J. R. ROGERS.

TYPOGRAPHICAL MACHINE.

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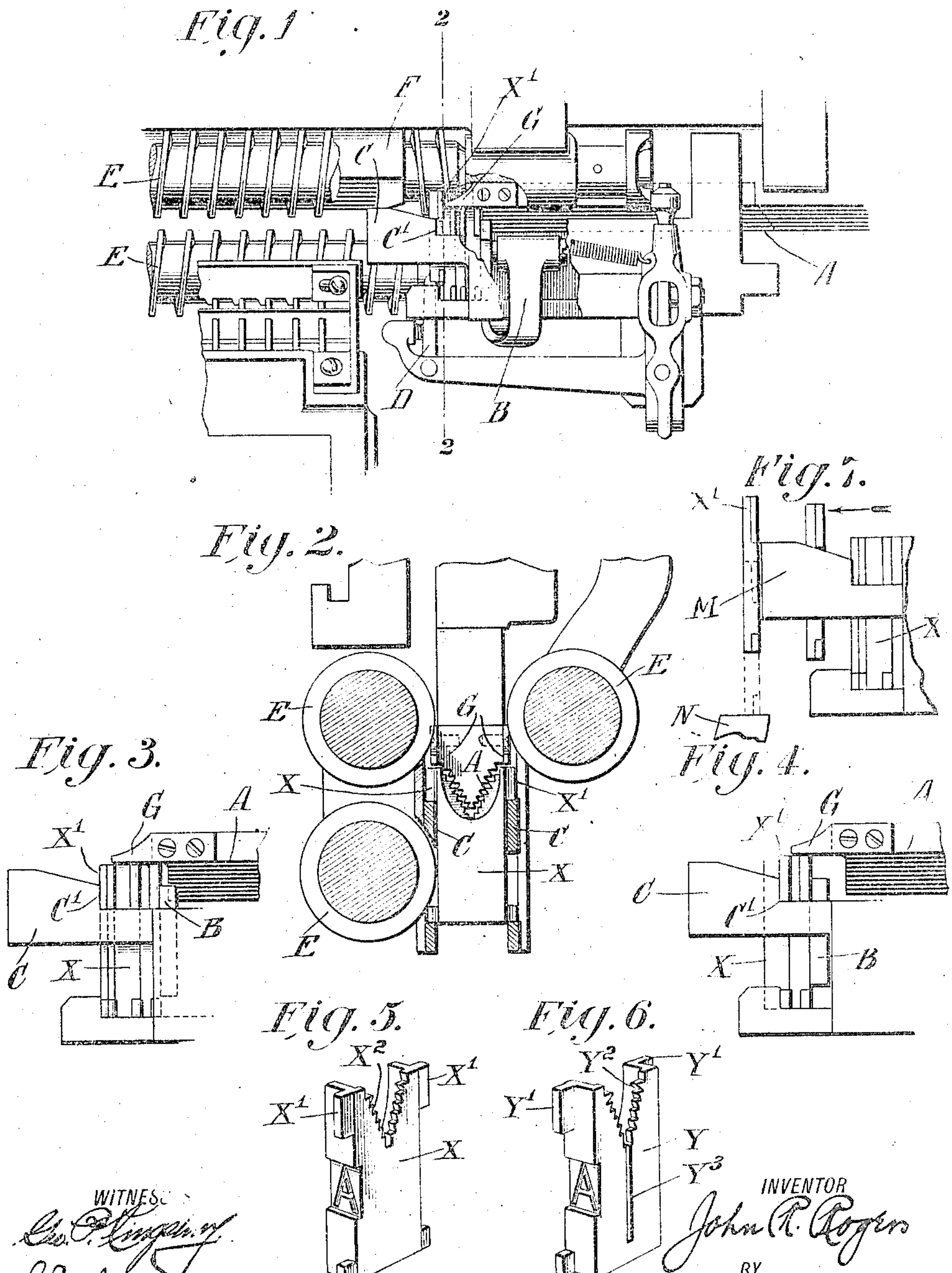
1,111,097. Patented Sept. 22, 1914.



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TYPOGRAPHICAL MACHINE.

1,111,097. Specification of Letters Patent. Patented Sept. 22, 1914.

Application filed November 26, 1913. Serial No. 733,586.

To all whom it may concern:

Be it known that I, JOHN R. 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, 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, 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 thereafter returned through a distributing mechanism to the magazine from which they started.

More particularly, it relates to the construction of the matrices, and this specifically in reference to the distributing means employed in connection therewith.

Generally speaking, as disclosed in the said Letters Patent, or as employed in the commercial linotype machine, the matrices are formed with distributing combinations, and with supporting ears whereby they are controlled in their passage through the machine. These matrices vary in size according to the special characters they are intended to produce, and in the thicker ones the distributing combinations are ordinarily formed in a web of less thickness than that of the matrix body, and the controlling ears are similarly of less than the body thickness. It has been customary to locate the web and ears at opposite sides of such thick matrices, and while this arrangement is entirely satisfactory for certain purposes, it renders them unavailable or disadvantageous for others. In the present instance, therefore, I have produced a matrix with both the ears and the combination web of less thickness than that of its body, but wherein both are located at the rear side of the matrix and in substantially the same plane. As a consequence of this construction, and particularly in connection with the customary distributing devices, I secure certain advantageous results, which proceed from the fact that the matrices may now be disengaged from their supporting means with their rear faces always in the same plane, irrespective of their thickness.

In the accompanying drawing, I have shown my invention in preferred form and by way of example, and as applied to the ordinary linotype machine, but obviously many variations and alterations may be made therein, and in its mode of application, without departure from its spirit. For instance, it may be applied to other forms of typographical machines, such as type setters, type casters and the like, or machines which handle type or dies instead or matrices; or the same principles may be adopted in connection with various styles of mechanism, wherein the functions and capabilities of the improved matrix render it particularly desirable.

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 drawing: Figure 1 is a rear view, partly broken away, of a portion of the distributing mechanism of a linotype machine; Fig. 2 is a sectional view, taken substantially on the line 2—2 of Fig. 1; Fig. 3 is a rear view of certain of the parts shown in Fig. 1; Fig. 4 is a similar view; Fig. 5 shows a matrix having my invention applied thereto, and Fig. 6 a matrix of the kind now in use; and Fig. 7 is a view illustrating a further capability of my improved construction in connection with other mechanism.

Referring to Fig. 5, my improved matrix X is provided with the projecting ears X^1, and the distributing toothed combination X^2 formed in a thin web thereof, it being noted that the ears X^1 and combination X^2 are located at the same side of the matrix and in the same plane. Fig. 6 illustrates the form of matrix Y now in general use, having the ears Y^1, and the distributing combination Y^2 at opposite sides thereof. The matrix Y is also formed with a vertical recess Y^3, which is designed to straddle the end of an overlying bar and thus to permit the elevation of the matrix, when it is lifted into engagement with the distributer screws. The necessity for this recess is entirely dispensed with in my improved construction, and this feature constitutes one of its advantages.

Referring to Fig. 1, the matrices X are as

usual supported by their teeth on the short rail A, and are shifted along it by the transfer device B, whereby they are advanced against the bar C having the shoulders C^1, which contact with the ears X^1, and thereby arrest the matrices in suitable position to be lifted individually by the reciprocating finger D into engagement with the screws E, whereby in turn they are transferred to the distributer rail F.

In Fig. 3, several matrices of different thicknesses are illustrated, ranging from the very thin ones, having ears of substantially the same thickness as that of their bodies, to the very thick ones, having ears of materially less than the body thickness. Referring also to Figs. 1 and 2, it will be noted that the short rail A is provided at each side with a blade or piece G, which overlies the ears X^1 of all the matrices but one, and that the shoulder C^1 is located beyond them at a distance substantially equal to or slightly greater than the thickness of a single ear, in such manner that the blades G will permit the upward passage of one matrix at a time, and this whether the matrix body be thick or thin. In Fig. 3, a thin matrix is shown in position to be elevated, the others being held down by the blades G; and in Fig. 4, a thick matrix is shown in the same position. In other words, due to the location of the ears at the rear sides of the matrices, they will all be disengaged with their rear faces in the same plane, irrespective of their thickness.

In Fig. 7 I show still another capability of the same construction in connection with other mechanism. It will be seen that the matrices X are here supported by their ears X^1 on the guiding rails M, and that as they are moved in the direction of the arrow, they will drop therefrom one by one into the chute N. Due to the construction already described, they are disengaged in the same manner, namely, always with their rear faces in the same vertical plane, irrespective of their thickness. This arrangement involves a considerable degree of convenience, in that it is not necessary to make special adjustment or provide for variation at the time of disengagement. In the older form shown in Fig. 6, when the ears Y^1 are located at the front side, the matrices would drop sooner or later according to their thickness, and consequently with their rear faces more or less advanced in relation to the tube or chute, thus necessitating a special form or location of the latter.

As previously stated, I have shown my invention in preferred form and by way of example, but obviously many variations and modifications will suggest themselves to those skilled in the art and still be comprised within its scope.

While my improved separating mechanism is especially adapted to handle matrices formed with projecting ears located at the rear side, it will be understood that it may be employed with advantageous results both in connection with matrices of ordinary construction, and also in connection with Janus-faced matrices, which are adapted to be reversed during assemblage to bring characters on either edge in operative position, and which would thus be presented to the separating mechanism with the projecting ears foremost or rearmost in the line of travel. The ordinary distributer box is of such character that the matrices are separated only when they are presented with their ears forward, because the customary rail or bar, which overlies the matrices and prevents the separation of more than one of them at a time, engages in a notch in the rear face of the matrix body. In my construction, however, the overlying rails G, due to their location above the projecting ears of the matrices, will allow the separation of Janus-faced matrices whether reversed or unreversed, or of ordinary matrices with their ears foremost, it being noted that there is sufficient space between the rails G to permit the upward passage of the thicker body portions of the matrices when they are arrested with their ears foremost.

By the term "rear side" or "rear face" as herein employed for designating a certain side or face of a matrix, is meant that side of the matrix which during the travel of the latter through both the separating and distributing mechanism is the following one as distinguished from the leading one. In this connection it must be remembered that sometimes or at certain stages of the circulation of the matrix through the machine, it travels otherwise than with the above named rear side rearmost, for instance, during composition, when such side is the leading one instead of the following one.

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:

1. In a typographical machine, the combination of type or matrices formed with projecting ears and movable toward and through the distributing mechanism in the same direction, and means for supporting the type or matrices by their ears, the said projecting ears being located at the rear side of the type or matrices to permit their disengagement from the supporting means with their rear faces in the same vertical plane irrespective of their body thickness.

2. In a typographical machine, the combination of distributing mechanism, a line of type or matrices formed with projecting ears and movable toward the distributing mechanism in the same direction as that of their travel therethrough, and supporting means

comprising a device to arrest the type or matrices by their ears, said projecting ears being located at the rear side of the type or matrices to permit their individual separation from the line with their rear faces in the same vertical plane irrespective of their body thickness.

3. In a typographical machine, the combination of distributing mechanism, a line of type or matrices formed with projecting ears located at their rear side and movable toward the distributing mechanism in the same direction as that of their travel therethrough, a finger to disengage the type or matrices individually from the line, and a device to arrest the movement of the line by engagement with the ears of the leading type or matrix, whereby all the type or matrices will be disengaged from the line with their rear faces substantially in the same vertical plane irrespective of their body thickness.

4. In a typographical machine, the combination of distributing mechanism, a line of type or matrices formed with projecting ears at their rear side and movable toward the distributing mechanism in the same direction as that of their travel therethrough, a device to arrest the movement of the line by engagement with the ears of the leading type or matrix, a finger to detach the leading type or matrix from the line, and a member to prevent the disengagement of more than one type or matrix at a time.

5. In a typographical machine, the combination of a line of type or matrices having projecting ears, a lifting finger to detach the leading type or matrix therefrom, and a fixed member located above the ear of the next type or matrix to prevent the detachment of more than one type or matrix at a time.

6. In a typographical machine, the combination of a line of type or matrices having projecting ears, and movable endwise toward the distributer, a stop device to arrest the movement of the line by engagement with the ears of the leading type or matrix, a lifting finger to detach the leading type or matrix from the line, and a fixed member located above the ear of the next type or matrix and at a distance rearward from said stop device, substantially equal to the thickness of a matrix ear, so as to prevent the detachment of more than one type or matrix from the line at a time.

7. In a typographical machine, the combination of a line of type or matrices formed with projecting ears, and separating means therefor, comprising a stop device to arrest the movement of the line by engagement with the ears of the leading type or matrix, and a fixed member located above the ear of the next type or matrix and at a definite distance rearward from said stop device, the projecting ears of said type or matrices being of such relative thickness that but one type or matrix at a time may be disengaged from the line.

8. In a typographical machine, the combination of a line of type or matrices formed with projecting ears, and separating means therefor, comprising a fixed member to overly the projecting ears of the type or matrices and prevent the separation of more than one matrix at a time from the line.

In testimony whereof I hereunto set my hand this twelfth day of November, 1912, in the presence of two attesting witnesses.

JOHN R. ROGERS.

Witnesses:

DAVID S. KENNEDY,

ALFRED W. F. GUEST.