

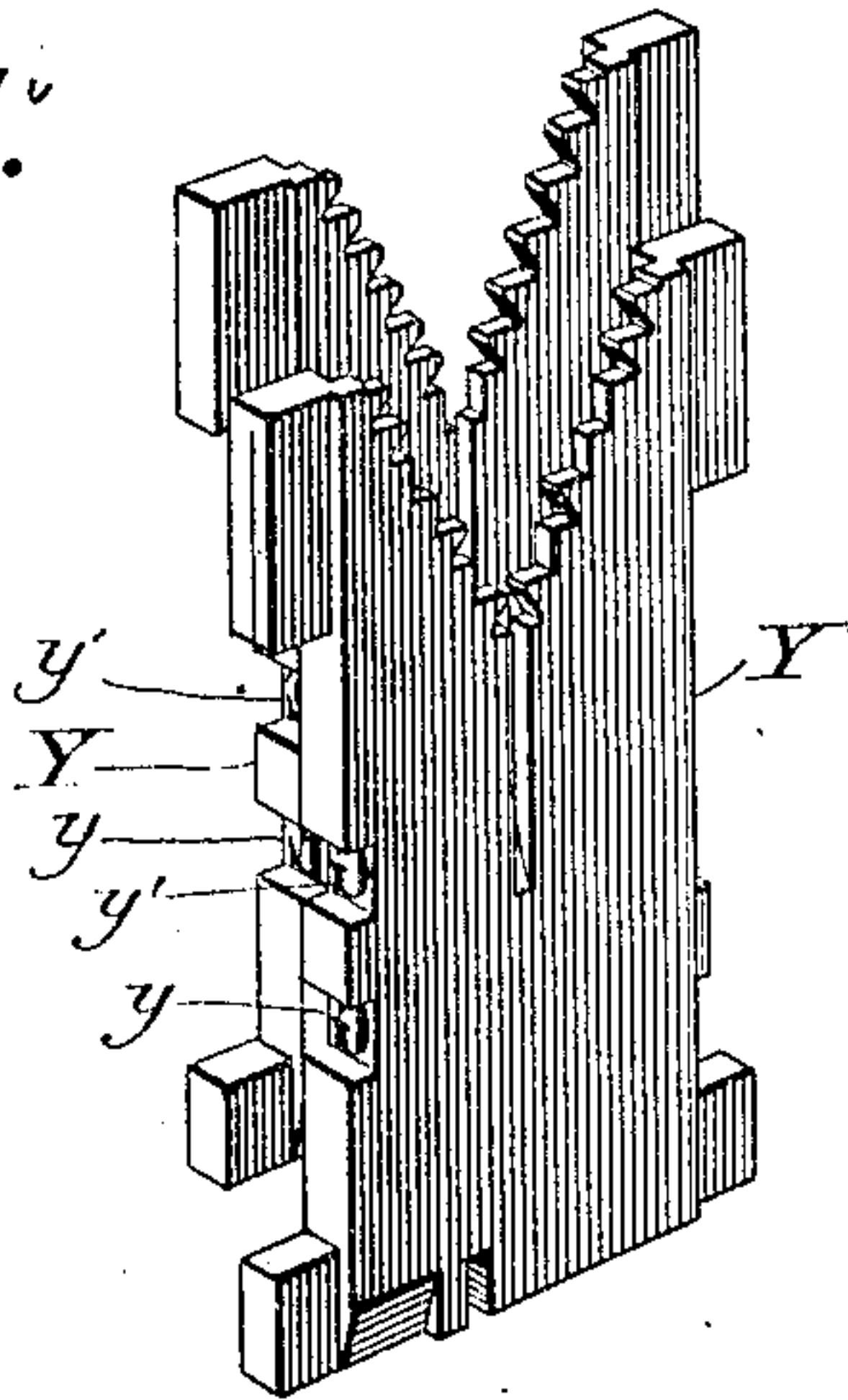
No. 835,256.

PATENTED NOV. 6, 1906.

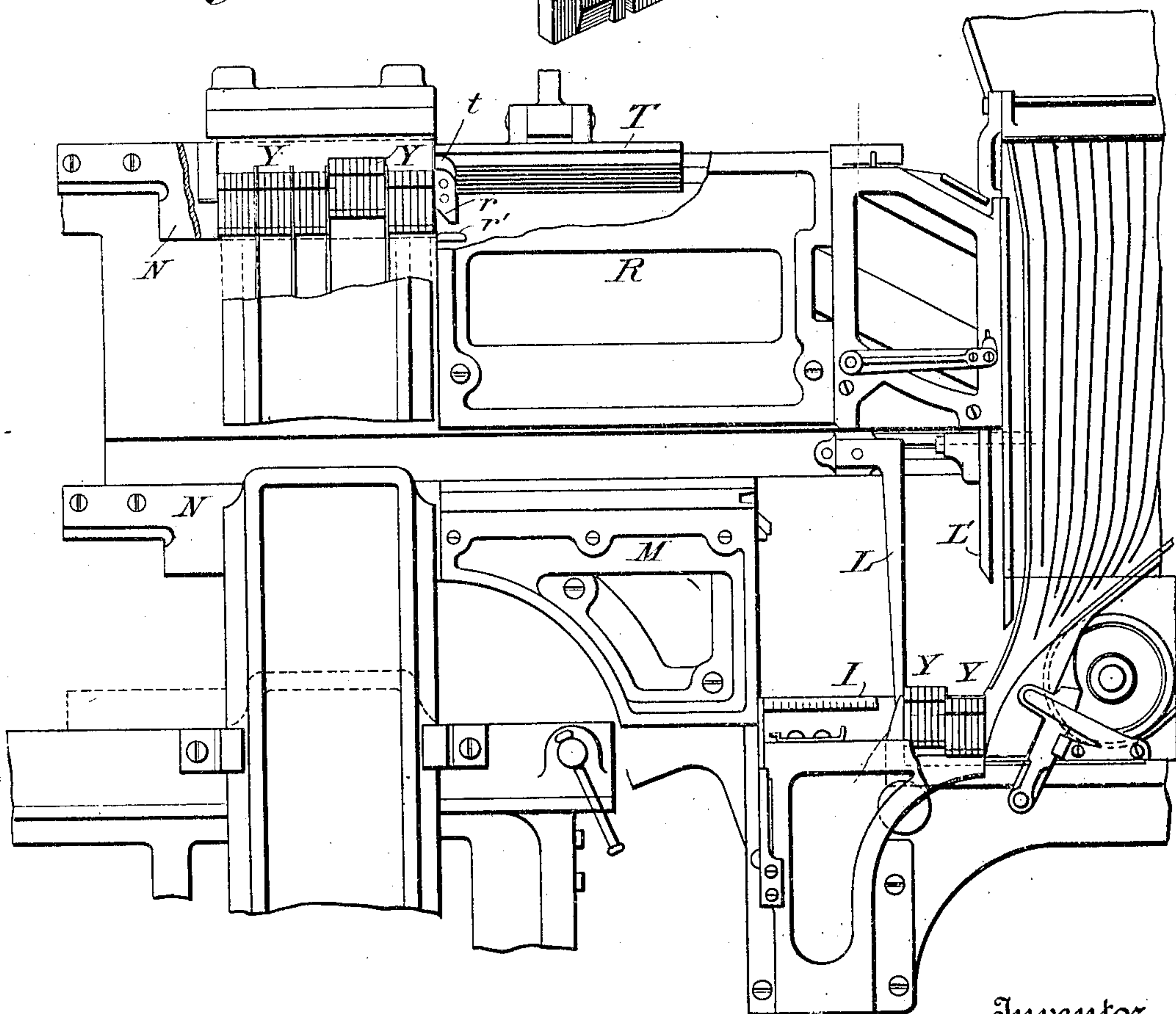
J. R. ROGERS.  
LINOTYPE MACHINE.  
APPLICATION FILED NOV. 16, 1905.

2 SHEETS—SHEET 1.

*Fig. 1.*



*Fig. 2.*



Witnesses  
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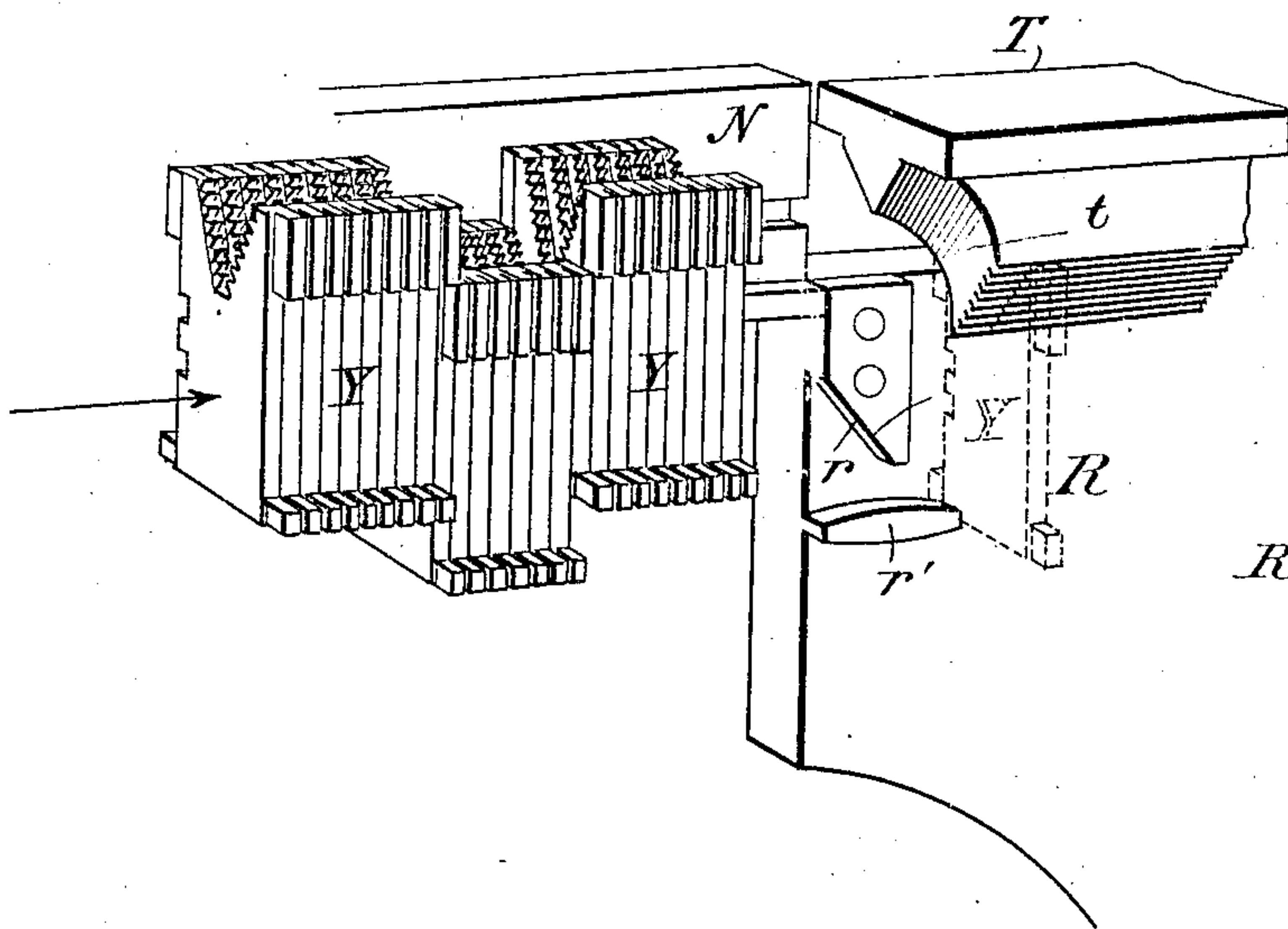
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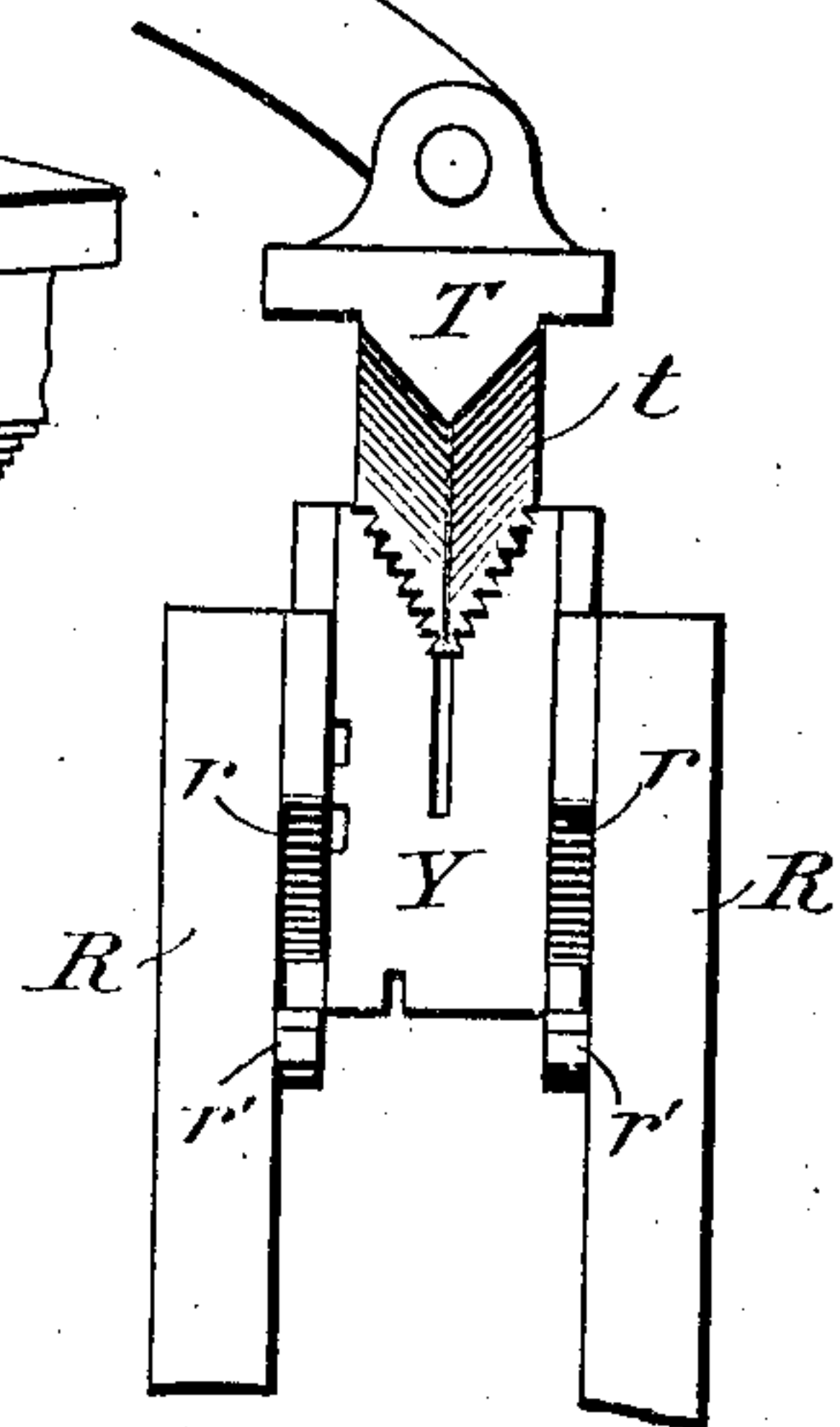
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2 SHEETS—SHEET 2.

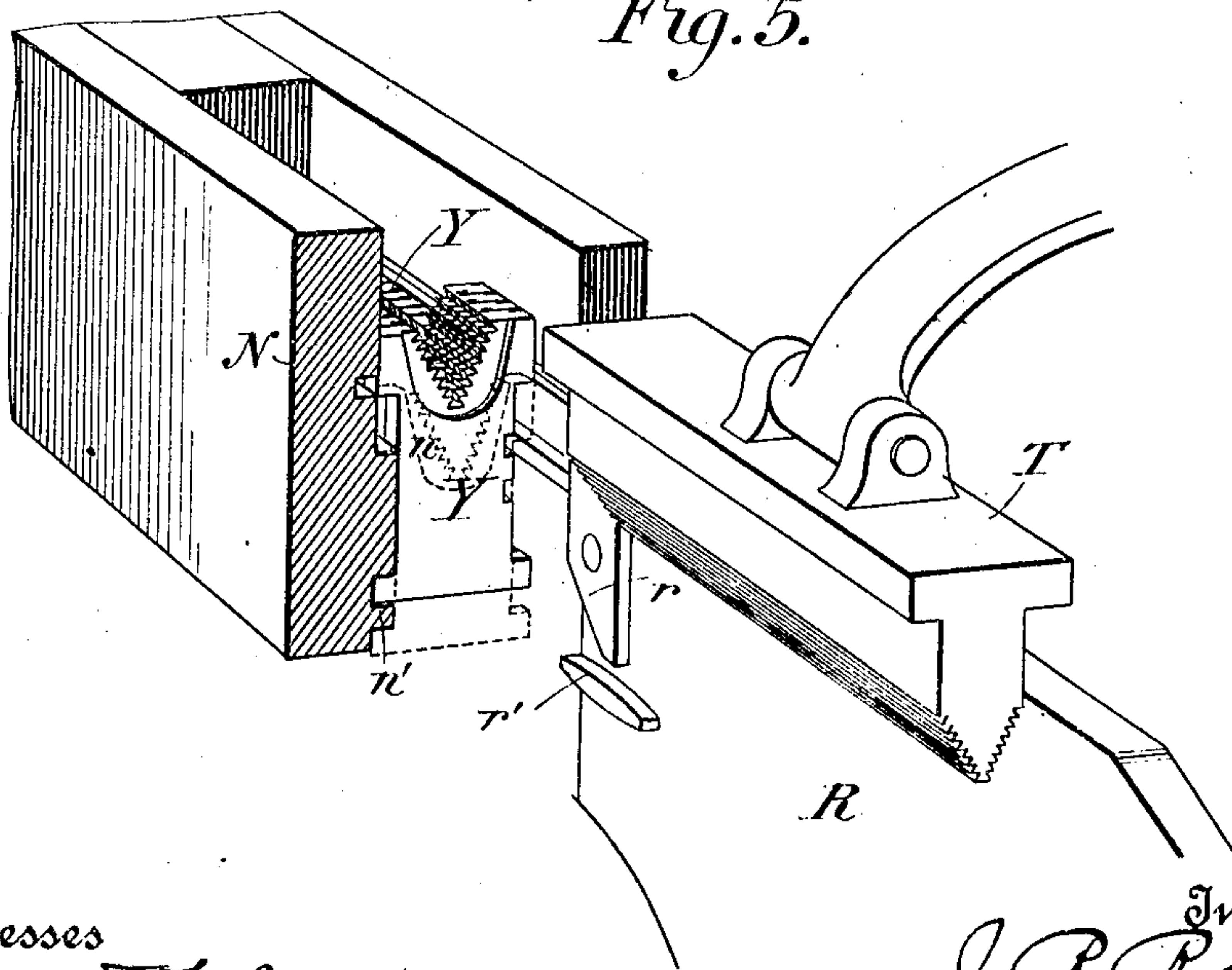
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

JOHN R. ROGERS, OF NEW YORK, N. Y., ASSIGNOR TO MERGENTHALER  
LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

## LINOTYPE-MACHINE.

No. 835,256.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed November 16, 1905. Serial No. 287,596.

*To all whom it may concern:*

Be it known that I, JOHN R. ROGERS, of Brooklyn, New York city, county of Kings, and State of New York, have invented a new and useful Improvement in Linotype-Machines, of which the following is a specification.

This invention has reference more particularly to Mergenthaler linotype-machines of the class represented in Letters Patent of the United States No. 615,909, granted to me on the 13th day of December, 1898.

In these machines each matrix contains two separately-usable characters, one at a higher level than the other. Provision is made for determining in the course of assemblage the height or vertical adjustment of each matrix in the line, so that when required certain matrices may be adjusted above their normal position in order to bring their lower characters into alinement with the upper characters of the other matrices, this for the purpose of mixing or combining in one line characters of different styles or sizes. The matrices assembled or composed at the different levels maintain their relations when transferred to the casting mechanism; but after leaving the casting position it is necessary that all the matrices in the line should be brought to a common level before they are transferred to the distributing mechanism, by which they are returned to the magazine. The matrices are sustained in front of the mold by a vertically-movable support, known as the "first elevator," by which they are also lifted from the casting position preparatory to distribution. In the machine shown in my previous patent this first elevator was provided with a movable blade by which the matrices elevated in the line were maintained in the position for the time being, the blade being finally retracted in order to permit the elevated matrices to fall in series to the level of their companions. The present invention has in view the simplifications of this mechanism, and the result is accomplished by dispensing with the movable blade and so constructing the parts that as the matrix-line is carried endwise out of the first elevator the elevated matrices are permitted to fall successively to the lower level.

I have restricted the accompanying drawings to those parts of the machine which are necessary to an understanding of my invention. In all other respects the machine may be of the construction shown in Letters Patent Nos. 615,909 and 436,532.

Figure 1 is a perspective view illustrating the manner in which the two-letter matrices are assembled at different levels. Fig. 2 is a front view of a portion of a linotype-machine containing my improvement. Fig. 3 is perspective view showing the second elevator and the intermediate channel with the line of matrices advancing thereto. Fig. 4 is an end view of the parts shown in the preceding figure. Fig. 5 is a perspective view of the parts shown in Fig. 3 looking in the opposite direction.

Referring to Fig. 1, Y Y represent two ordinary two-letter matrices of the form commonly used in Mergenthaler linotype-machines, each having on one edge two matrices or characters  $y$  and  $y'$ , separably usable and located one above the other. When the lower character of one matrix is to appear in alinement with the upper character of the next, the matrices are assembled at different levels, as shown in Fig. 1, so that the selected characters will be in the same horizontal line and adapted to produce the characters on one and the same slug as heretofore.

Referring to Fig. 2, I represents the assembling-elevator, in which the matrices Y are assembled either at a common level or at different levels if upper and lower characters are to appear in the same line. The assembling-elevator is movable vertically for the purpose of presenting the composed line between the depending fingers L and L' of a sliding carriage, by which the line is transferred horizontally out of the elevator I, through the fixed channel or guide M, into the upper channeled end of the support N, known as the "first elevator." This elevator first descends to the position indicated by the dotted lines to present the line to the casting mechanism, and subsequent to the casting action it rises to the upper position (shown in Fig. 2) above its original level, so that the composed line of matrices may be pushed out horizontally to the right into a fixed channel R, known as the "intermediate



channel," the same movement causing the teeth in the upper ends of the matrices to engage the teeth of the second elevator T, by which the line of matrices is lifted to the distributing mechanism at the top of the machine.

So far as described the parts may all be constructed and arranged to operate in the same manner as the parts indicated by the same letters in Patent No. 615,909.

Instead of providing the first elevator N, as heretofore, with a horizontal retractable blade to sustain those matrices which are elevated above their companions in the line I now construct this elevator, as shown in Fig. 5, with solid walls or sides having fixed horizontal shoulders  $n$  and  $n'$ . The upper shoulders  $n$  are adapted to bear beneath the ears or shoulders at the upper end of those matrices which stand at the lower or normal level in order to sustain them, as heretofore. The lower shoulders  $n'$  are so located as to bear under the lower ends of those matrices which are elevated in the line, as shown in Fig. 5, in order to sustain them above their companions. The various matrices are thus sustained in their original relative positions while being presented to the mold and until lifted to the upper level.

The end of the second elevator T instead of being formed as heretofore is recessed or cut away on the under side at the end next to the elevator N, as shown at  $t$ , so that as the matrix-line is pushed endwise to the right out of the elevator N, as in ordinary linotype-machines, the elevated matrices, riding off from the end of the shoulder  $n'$ , are permitted to fall by gravity to the level of the lower matrices, so that all of the matrices thus brought to a common level will engage the teeth of the bar T as they are advanced thereunder in the usual manner.

In order to insure the descent of the advancing matrices, I propose to provide on either or both walls of the passage R inclined shoulders  $r$  in position to override the lower ears of the advancing matrices and insure their downward movement.

As a means of preventing the matrices from falling below the proper level as the line advances toward the elevator T, I propose to provide on either or both sides of the channel R fixed horizontal lips  $r'$  in such position that the advancing matrices will pass thereover and ride thereon. This will insure the maintenance of the matrices at such a height that their teeth will readily and certainly engage those of the elevator T. The matrices may, however, receive additional support, as heretofore, by having their upper ears or shoulders ride upon the side walls of the channel R.

The receiving end of the elevator-bar T is preferably beveled or cut away in a V form,

as shown in Fig. 4, in order that it may enter the notches in the upper ends of the matrices and assist in guiding them as they descend.

The essence of my invention resides in so forming the matrix-supports that the elevated matrices in the line are released and permitted to descend as the line moves endwise from the elevator N to the second elevator T. The only requirement in this regard is that the guides or supports shall be removed or cut away in any suitable form and at any suitable point to permit of the matrices falling from the upper to the lower level without retracting or temporarily removing the supports, as heretofore.

If preferred, the teeth of the bar T may be continued to its receiving end, as heretofore, and the supporting-shoulders  $n'$  of the elevator N cut away at the delivery end to permit the fall of the matrices before they leave the elevator N.

The usual circulating wedge-spacers are employed in the machine to justify the line; but as they operate in the ordinary manner and are foreign to the present invention it is unnecessary to describe them here.

I believe myself to be the first to provide means whereby matrices standing at one level in a combined line may be caused or permitted to move successively to a different level, and my invention embraces any construction to this end the mechanical equivalent of that herein shown.

Matrices having two characters each, as herein described, are commonly known in the art as "two-letter" matrices, and the machines adapted to use such matrices and control their relations vertically are known as "two-letter" linotypes.

Having thus described my invention, what I claim is—

1. In a two-letter linotype-machine the matrices, in combination with the first elevator and the second elevator to receive the matrix-lines therefrom, said parts formed to permit the descent of the high matrices successively as they pass to the second elevator.

2. In a two-letter linotype-machine the first elevator having fixed shoulders to sustain the matrices at different levels, in combination with the second elevator formed to permit the descent of the high matrices in the advancing line and means to sustain the matrices at the lower level and guide them into engagement with the second elevator.

3. The elevator N with fixed matrix-sustaining shoulders at different levels, in combination with elevator T channel R and depressing-shoulder.

4. The matrix-elevator T, having its teeth terminated in advance of the receiving end, and the end of V form substantially as shown.

5. In a two-letter linotype-machine having means to assemble matrices at different



levels in the same line, means for restoring the matrices successively to a common line.

5 6. In a linotype-machine having means to sustain matrices at different levels in a composed line, means for moving the line end-wise and means whereby the matrices at one level are caused to aline successively with the matrices at the other level.

In testimony whereof I hereunto set my hand, this 31st day of October, 1905, in the presence of two attesting witnesses.

JOHN R. ROGERS.

Witnesses:

R. G. CLARK,

E. B. LAWRENCE.