R. G. CLARK.

DISTRIBUTING MECHANISM FOR LINE CASTING MACHINES.

APPLICATION FILED DEC. 7, 1908.

945,694. Patented Jan. 4, 1910.

Fig. 1.

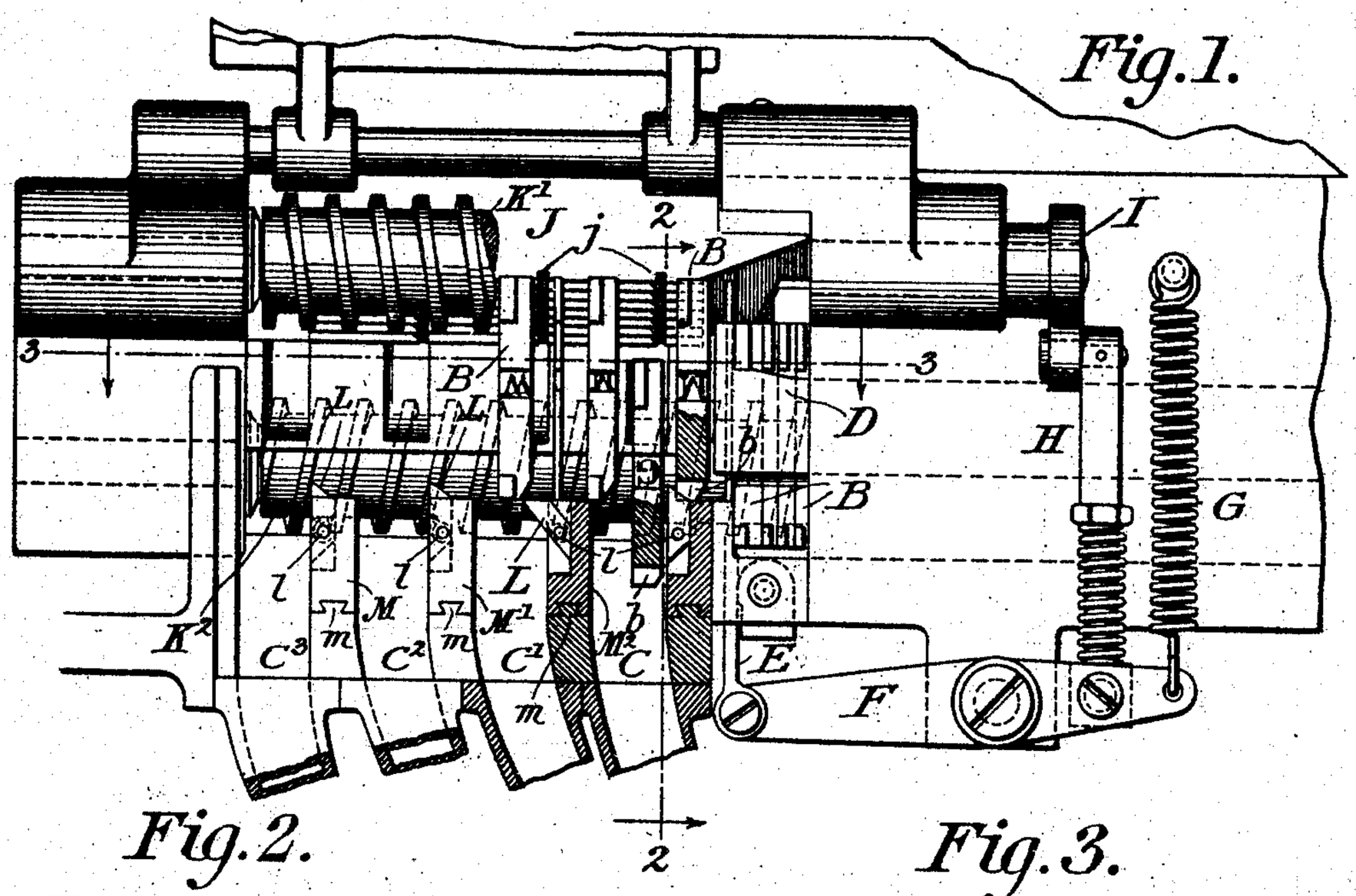
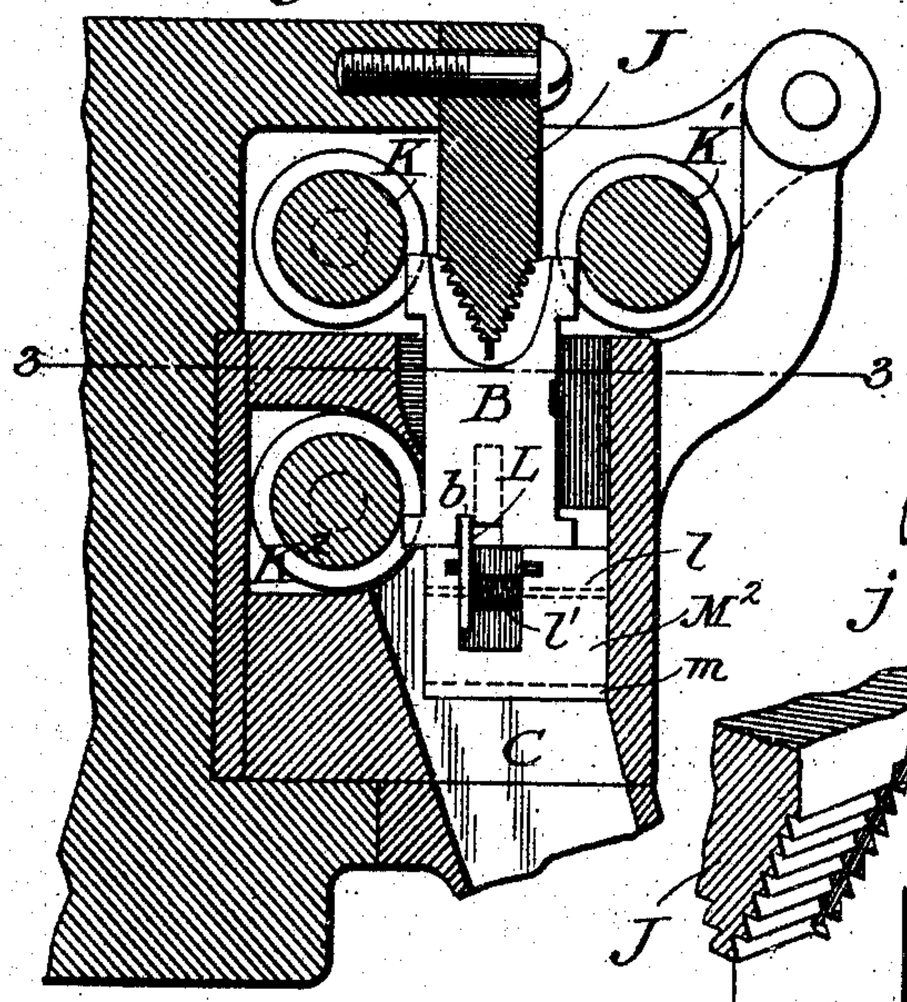


Fig. 2.

Fig. 3.



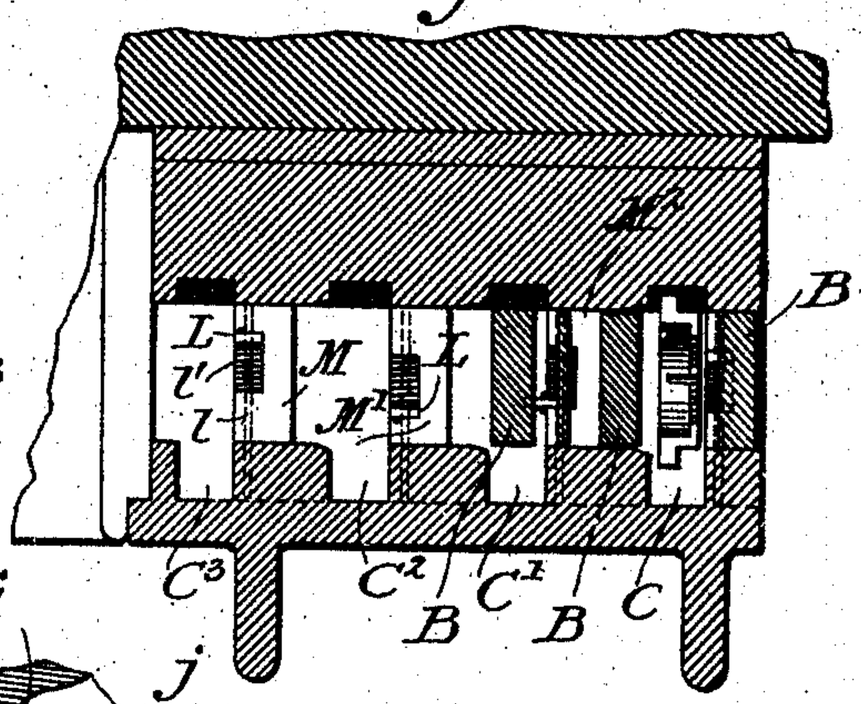
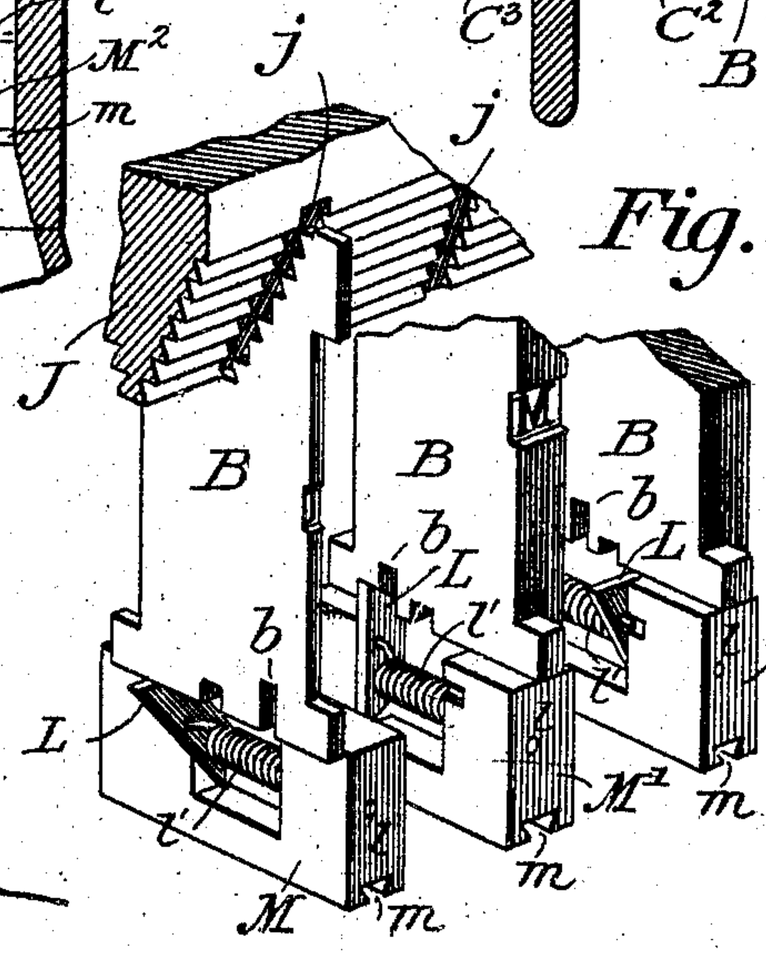


Fig. 4.



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DISTRIBUTING MECHANISM FOR LINE-CASTING MACHINES.

945,694. Specification of Letters Patent. **Patented Jan. 4, 1910.**

Application filed December 7, 1908. Serial No. 466,396.

To all whom it may concern:

Be it known that I, ROBERT G. CLARK, of the borough of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Distributing Mechanisms for Line-Casting Machines, of which the following is a specification.

My invention relates to mechanism for distributing or sorting matrices such as are used in Mergenthaler line casting machines and kindred machines.

The invention is intended more particularly for use in that class of machines in which lines are composed of matrices belonging to different fonts, and carried in different magazines, for the purpose of distributing the matrices according to font and delivering all those of one font to the same point, preparatory to their further distribution according to character; but it is to be understood that the invention may be extended in its application to mechanisms for distributing matrices of the same font according to their characters.

The invention consists essentially in combining with means for carrying variously notched matrices thereover, movable dogs or supports arranged in various positions in the path of the matrices, in such manner that they will remain at rest and unaffected by passing matrices which are so notched as to straddle the dogs, while matrices which are not correspondingly notched will move the dogs to such positions that they will support the matrices and cause them to continue their forward course instead of being discharged.

While my invention is susceptible of embodiment in various forms, and while it may be combined with coöperating devices differing in form and arrangement, I recommend the construction and combination of parts shown in the accompanying drawings.

The drawings are limited to those parts of the machine immediately associated with my improvement, and it is to be understood that all other parts may be of the ordinary or any suitable construction.

In the drawings: Figure 1 is a rear elevation of my improved distributing mechanism adapted to separate matrices belonging to four fonts or sets, a portion of the rear wall being broken away to expose the internal parts to view. Fig. 2 is a vertical transverse section on the line 2—2 of Fig. 1. Fig. 3 is a horizontal section on line 3—3, Figs. 1 and 2 looking in a downward direction. Fig. 4 is a perspective view illustrating three of the supporting dogs with three matrices advancing thereover, together with the upper rail or bar for sustaining the matrices.

Referring to the drawings, A represents a portion of the framework, which may be of any construction adapted to support the other parts.

B, B represent the matrices belonging to various fonts. These matrices are introduced horizontally in a composed line, and it is the purpose of the mechanism to separate them and deliver them according to font into the respective channels, C, C′, C^2 and C^3, leading to secondary distributing mechanisms, or elsewhere, as the occasion may require. The matrices are of a form well known in the art and commonly used in Mergenthaler machines, each having in the upper end a V-shaped notch with teeth by which it may be suspended from the distributer rail. Each matrix is also provided in the lower end with a vertical notch, *b*, those for each font being in a special or distinctive position, the position being the same for all matrices of the same font.

The composed line is introduced from the left between two horizontal rails, D, which are extended upward at the forward end to engage the upper ears of the foremost matrix and thus arrest the advance of the line. This foremost matrix stands for the time being over a lifting pawl or dog, E, carried by a lever, F, which is urged downward by a spring, G, and carried upward at short intervals by a vertical slide, H, actuated by a cam, I.

J represents a fixed horizontal bar having its lower edge of V form with longitudinal teeth thereon to engage the teeth of the matrices and sustain them during a portion of their travel from the line to the point of delivery, *j*. As shown in Figs. 1 and 4 this bar has all its teeth cut away over each of the delivery channels, C, C′, etc. This bar having interrupted teeth constitutes an over-

head support by which the advancing matrices are repeatedly sustained and released.

K, K′ and K² are horizontal screws designed to engage the edges of the matrices and carry them forward horizontally on the bar J after they are lifted, one at a time, by the dog E.

As soon as each matrix is lifted clear of the detaining rail, D, into engagement with the screws, it is moved forward horizontally so that its teeth engage the bar J, by which the series of matrices are supported as they move to the left. Each time that the teeth of an advancing matrix reach one of the openings, *j*, its teeth are disengaged from the sustaining bar J, and the matrix is free to fall unless otherwise supported.

For the purpose of preventing each matrix from falling until it has arrived over the proper one of the channels, C, C′, etc., I mount between each of these channels and the next an underlying matrix support in the form of an upright dog or bridge L mounted on a horizontal pivot *l* and urged toward an upright position by a spring *l′* as shown in Figs. 2, 4, etc. These dogs stand out of line horizontally, or, in other words, opposite different points in the width of the passing matrices. Whenever a notch in the matrix advancing toward one of the dogs registers with the dog it will straddle the same in the manner shown in connection with the right hand matrix in Fig. 1 and the middle matrix in Fig. 4, and the matrix will continue its course without affecting the dog. When the teeth of this matrix, suspended from the bar J, reach the next slot or interruption, *j*, in the teeth of the bar the matrix will be released, and, falling from the bar, will continue its course downward into the underlying channel C or C′ in the manner shown in Fig. 1. If on the other hand the notch in the matrix fails to register with the dog toward which it is advancing it will act against the upper end of the dog and turn the same forward in the manner shown on the left hand in Fig. 4, and also over the channel C′ in Fig. 1. The dog thus moved will serve as a temporary bridge or support on which the lower end of the matrix will travel, and by which the matrix will be sustained until it has advanced far enough for its teeth to again engage the supporting bar J.

It will be perceived that the function of the dogs or lower supports L is to cause reengagement with the bar J by those matrices which have not reached the proper point for discharge by supporting or sustaining them at their original level, so that they cannot fall away from the distributer bar.

It will be observed that each matrix is sustained at the upper and the lower end alternately, that is by the bar J and the dogs L alternately.

I believe the present to be the first instance in which a distributing mechanism for notched matrices has included temporary matrix supports in the form of movable dogs or bridges to be actuated only by those passing matrices which are not properly nicked or notched; also the first instance in which an interrupted overhead support adapted to repeatedly sustain and release the matrices has been combined with movable supports actuated by the passing matrices. The skilled mechanic will understand that these dogs, to be active or passive according to the form of the passing matrix, may be constructed in a great variety of forms and arranged in a great variety of combinations.

The movable dogs or under supports, L, may be sustained in any suitable way, but their pivots are preferably mounted in supporting blocks M, M′, etc., removably seated in the frame, so that the dogs may be transposed or rearranged. This admits of the matrices of any particular font being delivered into any one of the channels C, C′, etc., as may be required.

The blocks M, etc., are preferably constructed with dovetail grooves, *m*, in their under sides to engage a corresponding rib on the main frame. This admits of the blocks being readily removed in an endwise direction, and holds them securely in place.

While my mechanism is intended more particularly for the distribution of matrices, it is to be understood that it may be used for the distribution of type or type dies.

The expression "interrupted support" and similar expressions throughout this specification are intended to indicate a means by which the horizontally traveling matrices are repeatedly supported and freed from support; and the expression "lower supports" and similar expressions are intended to indicate supports by which the horizontally traveling matrices are sustained at their original levels, or at suitable levels to admit of their reëngaging the overhead supports as they advance to their appropriate place.

Having described my invention, what I claim is:

1. In a matrix distributing mechanism, an overhead interrupted matrix support and means for moving the matrices along the same, in combination with a lower matrix support, movable to an active position by the passing matrices; whereby the advancing matrices may be supported at their upper and lower ends alternately until they arrive at the proper point of discharge.

2. In combination with the overhead rail having interrupted teeth to sustain the traveling matrices, supports to carry the matrices across the interruptions in said teeth, said supports arranged to stand normally in inactive positions and to be moved to active

positions by passing matrices; whereby matrices differently nicked may be released at different points.

3. Matrices variously nicked in combination with an overhead interrupted support for the traveling matrices, and lower movable matrix supports variously arranged substantially as described; whereby each matrix is caused to reëngage the upper support until it arrives at the proper point for release.

4. In combination, an interrupted upper support for the matrices, means for advancing the matrices along said support and a series of lower matrix supports variously arranged beneath the interruptions in the upper support, and movable to an active position by passing matrices; whereby variously notched matrices are caused to control the lower supports, and escape at one point or another in their travel.

5. In a distributing mechanism, means for advancing matrices successively along a common path and variously located matrix supports in said path, the respective supports adapted to be moved into action by the passing matrices or to remain inactive according to the variant forms of the matrices.

6. In a distributing mechanism, means for advancing notched matrices along a common path, and a movable matrix support located beneath said path, and controlled in its action by the passing matrices.

7. In a distributing mechanism, means for advancing matrices in a common path, a pivoted yielding dog standing normally in the path of the matrices, and adapted to sustain those matrices which are not adapted to straddle it.

8. In a distributer, the combination of the sustaining bar with interrupted teeth, the feed screws, the matrix receiving channels, and the pivoted spring sustained matrix supporting dogs arranged in different positions in the path of the matrices.

9. In a distributing mechanism, means for advancing the matrices, in combination with under supports standing normally in an inoperative position, but movable by passing matrices to a position for sustaining said matrices.

In testimony whereof I hereunto set my hand this twenty seventh day of November, 1908, in the presence of two attesting witnesses.

ROBERT G. CLARK.

Witnesses:

JOHN R. ROGERS,

LUCY E. SMITH.