To this end I have provided mechanism which permits the automatic disconnection of the op-

erating means from the escapement actuating devices of one channel, and, because of interposed mechanism, its simultaneous connection with the escapement actuating devices of a noncontiguous or remote channel. 60

In the accompanying drawing I have shown my invention in preferred form, but obviously many changes and variations may be made therein without departing from its spirit; and generally speaking, I do not limit myself to any particular form or embodiment except in so far as such limitations are specified in the claims. 65

In the accompanying drawings: Figure 1 is a front view of a portion of a linotype machine with my invention applied thereto; Fig. 2 is a disconnected perspective view of the parts constituting my improvements, on an enlarged scale; Fig. 3 is a front view of certain of these parts; Fig. 4 is an end view thereof; and Fig. 5 is a detail view. 70

Referring to the drawings, Fig. 1 illustrates a portion of an ordinary linotype construction similar to that disclosed in the Mergenthaler patent previously referred to. By the manipulation of the keyboard A, the matrices stored in the channeled magazine B are caused to fall upon the common belt C, by which they are delivered to the assembler elevator D. The assembler D is then raised, as indicated by dotted lines, and the matrices therein are transferred laterally to the first elevator G, by which they are lowered to a mold in the mold wheel H, all in the usual manner. The elevation of the assembler D is effected manually by reason of its connection to the rock shaft D¹ provided with the handle D², which is manipulated by the operator at the end of each line and prior to the assemblage of the succeeding line. At the opposite end of the rock shaft D¹ is mounted the lever arm D³, which is connected to the elevator D by the link D⁴. Also connected to the rock-shaft D¹ and arm D³ is a second arm D⁵ pivotally joined to the rocking lever D⁶ carrying the ratchet pawl D⁷. The pawl D⁷ meshes into and turns the ratchet wheel D⁸ step by step, it being apparent that for each manipulation of the hand lever D² the ratchet wheel D⁸ will be turned through a portion of its circumference. Connected to the ratchet wheel D⁸ is the cam D⁹ formed at its side with alternating risers and depressions, in such manner as to reciprocate the vertically 110

extending lever D^{10} , which is held in normal engagement therewith by the spring D^{11} . The lever D^{10} at its upper end is pivotally connected to the horizontal slide F , which is thus moved forward or backward at each operation of the handle D^2 .

The keyboard mechanism is substantially the same as that employed in the commercial linotype machine and in most respects is similar to that shown and described in the U. S. Letters Patent to P. T. Dodge, No. 530,931, dated Dec. 18, 1894 and to O. Mergenthaler, No. 531,266, dated Dec. 18, 1894. Briefly speaking, the manipulation of the key lever E^1 effects the movement of the sliding piece E^2 and the disengagement of the pawl E^3 , thus permitting the descent of the cam yoke E^5 and the engagement of the cam E^4 carried thereby with the constantly rotated roller E^6 . The consequent rotation of the cam E^4 then effects the vertical reciprocation of the rod or bail E^7 and the similar reciprocation of the rod or piece E^8 contacting therewith and suitably guided in the frame. The said rod E^8 is connected to the matrix escapement, not herein shown but of the general character set forth in the previously mentioned patents, and in the manner well understood in the art. The rod or bail E^7 passes through and is guided in a slot in the previously mentioned sliding piece F , so that its active engagement with the rod E^8 is controlled by the position of the slide. This adjustment becomes apparent from an inspection of Fig. 3, wherein the rod E^7 is shown by full lines in its engaged or operative position and by dotted lines in its disengaged or inoperative position, these relations being governed by the lever D^{10} and cam D^9 , which is moved each time the operator manipulates the handle D^2 . The lateral shifting of the rod E^7 from its operative relation to the rod E^8 also effects its operative engagement with the escapement mechanism of another magazine channel which is not contiguous but may be located at a considerable distance. The escapement operating rod K of this remote or noncontiguous channel has a pin-and-slot connection K^1 with an arm J^2 mounted upon the rock shaft J^1 suitably mounted in the frame. The rock shaft J^1 at its other end is provided with an arm J in suitable position to be engaged and actuated by the pin E^9 on the rod or bail E^7 . In the normal relation of the parts (see Fig. 3), that is to say, when the rod E^7 is in position to actuate the rod E^8 , the short pin E^9 is located at the side of and beyond the arm J , in such manner that the vertical reciprocation of the rod does not effect it. When, however, the rod E^7 is shifted laterally so as to disconnect it from the rod E^8 , the pin E^9 thereon is moved into engaging relation with

the arm J , this last position of the parts being shown by dotted lines in Fig. 3 and by full lines in Fig. 5. The subsequent reciprocation of the rod E^7 , through the connections above mentioned, then effects the reciprocation of the rod K , the actuation of the connected escapement devices, and the delivery of the matrices from the remote or noncontiguous channel.

As previously stated, many modifications and alterations may be made in the form of mechanism herein presented without departure from the scope of the invention. Thus for instance, the devices may be duplicated and applied to any selected magazine channels or to any desired number thereof. These and many other variations will suggest themselves to those skilled in the art.

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

1. In a typographical machine, the combination of two noncontiguous escapement actuating devices, operating means in normal proximity to one of them, connections to the more remote one, and mechanism whereby the said operating means is caused to engage alternately the proximate actuating device and the connections to the remote actuating device.
2. In a typographical machine, the combination of two noncontiguous escapement actuating devices, operating means arranged to operate one of them directly, and connections to enable it to operate the more remote one, together with mechanism whereby the said operating means is caused to engage alternately the first actuating device and the connections to the second actuating device.
3. In a typographical machine, the combination of two noncontiguous escapement actuating devices, operating means arranged to engage one of them directly and the other one indirectly, and mechanism whereby the said means is caused to operate the said actuating devices alternately.
4. In a typographical machine, the combination of two noncontiguous escapement actuating devices, operating means arranged to engage one of them directly, connections to the other of them, and mechanism whereby the said operating means is caused to engage alternately the first actuating device and the connections to the second actuating device.
5. In a typographical machine, the combination of two noncontiguous escapement actuating devices, operating means arranged to engage one of them directly, connections to the other of them, the said connections comprising a rock shaft and arms thereon, one of the arms engaging one of the actuating

5 devices and the other of the arms being arranged to be actuated by the common operating device, and mechanism whereby the said operating means is caused to engage alternately the first actuating device and the last mentioned rock shaft arm.

10 6. In a typographical machine, the combination of the escapement actuating devices E^s and K, the operating means E^r to actuate the device E^s directly, and connections to enable it to operate the device K indirectly, the said connections comprising the rock shaft J¹ and the arms J and J².

15 7. In a typographical machine, the combination of the escapement actuating de-

vices E^s and K, the operating means E^r arranged to actuate the device E^s directly, and connections to enable it to actuate the device K, the said connections comprising the rock shaft J¹, the arm J² connected to the device K, the arm J, and the pin E^o on the operating means E^r.

In testimony whereof I hereunto set my hand this second day of August, 1911, in the presence of two attesting witnesses.

JOHN RAPHAEL ROGERS.

Witnesses:

C. W. WIMBERLY,
WALTER MOBLARD.