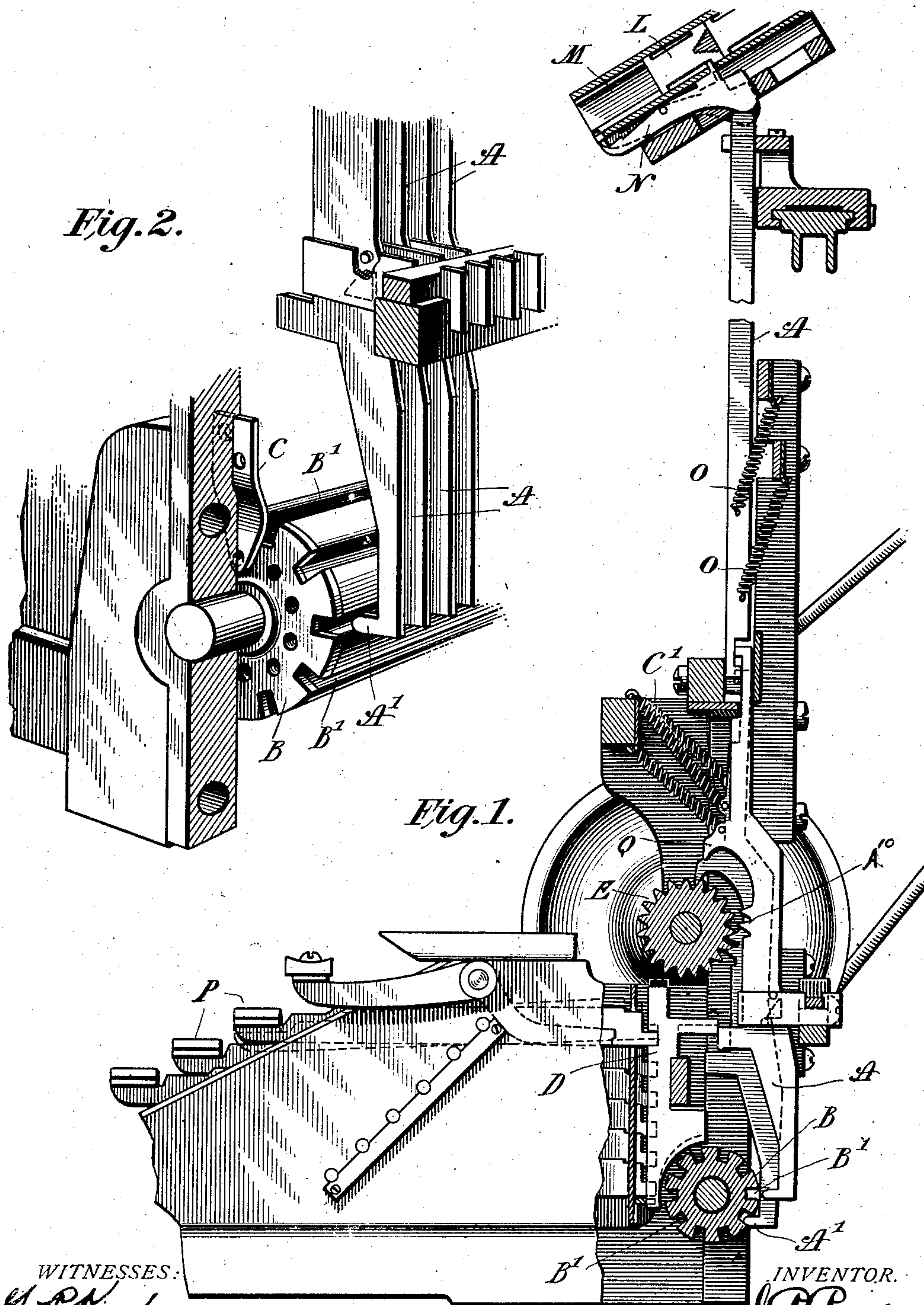


J. R. ROGERS.
 KEYBOARD MECHANISM FOR LINOTYPE MACHINES, &c.
 APPLICATION FILED JUNE 23, 1910.

973,566.

Patented Oct. 25, 1910.

2 SHEETS—SHEET 1.



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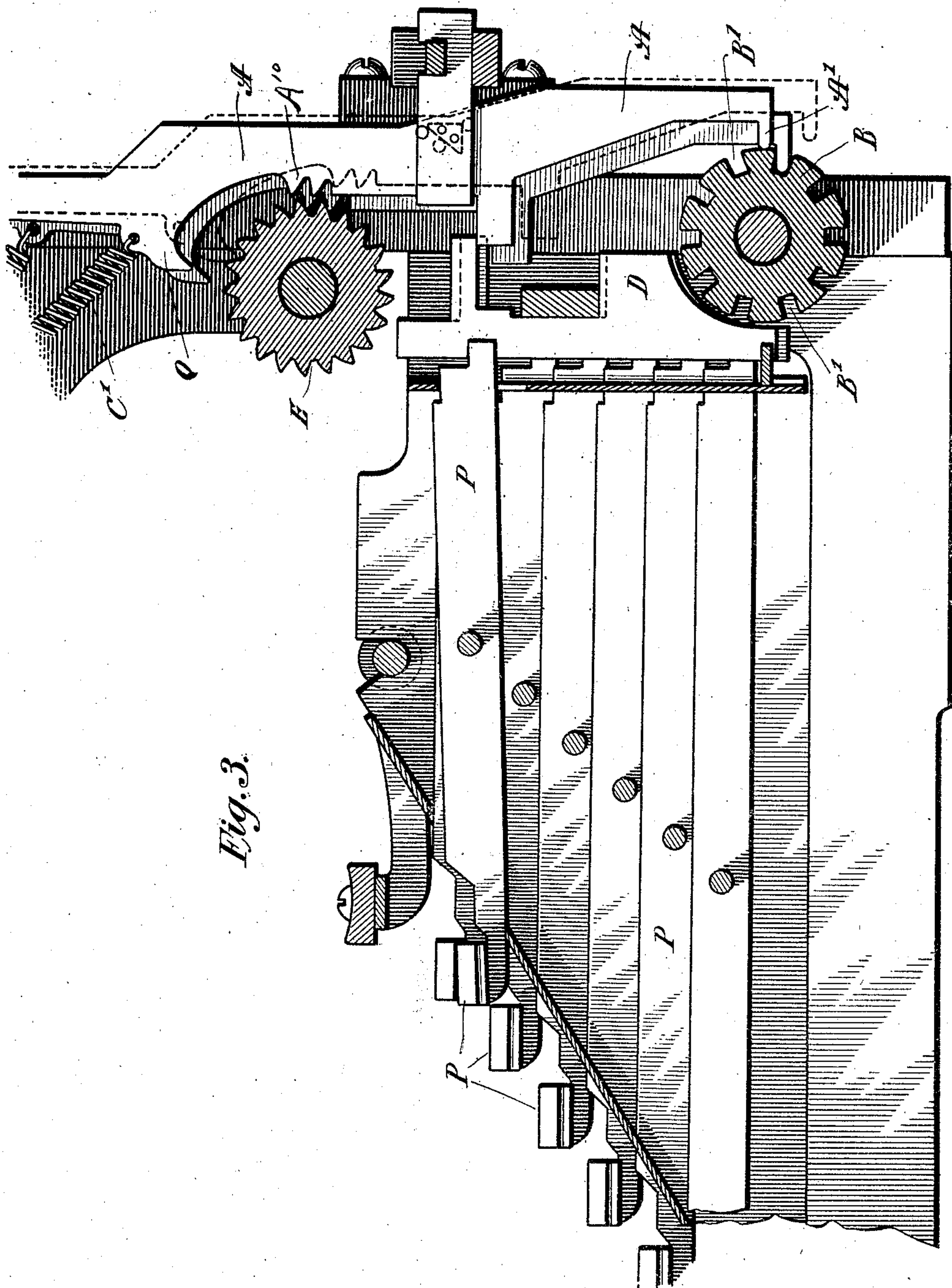


Fig. 3.

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

KEYBOARD MECHANISM FOR LINOTYPE-MACHINES, &c.

973,566.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed June 23, 1910. Serial No. 568,470.

To all whom it may concern:

Be it known that I, JOHN RAPHAEL ROGERS, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Keyboard Mechanism for Linotype-Machines, &c., of which the following is a specification.

My invention relates to keyboard mechanisms and is more particularly designed to insure a predetermined and definite interval between the operation of successively selected escapement-operating members. In the form specifically described in the specification, and as presented in the drawings, it is shown as applied to the keyboard mechanism of the well-known linotype machine, but obviously it is equally applicable to other keyboards, and in fact to any form of device wherein such definite intervals in operation are necessary or desirable.

In the use of the keyboards of linotype and other typographical machines, experience shows that operators as a general rule acquire a regular touch and that ordinarily they depress three or four keys per second, which rate of speed permits the regular and satisfactory delivery of the matrices or type. It often happens, however, that in certain familiar combinations, such as the word "the", the word "and", and the like, they will strike the keys at a much more rapid rate, and thus tend to clog the assembler or else cause transposition of the letters. Moreover, such undesirable results also arise at the hands of less experienced and skilful operators, who are not able to maintain a uniform rate, and who at times operate certain of the keys in too rapid succession.

The purpose of my invention is to obviate these difficulties by mechanical appliances which establish predetermined and definite intervals between the actuation of successively selected escapement devices, this being entirely independent of the skill or speed of the operator.

In the accompanying drawings: Figure 1 is a right-hand end view, partly in section and partly broken away, of the keyboard mechanism and connected parts; Fig. 2 is an enlarged detail view; and Fig. 3 is an enlarged sectional view, somewhat similar to Fig. 1, showing various positions in the operation of the parts.

By the way of example and for purposes of illustration, I have shown my invention applied to a form of keyboard mechanism as substantially presented in my earlier Letters Patent No. 808,873, January 2, 1906, but as before stated it may be similarly employed in connection with other mechanisms, and I desire it to be distinctly 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.

Generally speaking, the matrices L are stored in the channels of the magazine M, and their delivery therefrom is controlled by the escapements N. These escapements are operated by key-rods or reeds A, A, having the teeth A¹⁰ which are actuated in one direction by the power-driven serrated roll E and in the opposite direction by the springs O, O. The selection of the reeds or key-rods A is governed by the key-levers P, P, which operate through the key-bars D to release the reeds A, A, and permit them to be drawn toward the actuating roll E by the springs C¹. Each reed A is provided with a projecting nose Q, which, as the reed is actuated, engages with the teeth of the roll E and thus restores the reed to its normal position. These parts are old in the art and are arranged and operated in substantially a similar manner to those set forth in my Letters Patent previously referred to.

It will be seen that the means above described do not necessarily insure a predetermined and definite interval between the actuation of successively selected reeds, which it is the purpose of my present invention to effect. To this end, I provide a rotatable roller B, longitudinally grooved at B¹, which roller is located near the bottoms or ends of the reeds A, A, and in such relation thereto that when a reed A is selected and released, one of the grooves B¹ therein will be entered and engaged by a projecting lug A¹ formed at the end of the reed. The roll B is preferably constructed of aluminum, wood, or some very light substance, so as to reduce its momentum to the minimum; and I prefer also to provide the roll with a spring-mounted detent C (see Fig. 2), or similar frictional device, to prevent overthrow.

When a reed A is selected and released, its spring C¹ draws it into engagement with the serrated roll E, and at the same time

throws its lug A^1 into the registering groove B^1 of the roll B. The rotation of the roll E then moves the reed A downward and simultaneously effects the rotation of the roll B until the lug A^1 is disengaged from the groove B^1 by the rearward motion of the reed A caused by the engagement of its nose Q with the serrated roll E in the manner previously described. At this time the roll B comes to rest with its succeeding groove B^1 in position to be engaged by the lug A^1 of the next selected reed A. It will be manifest that if the operator touches a key, and releases a second reed A before the first reed has reached its lowest point, its lug A^1 will strike upon the outer peripheral portion of the roll B, and consequently the reed will be held from engaging with the roll E until the second groove B^1 of the roll B is presented in registering position. In other words, an interval is established between the actuation of two successively selected reeds equal to the time consumed by the partial rotation of the roll B. Therefore it becomes immaterial how brief is the interval between the actuation of two successive keys, as no second type or matrix will be released before the first type or matrix has been properly delivered. I thus secure a small but distinct and certain interval between the action of the escapements, no matter how rapidly the operator touches the successive key, and even though the difference be only a small fraction of a second. On the other hand, the lapse of time in the movement of the roll B from one groove to the next is so very small that it is a virtual impossibility for the operator to touch two keys within it, so that two reeds would engage the next presented groove together.

As previously stated, the form of embodiment herein disclosed is simply given by way of example and as a preferred form, and numerous variations and modifications therein will suggest themselves to those skilled in the art without departure from the spirit of my invention.

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 keyboard mechanism, the combination of a plurality of escapement-operating members and actuating devices therefor, with independent means to establish a predetermined and definite interval between the actuation of the successively selected members.

2. In a keyboard mechanism, the combination of a plurality of escapement-operating members, selecting and actuating means

therefor, with independent means to establish a predetermined and definite interval between the actuation of the successively selected members.

3. In a keyboard mechanism, the combination of a plurality of escapement-operating members, selecting and actuating means therefor, together with independent means to hold a selected member temporarily out of engagement with the actuating means to establish a predetermined and definite interval between the actuation of the successively selected members.

4. In a keyboard mechanism, the combination of a plurality of escapement-operating members with selecting and actuating means therefor, together with a grooved roll to engage the said members, whereby a definite and predetermined interval is established between the actuation of the successively selected members.

5. In a key-board mechanism, the combination of a plurality of escapement-operating members and selecting and actuating means therefor, with a rotatable roll formed with grooves adapted to engage the said members, whereby a selected member engages one of the grooves thereof and rotates the roll and thus holds a second selected member out of engagement with the actuating means until another groove registers therewith.

6. In a keyboard mechanism, the combination of a plurality of escapement-operating members, an actuating roll therefor, and means to select and engage the said members with the actuating roll, together with independent means to hold a selected member temporarily out of engagement with the actuating roll to establish a predetermined and definite interval between the actuation of the successively selected members.

7. In a keyboard mechanism, the combination of a plurality of escapement-operating members, an actuating roll therefor, and means to select and engage the said members with the actuating roll, together with a grooved roll adapted to hold a selected member temporarily out of engagement with the actuating roll.

8. In a keyboard mechanism, the combination of the escapement-operating members A, actuating roll E, and springs C^1 , with the grooved roll B, substantially as described.

In testimony whereof I hereunto set my hand this twenty-first day of June, 1910, in the presence of two attesting witnesses.

JOHN R. ROGERS.

Witnesses:

DAVID S. KENNEDY,
LUCY E. SMITH.