

(No Model.)

2 Sheets—Sheet 1.

J. H. CURRIER & E. I. BLOUNT.

TYPE WRITING MACHINE.

No. 396,686.

Patented Jan. 22, 1889.

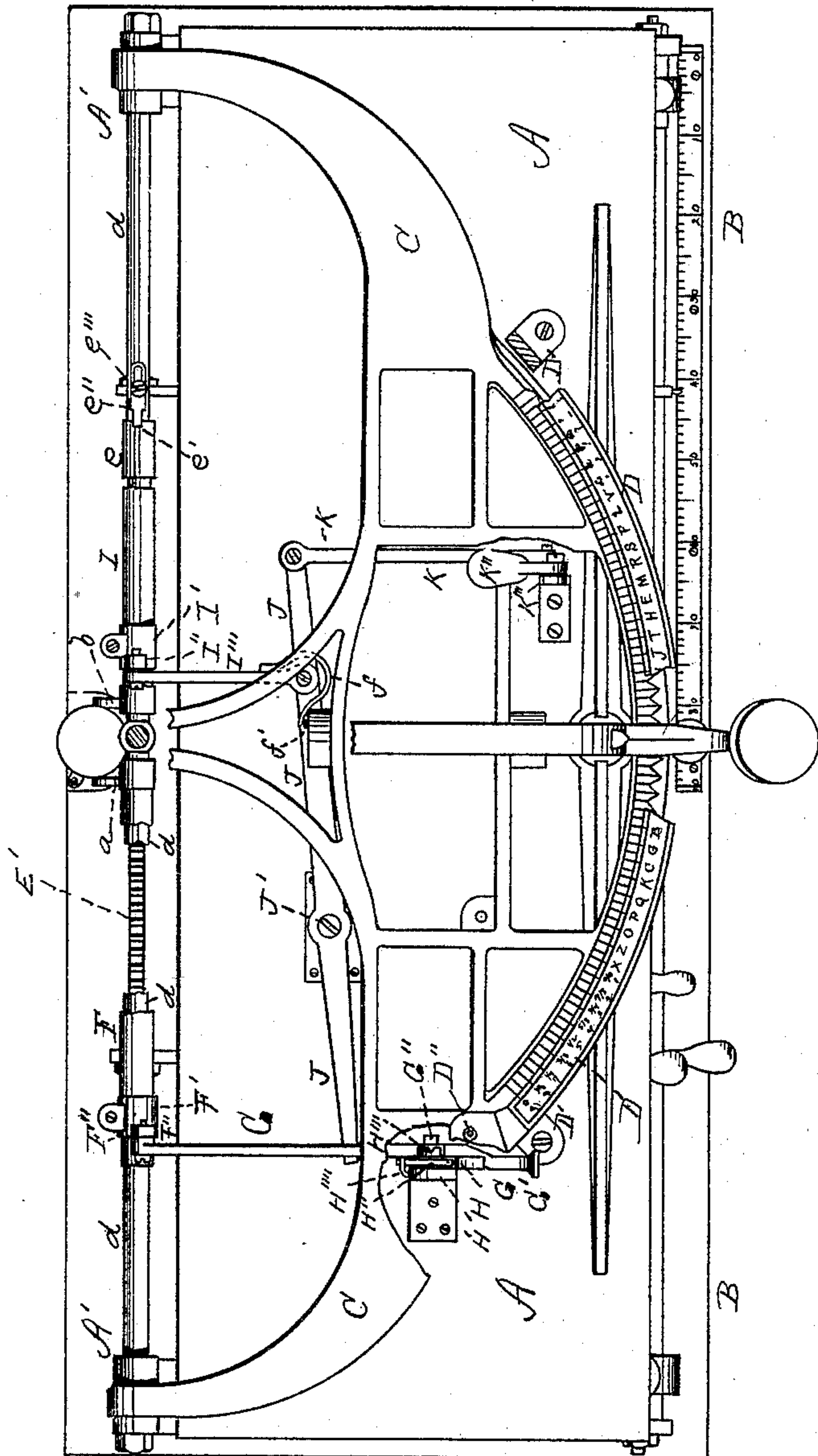


FIG. 1.

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John Thomas.

INVENTORS.

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By their Atty.

Henry W. Williams

(No Model.)

2 Sheets—Sheet 2.

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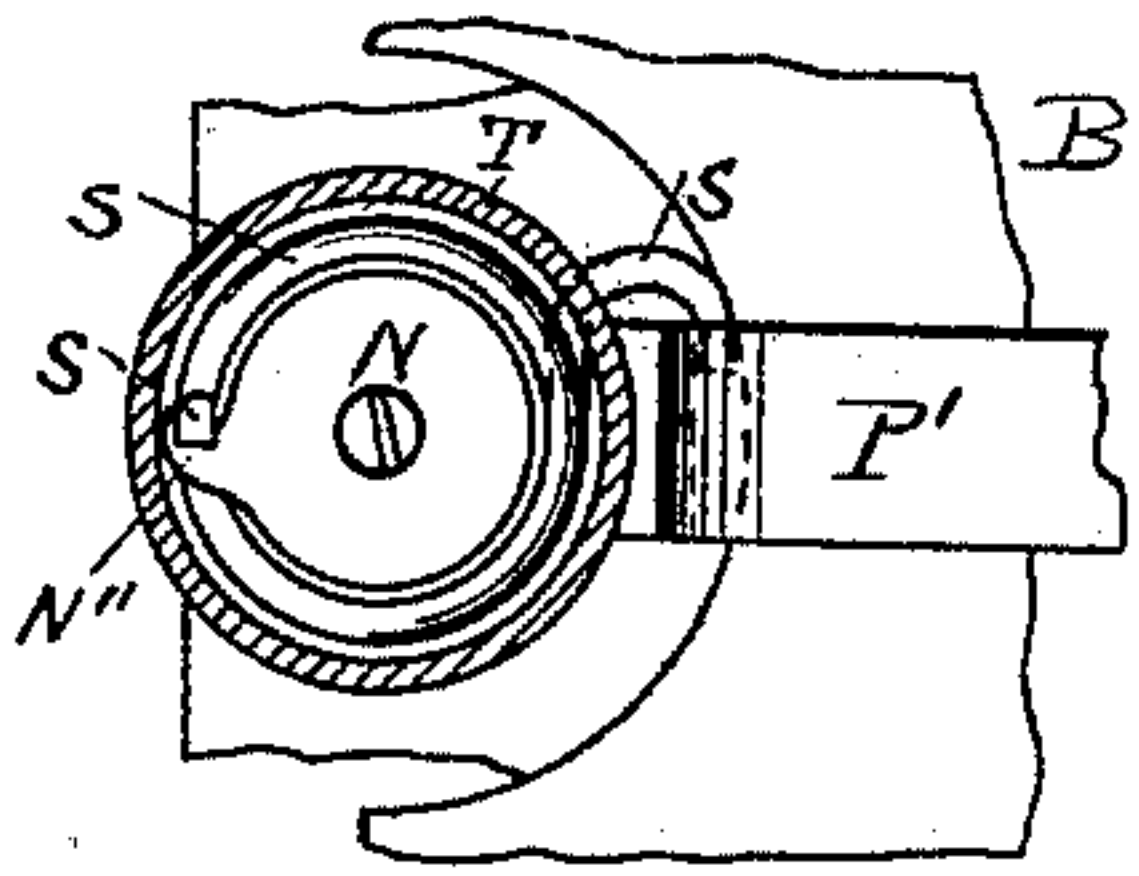
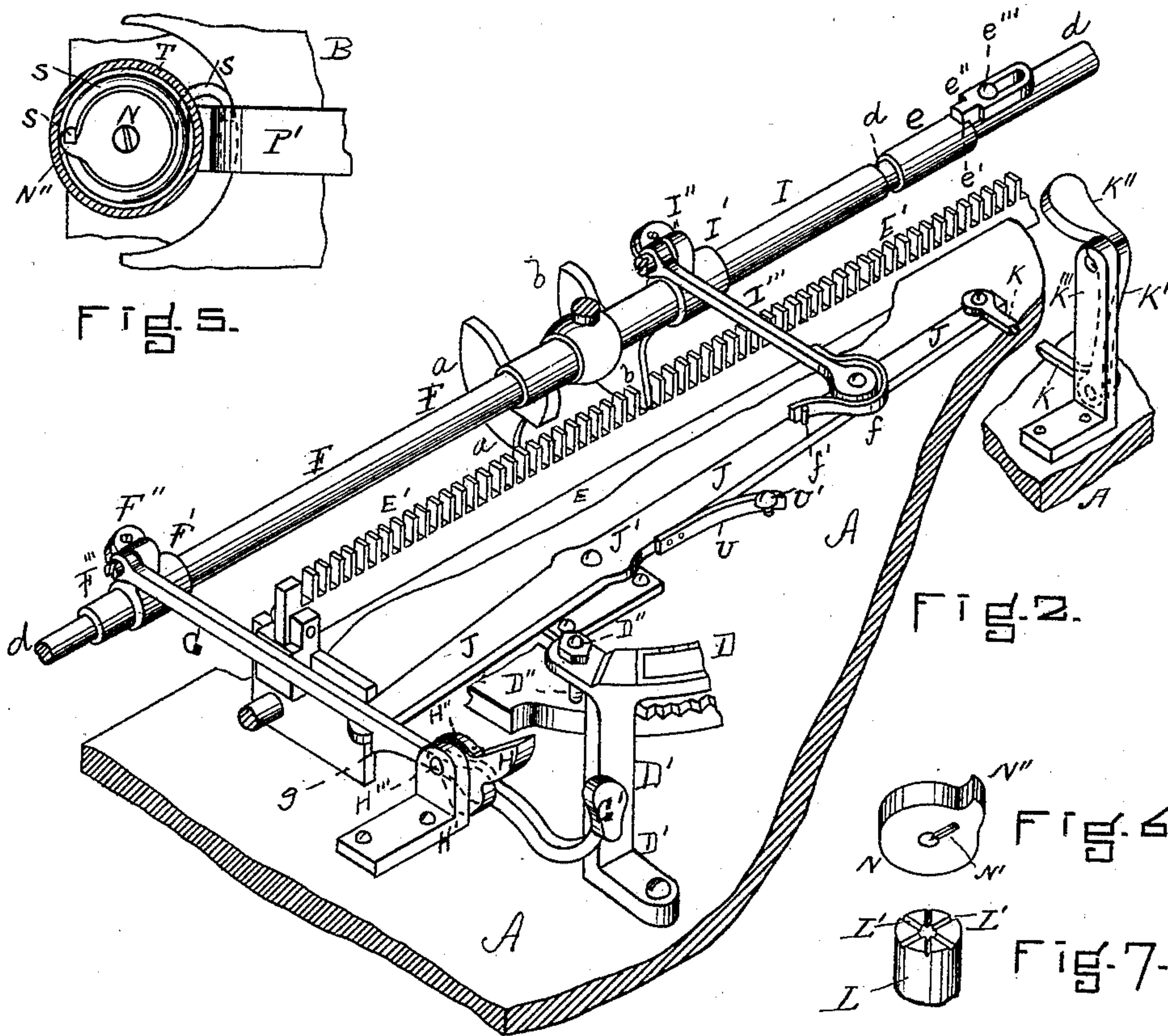


Fig. 5.



FI 2.

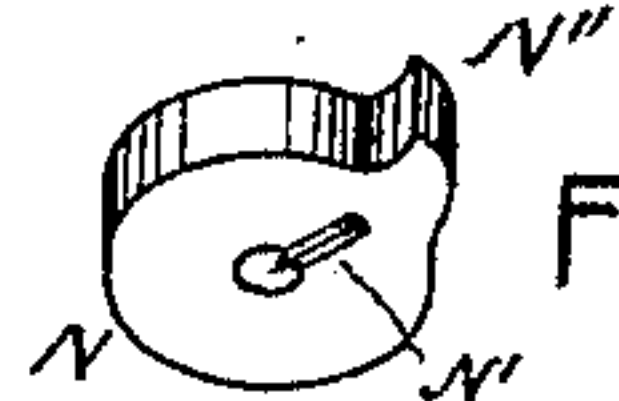


Fig. 6.

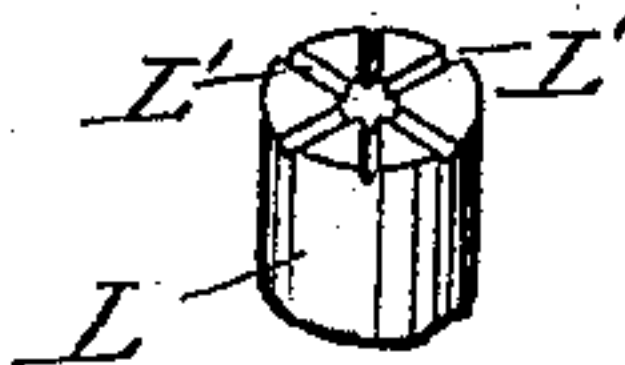


Fig. 7.

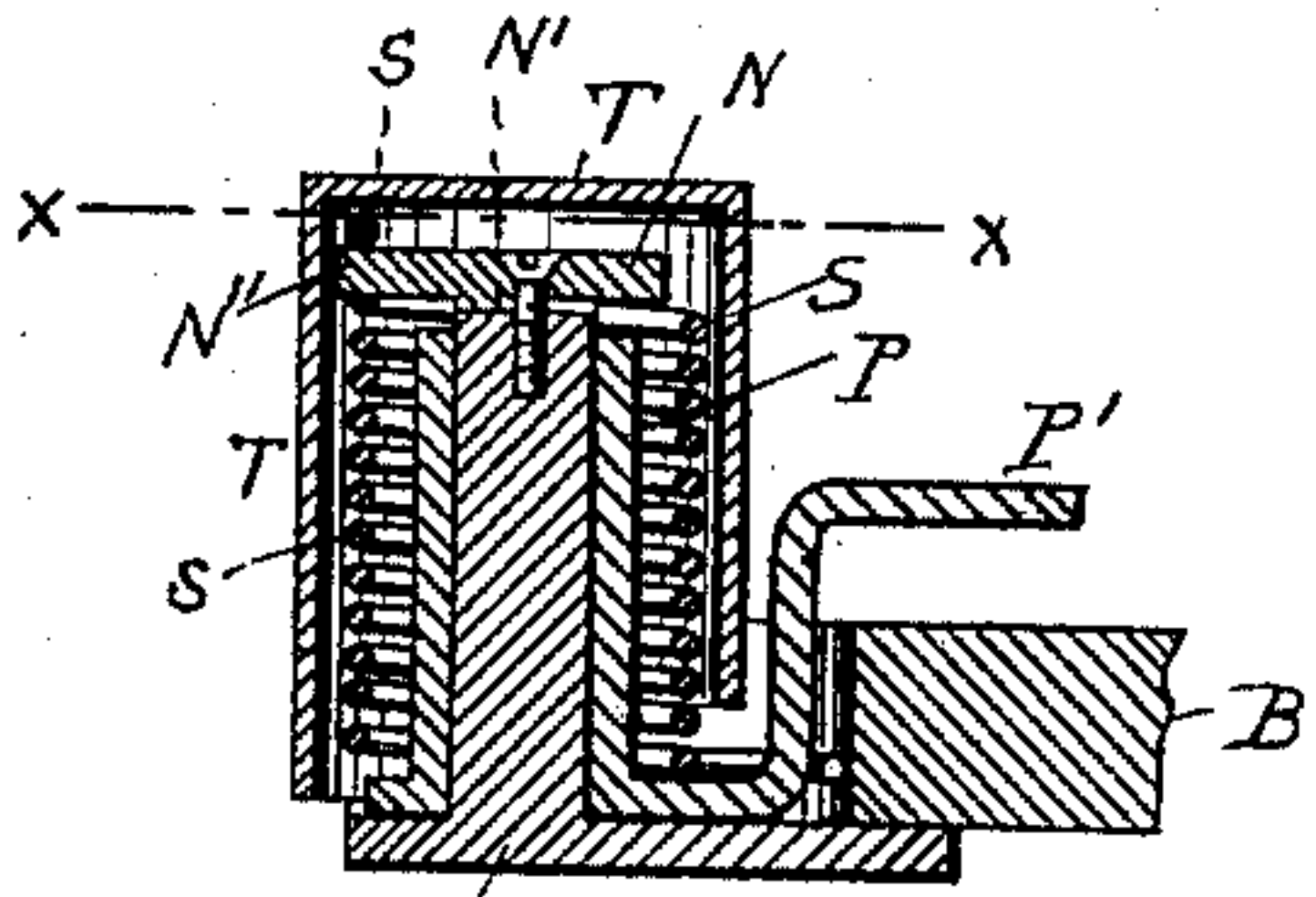


Fig. 4.

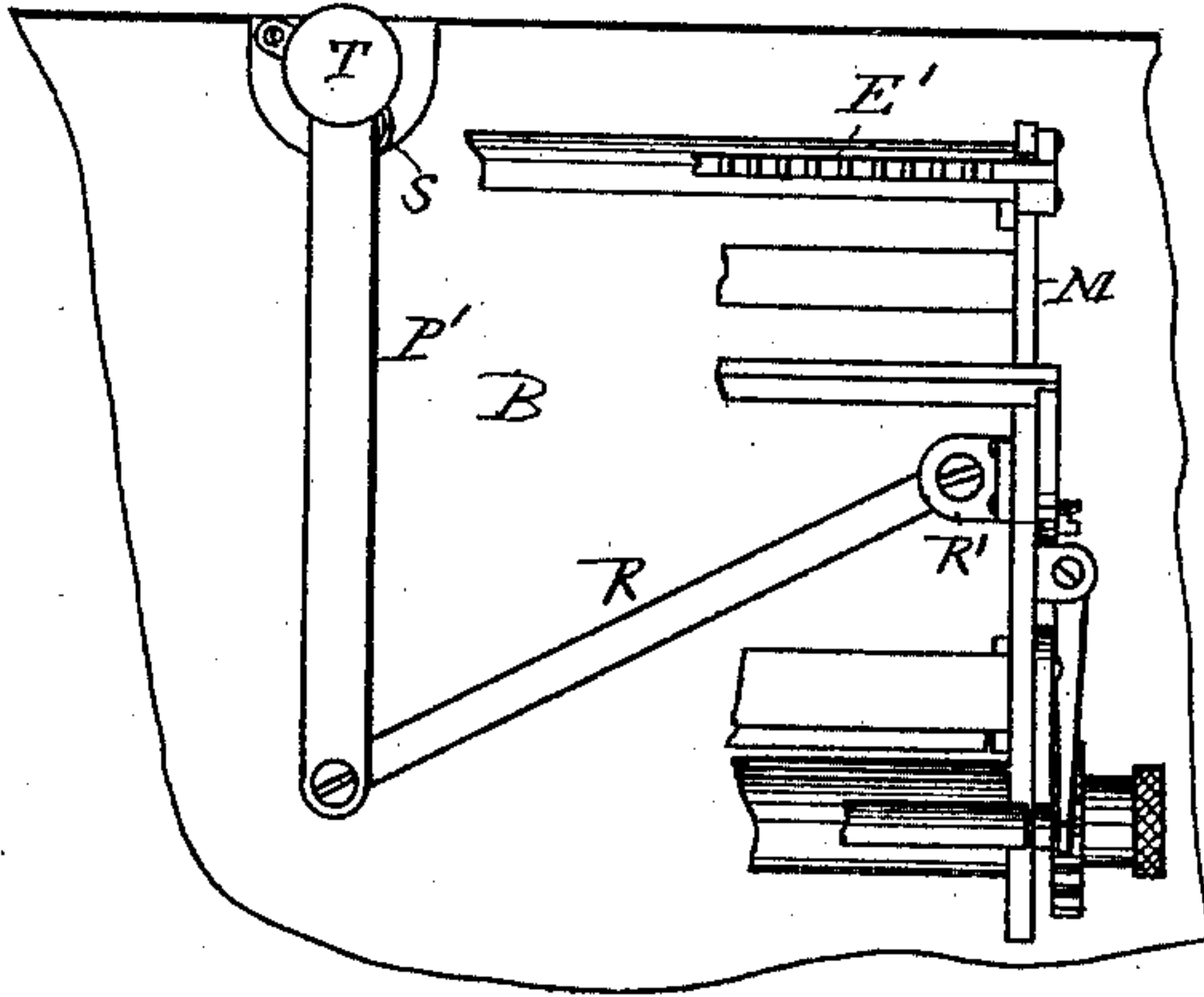


Fig. 3.

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UNITED STATES PATENT OFFICE.

JAMES H. CURRIER AND EUGENE I. BLOUNT, OF SOMERVILLE, ASSIGNORS TO
THE BOSTON TYPE WRITER COMPANY, OF BOSTON, MASSACHUSETTS.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 396,686, dated January 22, 1889.

Application filed December 5, 1887. Serial No. 256,967. (No model.) Patented in England June 24, 1887, No. 9,018.

To all whom it may concern:

Be it known that we, JAMES H. CURRIER and EUGENE I. BLOUNT, both of Somerville, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention is an improvement on the type-writing machine described in Letters Patent of the United States granted May 18, 1886, and numbered 342,302, and on the type-writing machine described in the application filed by ourselves and others February 26, 1887, Serial No. 228,934, to both of which reference is made.

The general operation of the machine is similar to that of the machine described in said Letters Patent and said application, the improvements being matters more or less of detail described below, and pointed out in the claims at the end of this specification.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a plan view of the improved type-writing machine, certain portions being represented as broken out the better to exhibit the invention. Fig. 2 is an enlarged perspective view showing the feed mechanism in detail. Fig. 3 is a plan detail showing the connection which actuates the carriage. Fig. 4 is a vertical section showing the actuating-spring and its immediate connections. Fig. 5 is a horizontal section on line *x*, Fig. 4. Figs. 6 and 7 are enlarged details of certain parts immediately connected with the actuating-spring shown in Fig. 4 and below described.

A is the table or cover, hinged at A' to the base B, and C is the hinged frame, constructed substantially as usual. The index-plate D, however, is in this improvement not a part of the frame, but is supported by posts D' D', secured to the table or cover, (see Figs. 1 and 2,) so that said index-plate is stationary. Thus the confusion and blurring of the letters which appeared in the movable index-plate are avoided. Screws D'' extend down from the index-plate and limit the upward movement of the frame C.

The feed-rack E' is secured to the carriage E near its rear edge, as shown, and is engaged by the semicircular plates or pawls *a b*, which, by means of their shape, will remain in engagement when the cover A is lifted. The pawl *a* is rigidly secured to the tube or sleeve F, loose on the rod *d*, (on which the cover A and frame C turn,) and said sleeve is provided with the hub F', provided with the projection F'', to which is pivotally secured the horizontal rod G, provided with the thumb-piece G'.

The hub F' and hence the sleeve F are prevented from sliding on the rod *d* to the left by means of the collar F''', which is rigidly secured by a set-screw or other well-known mechanical means to said rod *d*.

The rod G is pivotally attached at G'' to the lower arm of the elbow-lever H, pivoted at H''' to the standard H', secured to the upper side of the cover A. The upper arm of this elbow-lever is held against the under side of the frame C by means of the spring H'', secured by a rivet to said elbow-lever, and having its free end held in the hook H''', projecting from said standard H'.

The pawl *b* is rigidly secured to the tube or sleeve I, loose on the rod *d*, and said sleeve is provided with a hub, I', provided with the projection I'', to which is pivotally secured the lever I''', whose opposite end is pivoted to the horizontal lever J.

e is a supplemental sleeve loose upon the rod *d* and provided with one or more notches, *e'*, of shape to fit over the slotted adjustable stop *e''*, secured to the rod *d* by a screw, *e'''*. By means of the stop and the notched sleeve a space is left between the sleeve *e* and the sleeve I equal to the distance desired between the letters. This space can be varied by having notches *e'* of various depths. A spring, *f*, secured to the rod I'', and with its free end caught by the pin *f''* on the lever J, tends to force the sleeve I toward the sleeve *e*.

The lever J is pivoted at J' to the cover A, and one end engages the rod G by means of the notch *g* on the under side of the latter, while the other end is pivotally secured to the horizontal rod K, pivotally secured to the

lower end of the elbow-lever K' , pivoted to the standard K''' , one of the elbows of said elbow-lever forming the thumb-piece K'' .

L is a post secured to the rear edge of the base B near its center. The upper end of this post is provided with radial grooves L' , (see Fig. 7,) and a disk, N , (see Figs. 4, 5, and 6,) provided with the projection N' on its under side, is screwed to the top of said post, said projection lying in one of the radial grooves L' . The disk is further provided with the hook N'' .

P is a sleeve upon the post L , and integral with said sleeve is the lever P' , which extends forward horizontally between the base B and the carriage M , constructed substantially as usual. The free end of the lever P' (see Fig. 3) is pivotally secured to the link R , which is also pivotally secured at its opposite end, at R' , to the carriage M . A spring, S , is coiled around the sleeve P , one end being secured to the hook N'' on the disk N and the other end being secured to the lever P . The tension of this spring is regulated by the projection N' on the under side of the disk N being moved into one or another of the radial grooves L' on the top of the post L . The whole—that is, the post, disk, sleeve, and spring—is covered and protected by a cap, T . The spring is so coiled that its tendency is to move the carriage toward the left as the operator faces the machine.

The operation is as follows: When the frame C is in its normal position—that is, raised—the pawl a is out of engagement and the pawl b in engagement with the feed-rack E' , as shown in Fig. 2. When the frame is pressed down by the operating-lever for the purpose of printing, said frame moves down the upper portion of the elbow-lever H , thus moving rearward the rod G and imparting sufficient rotation to the sleeve F to bring the pawl a into engagement with the feed-rack. At the same time the lever J is moved on its pivot J' by the notch g on the rod G , thus drawing its opposite end forward, and, by means of the rod I''' , imparting sufficient rotation to the sleeve I to bring the pawl b out of engagement with the feed-rack. As soon as this pawl is released, the spring f , by means of the rod I''' , forces the sleeve I along the rod D until it strikes the supplemental sleeve e . When the frame C is released and allowed to rise, the spring H'' retracts the rod G and draws the pawl a out of engagement, and the coiled spring S , by means of the levers P and R , moves the carriage M to the left, and with it the feed-rack E' one tooth, and the pawl b , which is then in engagement with it, as far as the sleeve I will go. This distance is of course the extent of the longitudinal play of said sleeve, which is regulated by the slotted stop e'' and the depth of the notch e' . Pressure upon the handle G' directly operates the rod G and allows the feed-rack to move forward

one tooth in order to provide a space between two words. Pressure upon the handle K'' draws forward the rod K , and, by means of the levers J and I''' and sleeve I , removes the pawl b from engagement with the feed-rack independently of the pawl a , which is normally out of engagement, and allows the carriage to be moved to the right for a new line.

The lever J is held with its left end against the notch g and its right end normally pressing the lever I''' , so as to hold the pawl b in engagement by means of the spring U , secured to said lever, and with its rear end pressing against the pin U' in the cover A . (See Fig. 2.)

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination, with the carriage provided with the feed-rack E' and the hinged frame C , of the disk-shaped pawls a and b , adapted to engage said feed-rack by turning on an axle or shaft common to said pawls and said frame, said pawls, by means of their disk shape, remaining in engagement with the feed-rack when the hinged frame is lifted and the pawls partially rotated, substantially as described.

2. In a type-writing machine, the combination of the carriage provided with the feed-rack E' , the rod or axle d , sleeves F I , provided, respectively, with the pawls a b , adapted to be rotated simultaneously and engage the feed-rack alternately, the supplemental sleeve e , placed on said rod at a suitable distance to allow of a slight longitudinal play in the sleeve I , and a suitable stop, substantially as and for the purpose described.

3. In a type-writing machine, the combination of the carriage provided with the feed-rack E' , the rod or axle d , sleeves F I , provided, respectively, with the pawls a b , adapted to be rotated simultaneously and engage the feed-rack alternately, the supplemental sleeve e , placed on the said rod at a suitable distance to allow of a slight longitudinal play in the sleeve I , said supplemental sleeve being provided with a notch, e' , and the adjustable stop e'' , substantially as and for the purpose set forth.

4. In a type-writing machine, the combination of the rod d , sleeve F , pawl a , hub F' , rod G , elbow-lever H , standard H' , spring H'' , and pivoted frame C , substantially as and for the purpose described.

5. In a type-writing machine, the combination of the rod d , sleeve I , hub I' , pawl b , lever I''' , spring f , lever J , rod K , lever K' K'' , and standard K''' , substantially as and for the purpose set forth.

6. In a type-writing machine, the combination of the rod d , sleeves F I , hubs F' I' , pawls a b , lever I''' , spring f , lever J , spring U , rod G , provided with the catch g , elbow-

lever H, spring H'', standard H', and type-frame C, substantially as and for the purpose described.

5 7. In a type-writing machine, the combination of the base B, post L, provided with the radial grooves L', disk N, provided with the hook N'' and projection N', sleeve P, provided with the lever P', spring S, having its

opposite ends secured to said lever and said disk, link R, and carriage M, substantially as 10 and for the purpose set forth.

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Witnesses:

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