

(No Model.)

3 Sheets—Sheet 1.

D. C. SHELLEY.

METAL PUNCHING, PRINTING, AND STAMPING MACHINE.

No. 582,319.

Patented May 11, 1897.

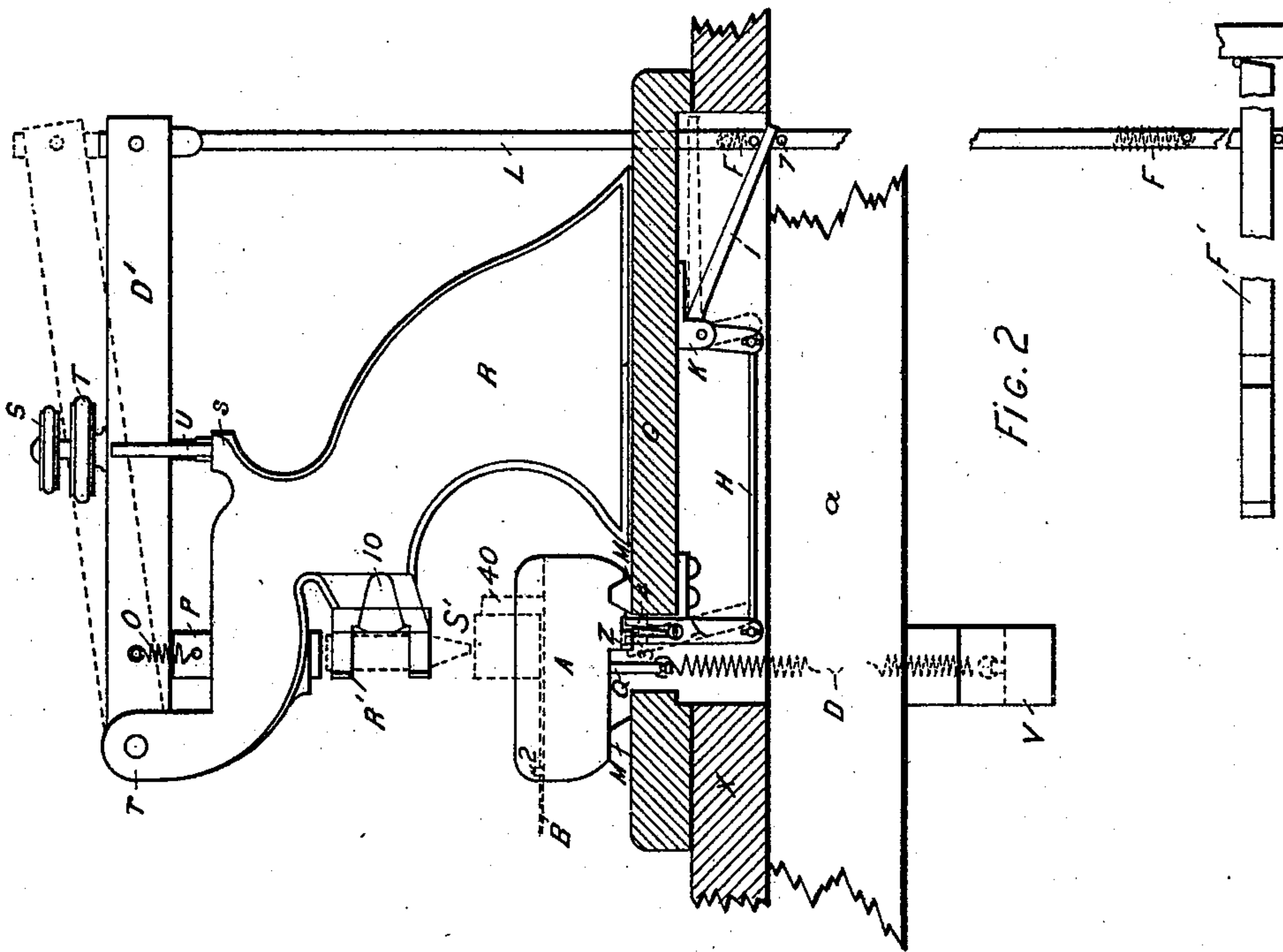
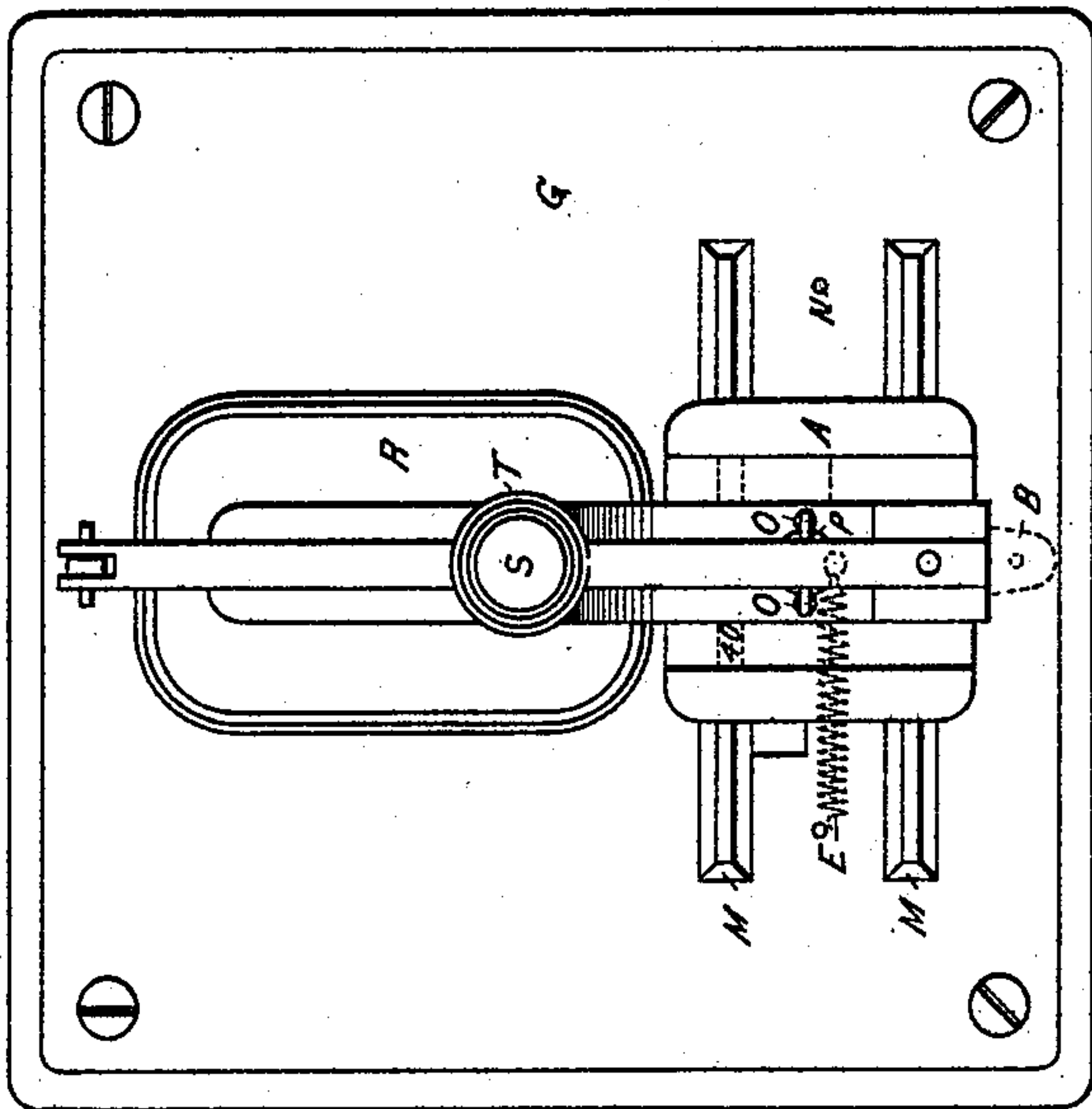


FIG. 1



WITNESSES:

L. D. Erion
A. Sjoberg

INVENTOR
Daniel C. Shelley
BY *W. H. S.*

ATTORNEY.

(No Model.)

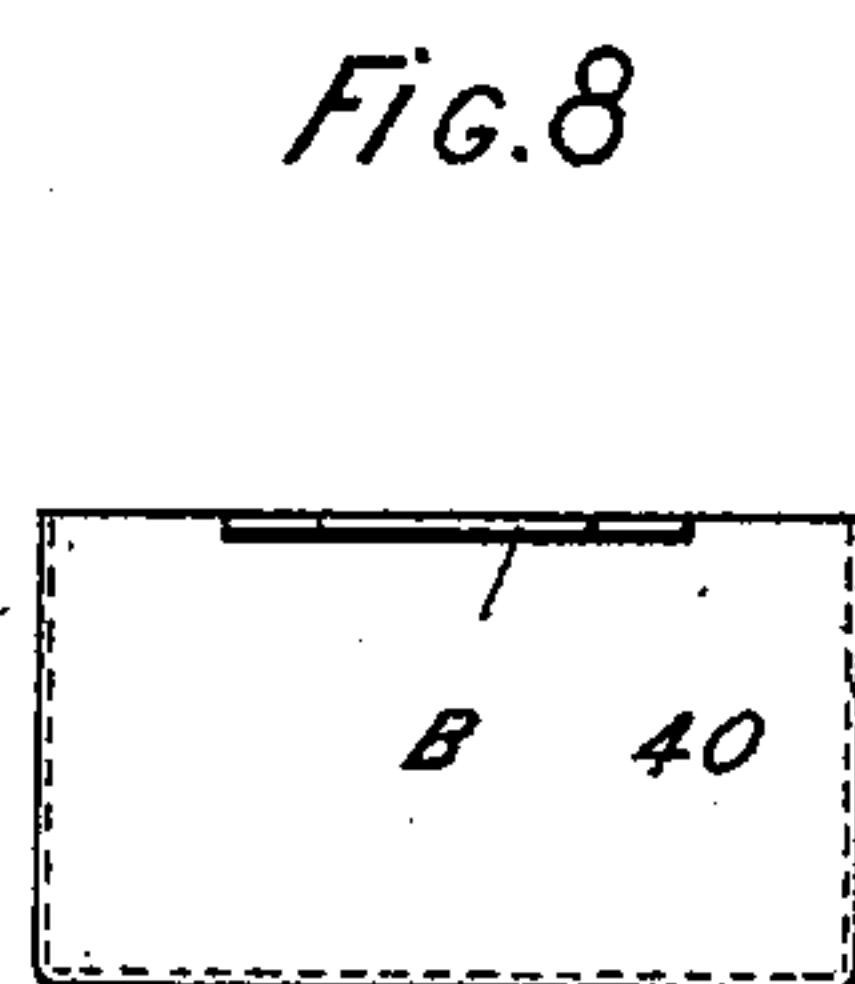
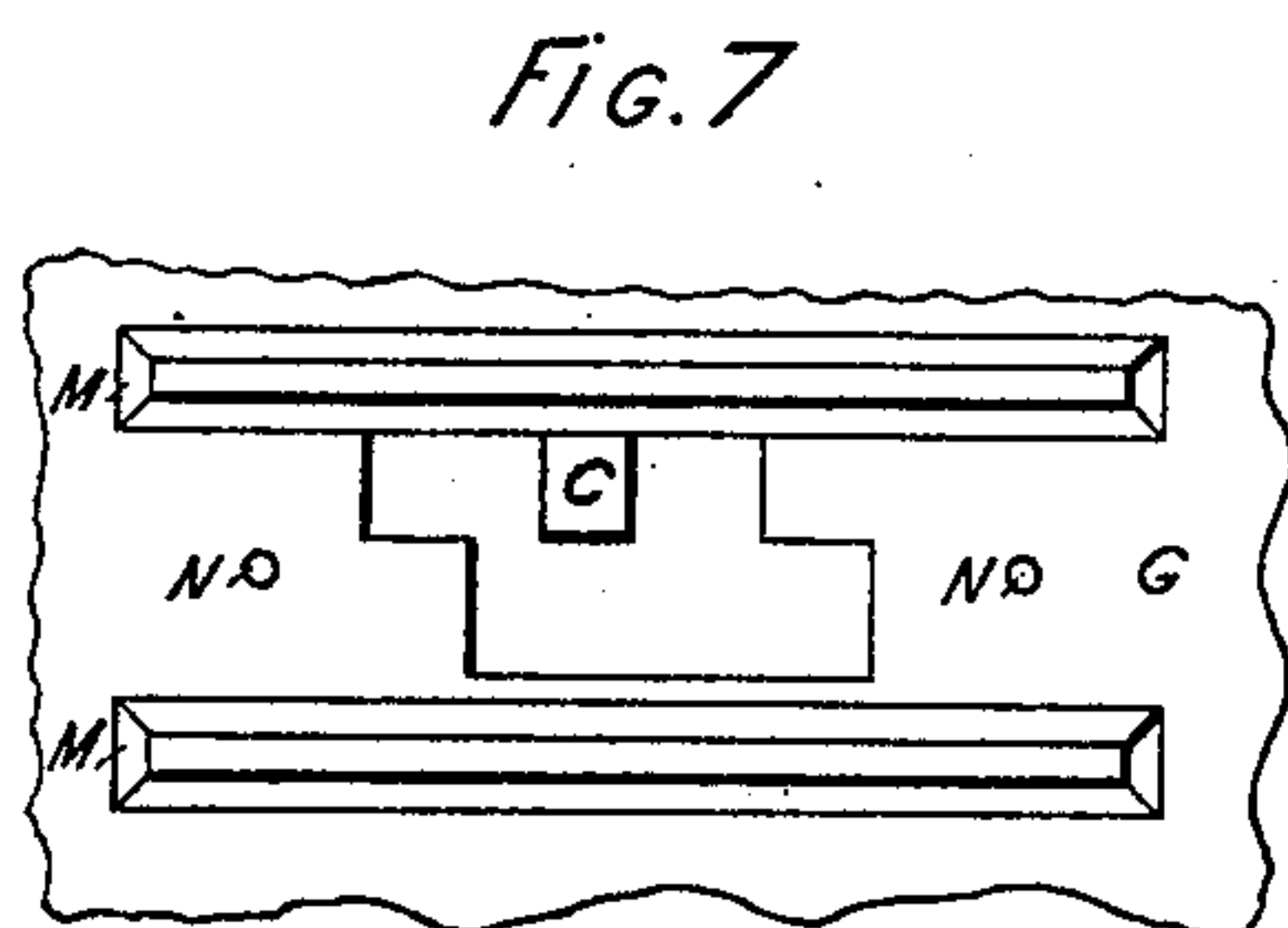
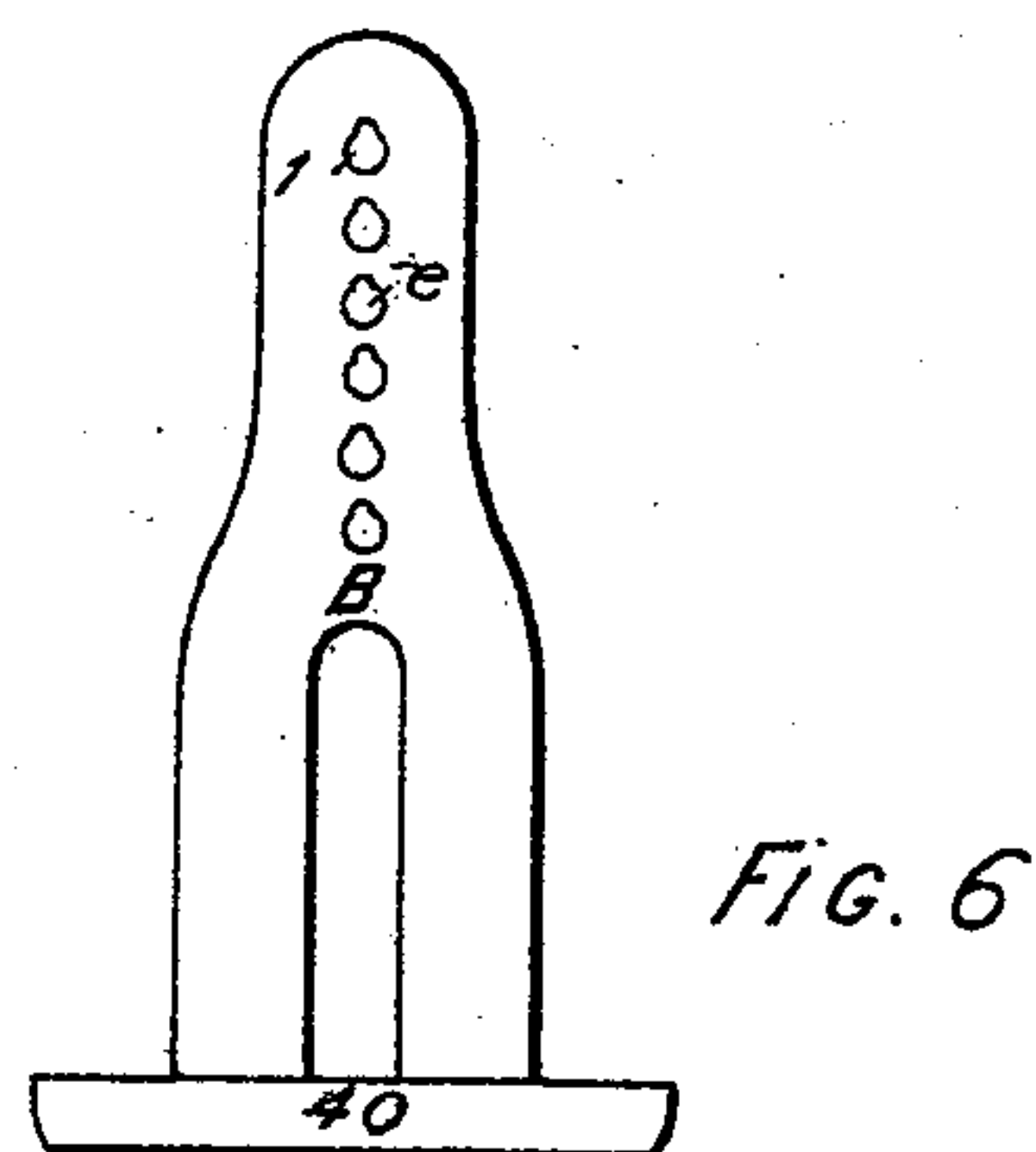
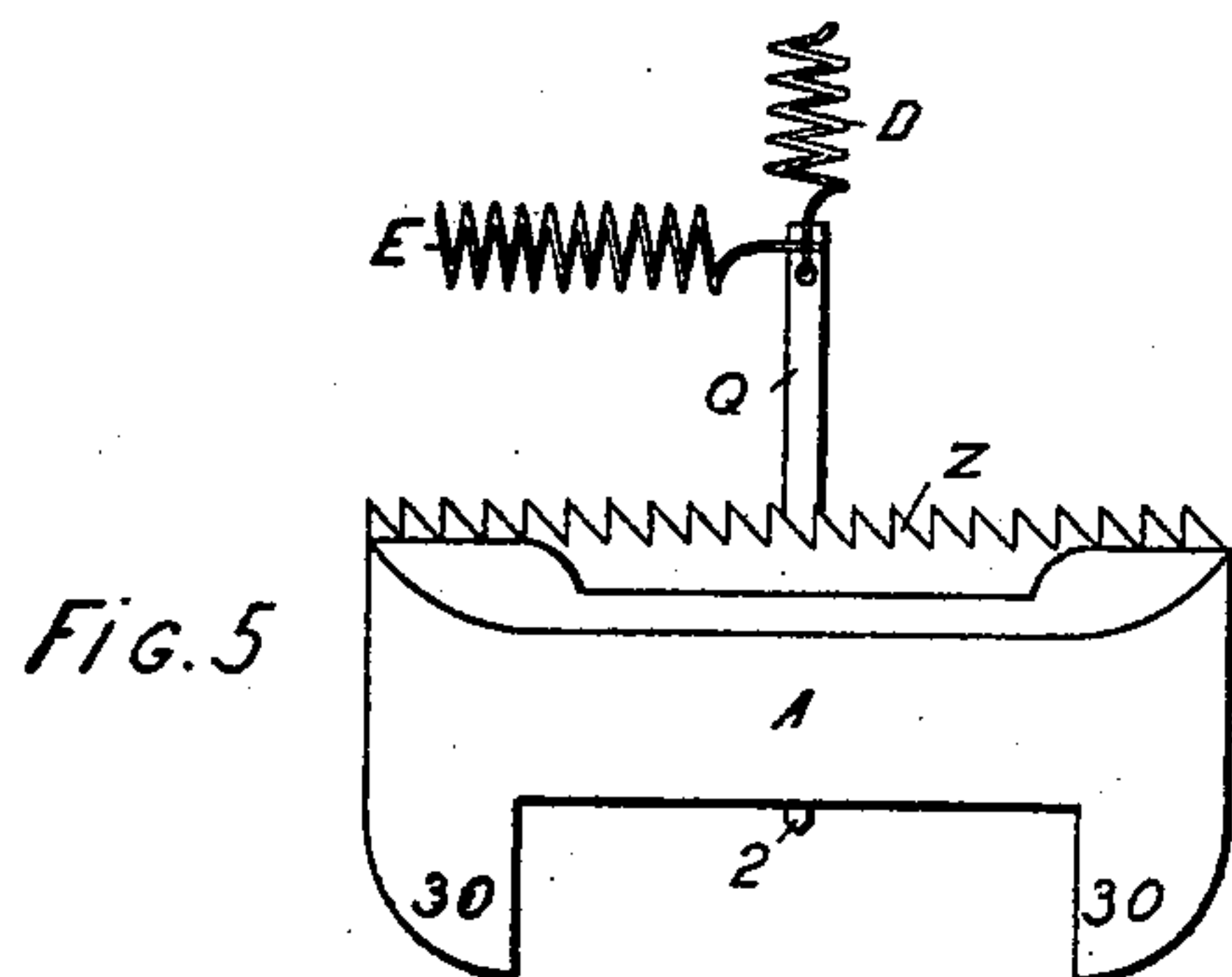
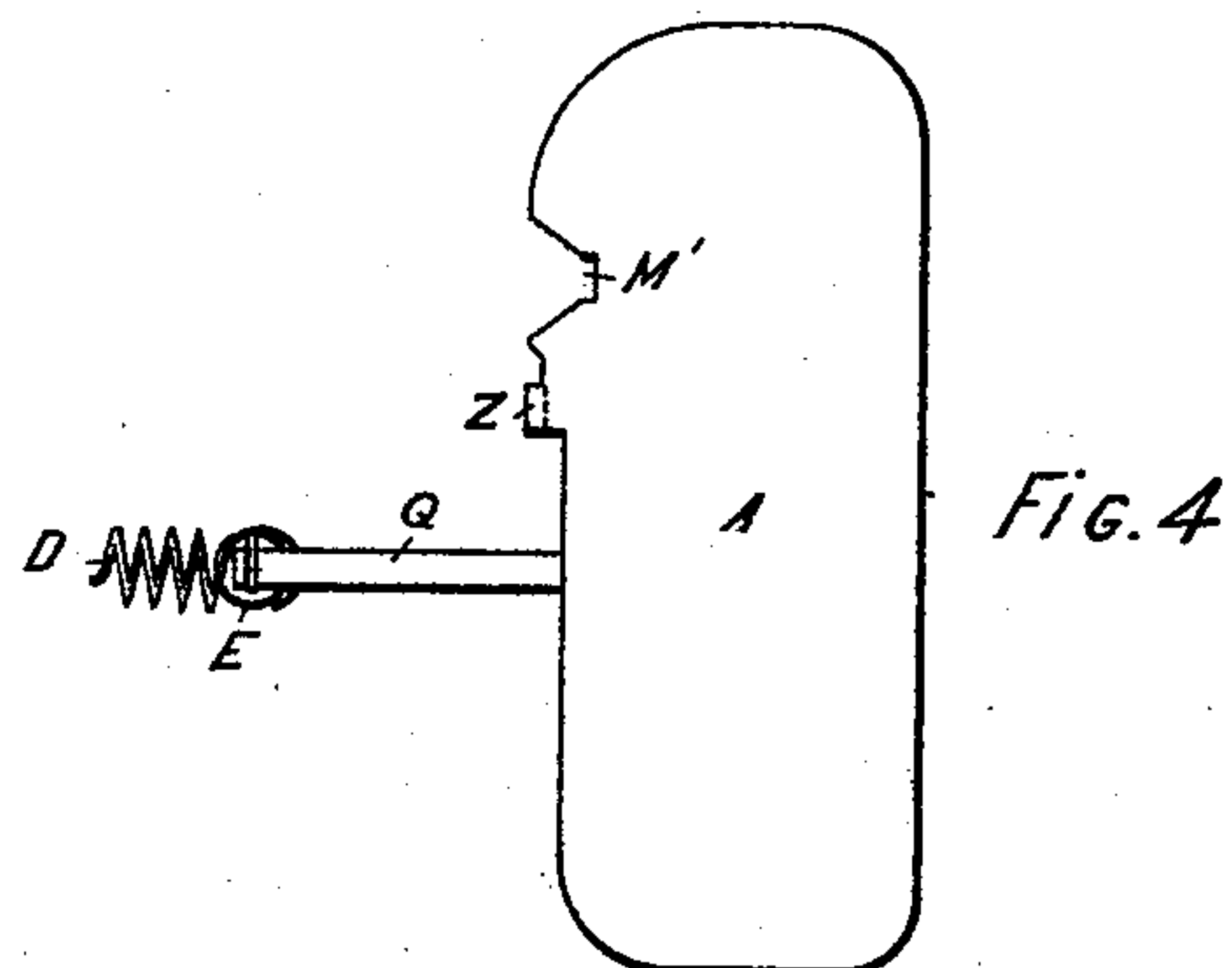
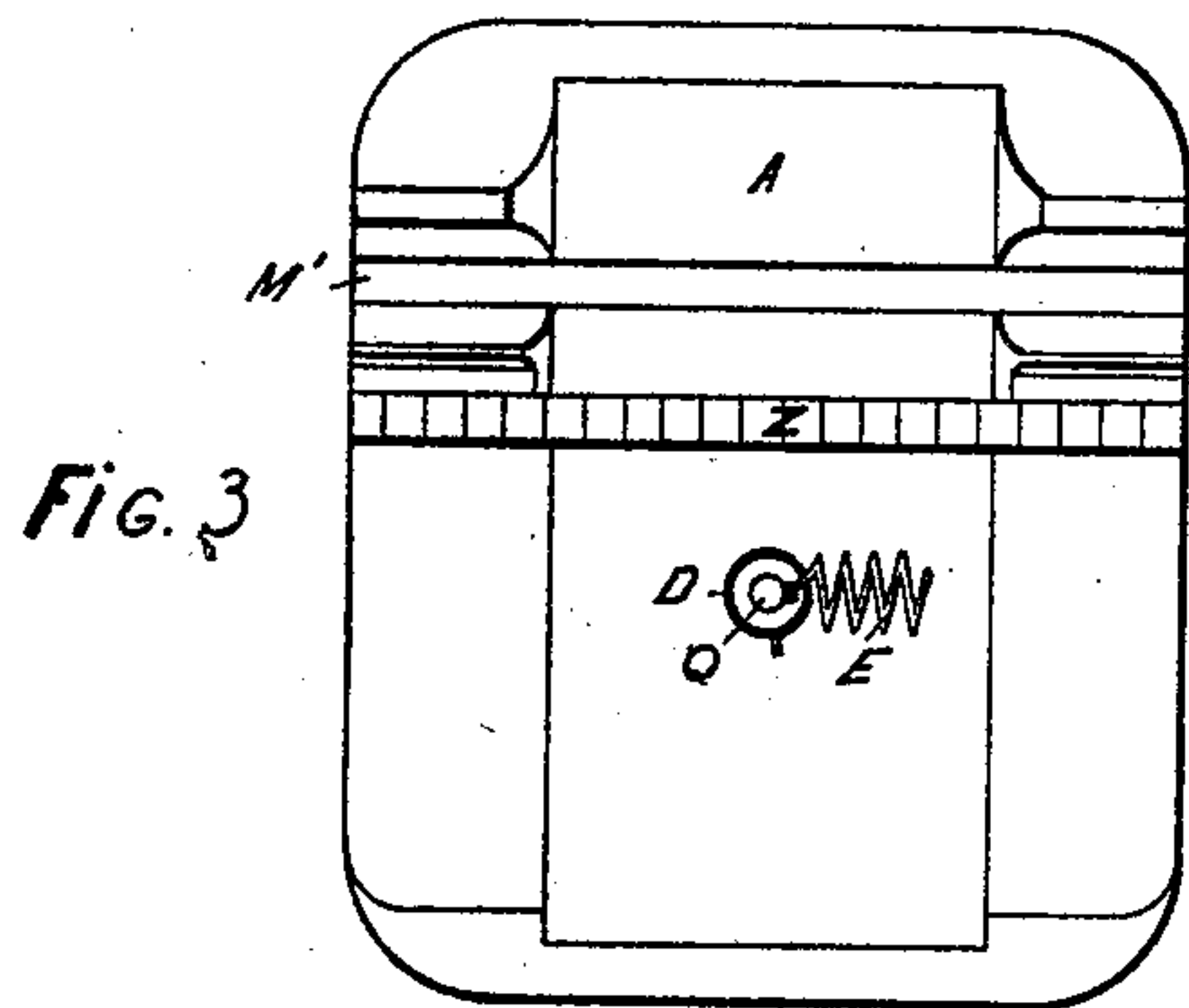
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WITNESSES:

L. D. Erion
A. Sjoberg

INVENTOR
Daniel C. Shelley
BY M. S. S.
ATTORNEY.

(No Model.)

3 Sheets—Sheet 3.

D. C. SHELLEY.
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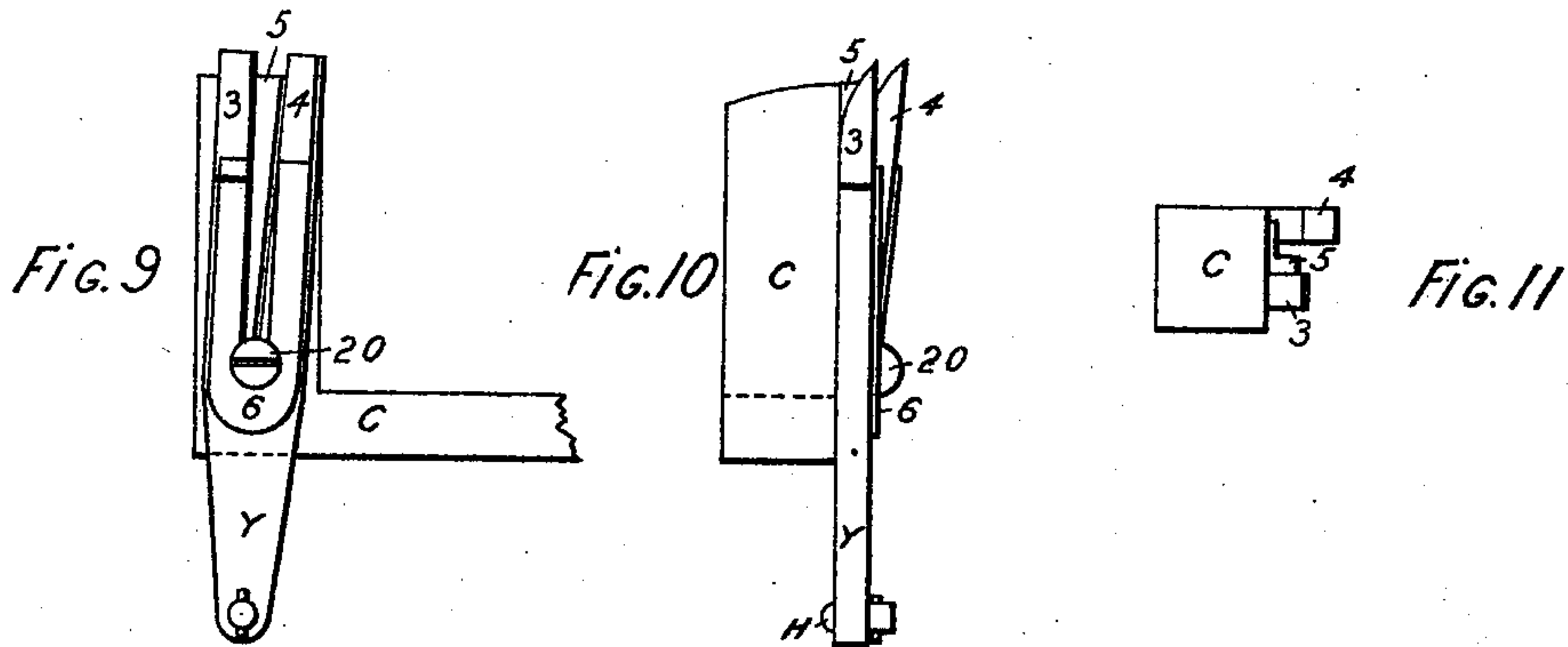
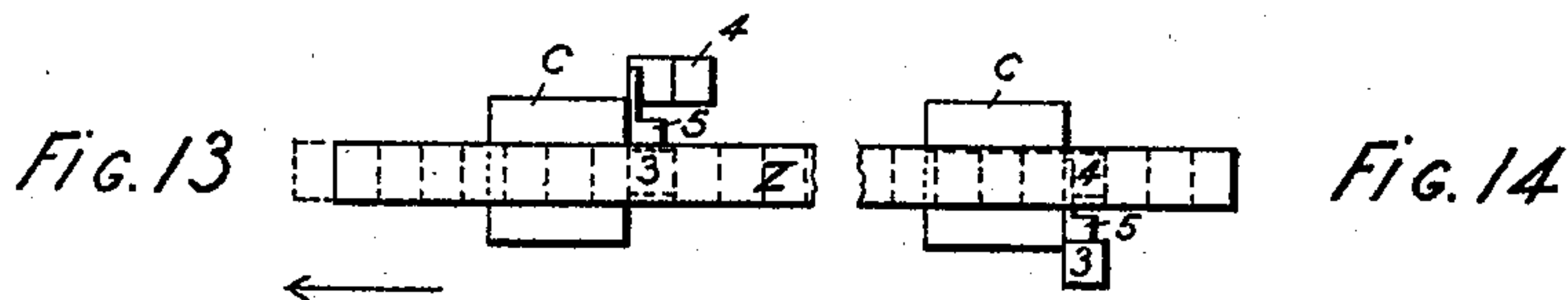
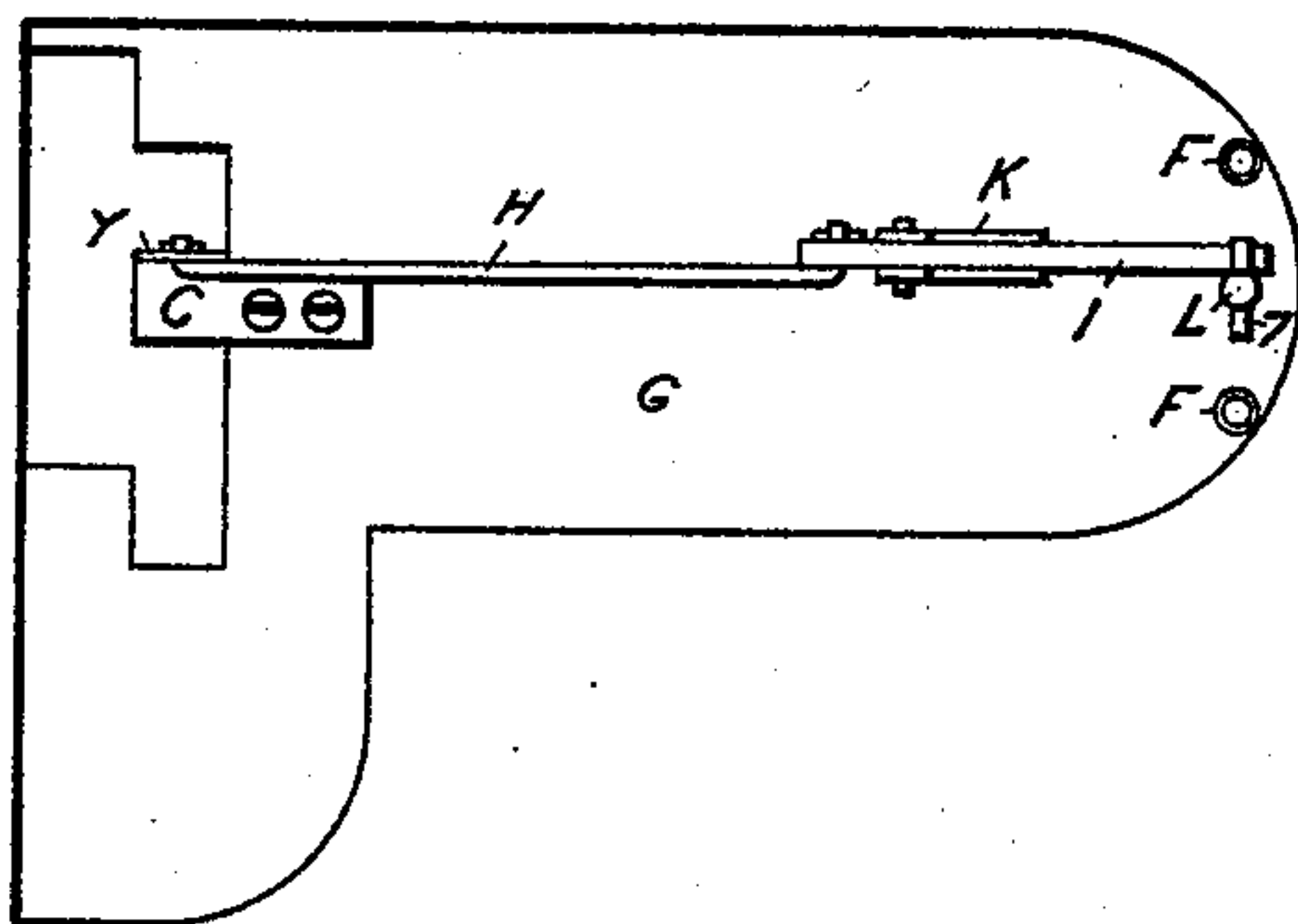


Fig. 12



WITNESSES:

L. D. Erion.
A. Sjoberg

INVENTOR

Daniel C. Shelley
BY W. W. Wells

ATTORNEY.

UNITED STATES PATENT OFFICE.

DANIEL C. SHELLEY, OF OMAHA, NEBRASKA.

METAL PUNCHING, PRINTING, AND STAMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 582,319, dated May 11, 1897.

Application filed June 30, 1894. Serial No. 516,242. (No model.)

To all whom it may concern:

Be it known that I, DANIEL C. SHELLEY, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain
5 useful Improvements in Metal Punching, Printing, and Stamping Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to
10 which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention has relation to a new and
15 novel metal stamping, printing, and punching machine.

The object of the invention is to provide a machine by means of which the operator may impress certain characters or words directly
20 upon the metallic sheet or block. By this means embossing-dies may be prepared having certain characters thereon which are more particularly adapted to be used in preparing mailing-lists, which can be stamped on wood,
25 metal, or any other suitable material.

The invention comprises, essentially, a die-head, suitably mounted within which a series of punching or stamping dies are removably held, and a sliding feed-table adapted to carry
30 the sheet or block forward as the same is being stamped or printed.

In the accompanying drawings, Figure 1 shows a top view of my invention, partly in section and with parts removed. Fig. 2 shows
35 a side elevation of my invention, partly in section and with parts removed. Fig. 3 shows a bottom view of the spring-actuated sliding bed. Fig. 4 is a side elevation thereof. Fig. 5 is an inverted end elevation. Fig. 6 shows
40 the line-adjuster. Fig. 7 is a top view of a portion of the base, illustrating the arrangement of the guide-rails. Fig. 8 is an end view of Fig. 6. Fig. 9 shows an end elevation of the spring-actuated rack-combs. Fig. 10 is a
45 side elevation thereof, and Fig. 11 a top view thereof. Fig. 12 is a bottom view illustrating the arrangement of the operating-lever. Fig. 13 shows a top view of the rack and the connected spring-actuated rack-pawls in one
50 position, while Fig. 14 shows the rack-pawls in their extreme opposite position.

X represents a suitable support which may

form part of a table or stand, giving support to my improved printing, punching, and stamping machine, which is provided below
55 with an ordinary supporting-rib *a*, as will be noticed in Fig. 2. Secured to the support X is an ordinary base G, preferably of metal, which is suitably secured to the support X and gives support to the head R, which is se-
60 curely fixed thereto. This head is provided above with an upwardly-extending ear *r*, having a central pin-opening and the rearwardly-extending ear *s*, as will be noticed in Fig. 2. At a suitable point this head is further pro-
65 vided with a vertical circular opening adapted to contain the plunger P. Below this opening I provide an outwardly-extending rectangular receiving-frame R', which practically forms three sides of a square. This frame is
70 further provided with a finger or thumb depression 10, as illustrated. This receiving-frame is positioned immediately below the plunger P. Movably working within the ear
75 *r* is a bar D', which is provided at the rear with a shackle-bar L, pivotally secured thereto. This bar D' is held in position by means
80 of two pins U, which are secured to the head R and prevent any lateral movement of the bar D'.

The bar D' is provided with a set-screw S, having an adjusting-nut T secured thereto. The set-screw S threads through the bar D' and projects below the lower edge of the same
85 and works upon the projection *s* of the head R, acting, as it were, in this capacity as an anvil, the downward movement of this bar D' being regulated by means of this screw, which further holds and supports the weight of the
90 bar D' when in its downward position. It will be noticed that the downward movement of this bar D' can so be nicely adjusted by means of this set-screw S and the adjusting-nut T, secured thereto.

The plunger P is loosely held within its
95 opening and is simply secured to the plunger-bar D' by means of two springs O O, as will be noticed in Fig. 1.

The shackle-bar L is provided with a spring F, which is secured at a suitable point to the
100 support or table X and continually exerts an upward tension on this rod. Below this rod L is secured to an ordinary treadle F'. Normally the bar D' is in a raised position, as

shown in dotted lines, and it is only when the operator depresses the treadle F' that the bar D' and connected plunger P are carried into their extreme downward position, as illustrated in Fig. 2. Secured to the support G, forming part of the head R, are two parallel rails M M, upon which is held a spring-actuated sliding bed A, both of said rails being adapted to support said sliding bed A. This bed A is provided with a rail depression M', adapted to contain one of the rails M and so normally hold and guide this bed in a true line and position. Below this the sliding bed is further provided with an integral comb or rack Z, secured to and forming part of the bed. This bed is further provided with a depending pin Q, as shown in Figs. 3, 4, and 5, to which are secured two springs, one, (marked D,) which exerts a downward extension, being secured to a rib V, forming part of the table or support and which prevents this sliding bed from moving upward, and a secondary spring E, which is also suitably secured to the support or table and which exerts a pressure in one line and parallel with the guide-rails M, as is shown in Fig. 1, so that one spring exerts a downward pressure and the other a pressure at right angles thereto. Secured to the bed G is an ordinary block C, which is provided with a spring-arm Y, having two rack-pawls 3 and 4, which are connected to the pivoted arm Y by means of a U-shaped spring 6. Positioned between these pawls 3 and 4 is an L-shaped stop-block 5, (see Fig. 11,) which controls the movement of the pawl 4 in one of its extreme positions. The pawl 4 is secured to the spring 6, but the spring 6 is curved so that this pawl 4 projects outward a distance equal to one of the rack-teeth Z, as is more clearly shown in Fig. 10. The arm Y is pivoted by means of a screw 20 and is connected by means of the rod H to a lever-arm I, secured below the bed-plate G by means of the ear K. Secured to the vertical rod L are two pins 7, between which the longest arm of the lever I is movably held, as will be noticed in Fig. 2. Secured to the rod L, by means of which the plunger-head P is operated, is a spring F, the upper end of which is connected to the table X, which has a tendency to continuously carry this rod L in an upward direction except when the rod is actuated by means of the treadle F', as shown. The operation of this feeding mechanism would be as follows: The pawls 3 and 4, it will be remembered, are secured to the pivoted arm Y and are adapted to work within the rack or comb Z. In their operation the fixed pawl 3 is made to first encounter the comb, the comb being held by this fixed pawl as long as said pawl moves forward in an arc. In its forward movement the pawl 4 would next engage one of the teeth while the pawl 3 was still in position, so that for an instant both of the pawls 3 and 4 would be within the rack. However, as soon as the pawl 3 was carried beyond the rack the pawl 4 would

have to bear the strain of the spring-actuated comb which was bearing directly against said spring-pawl, so that said spring-pawl 4 would be carried forward by the spring-actuated table A the width of one type, and as the treadle would be actuated to feed down the stamp or die the arm would be actuated and carried back into its first position. In this movement the spring-pawl 4 would of course first escape out of the rack, but before being permitted to escape the pawl 3 would have entered the rack, so that said rack could not feed forward until the movement of the arm Y had been checked, when the table, through its connected rack or comb, would be held in its fixed position again, but with the pawl 4 advanced one tooth by means of the spring 6, in which position the pawls are as illustrated in Fig. 10.

It will be noticed that the bed A is held upon the track M by means of a downwardly-extending spring D, as shown in Figs. 4 and 5, at the same time being continually drawn in a lateral direction, as shown in Fig. 2, by means of the spring E. The block to be punched, or upon which the printing or stamping is to be done, is of a suitable width and is held between the jaws 30, as shown in Fig. 5, of the block A, being positioned transversely to the path of movement of the block A. Now should the block S', as shown in Fig. 2, be stamped or punched, for instance, this block would be held within the movable slide A and against the forward lip 40 of the line-adjuster B, as shown in Fig. 6. The type used would comprise a full set of steel stamps or dies having bodies and character-faces of a similar width, which would all be adapted to be snugly held within the retaining device R', as shown in Fig. 2. These dies can only be used one at a time. These dies would be nothing more than the ordinary steel character-chisel, cut reversed or unreversed, used by the mechanics familiar with this art.

In beginning the operation of printing or punching upon the block S', for instance, the carriage A would be carried to its extreme position upon the right side, when the first steel type to be used would be inserted within the holder R', when the treadle F' would be depressed, forcing the plunger P upon the top of the chisel and forcing the same down to form an impression upon the block S'. As soon as this rod L has been carried downward it forces down the lever D', which lever actuates the lever I to actuate the pivoted arm Y. This radial movement of the arm Y would have carried the fixed pawl 3 into the rack Z, as shown in Fig. 13. As soon as the treadle is released the pawl 3 is carried out of the rack Z, so that the pawl 4, which is normally held in a position one tooth in advance of the pawl 3, rides into the tooth preceding. As the action of the spring E, however, would have a tendency to carry the rack Z in the direction of the arrow, as marked in Fig. 13, the pawl would be carried forward into the same plane with the tooth 3, its movement, however, be-

ing checked by means of the stop 5. In this position both of the teeth would lie in the same plane, as shown in Fig. 14. As soon as the next character were inserted within the holder R', from which the previous character had been removed, the lever would again be depressed, the pawl 3 would be carried into its first position, permitting the pawl 4 to fly outward, but not having allowed any movement of the rack Z, as the pawl 3 enters the rack before the pawl 4 leaves the same. By this means an intermittent movement is imparted to the slide A by means of these pawls 3 and 4, as has been described. As soon as the line were finished it would simply be necessary to carry the table A into its original position, which can be readily accomplished, when the line-adjuster B would be fed forward the distance of one of the openings e, each opening corresponding to one line. The second line would be begun and finished precisely as the first.

Now, having thus described my said invention, what I claim as new, and desire to secure by United States Letters Patent, is—

1. In a metal printing and embossing machine, the combination, with a suitable bed-plate and supporting-head, of a reciprocating plunger within said head; a type-holder below said head; an intermittently spring-actuated sliding bed below said type-holder; a rack secured to said sliding bed; a lever connected to said supporting-head and to said reciprocating plunger; an operating-bar secured to said lever; feeding-pawls adapted to intermittently engage said rack, to feed said spring-actuated sliding bed forward the width of a single type, said operating-bar being adapted to actuate said reciprocating plunger and said feeding-pawls; in combination with a suitable type adapted to be removably held within said type-holder, all substantially as and for the purpose set forth.

2. The combination, with a suitable supporting-bed and plunger-head, R, of the plunger, P, working within said head; the lever, D', secured to said head, R, and said plunger, P; the operating-rod, L, spring-supported by means of the spring, F; the type-holder, R', secured below said plunger, P, and adapted to removably contain a single type; the sliding bed, A, provided with the rack, Z; the spring, D, secured to said bed, A, and the support; the pivoted arm, Y, provided with the pawls, 3 and 4, said pawls being adapted to intermittently and successively engage said rack, Z; the bar, H, connected to said arm, Y, and the pivoted lever, I; said lever being connected to said operating-bar, L, all adapted to operate substantially as and for the purpose set forth.

3. The combination with a suitable supporting-bed and plunger-head, a plunger reciprocating within said head, a power-lever secured to said plunger, an operating-bar secured to said power-lever, a die-holder secured to said plunger-head and positioned below said plunger, a sliding bed reciprocating below said holder, a downwardly-extending spring and a laterally-extending spring, a rack secured to said sliding bed, a bar pivoted below said sliding bed and provided with a spring-pawl adapted to reciprocate within said rack, a bar and lever connecting said pivoted bar to said main operating-bar, said plunger and ratchet mechanism being adapted to reciprocate alternately and a type or stamp working in combination with said plunger, all substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL C. SHELLEY.

Witnesses:

N. P. FEIL,
J. F. RYAN.