

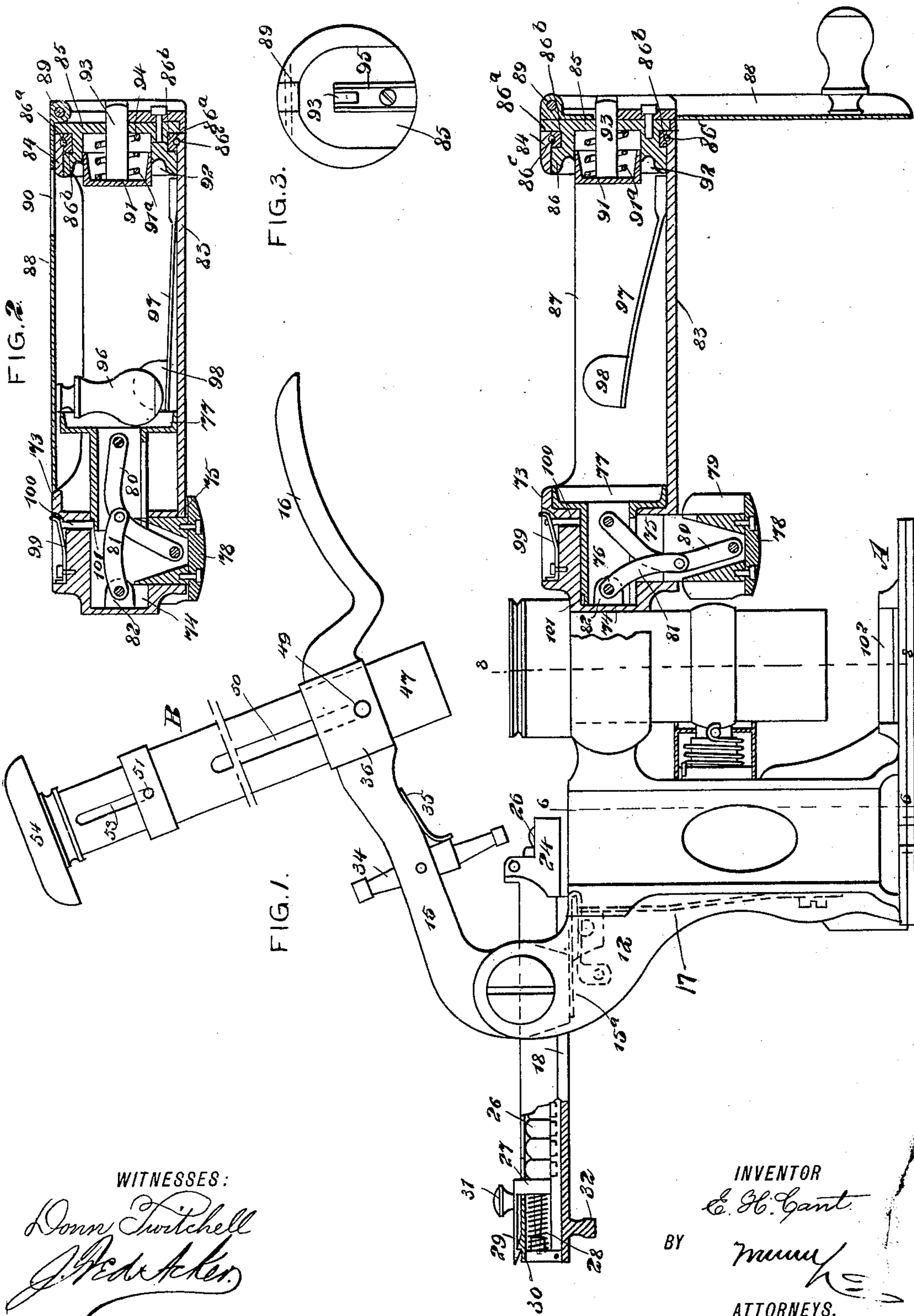
(No Model.)

3 Sheets—Sheet 1.

E. H. CANT.
CARTRIDGE LOADING IMPLEMENT.

No. 586,013.

Patented July 6, 1897.



WITNESSES:

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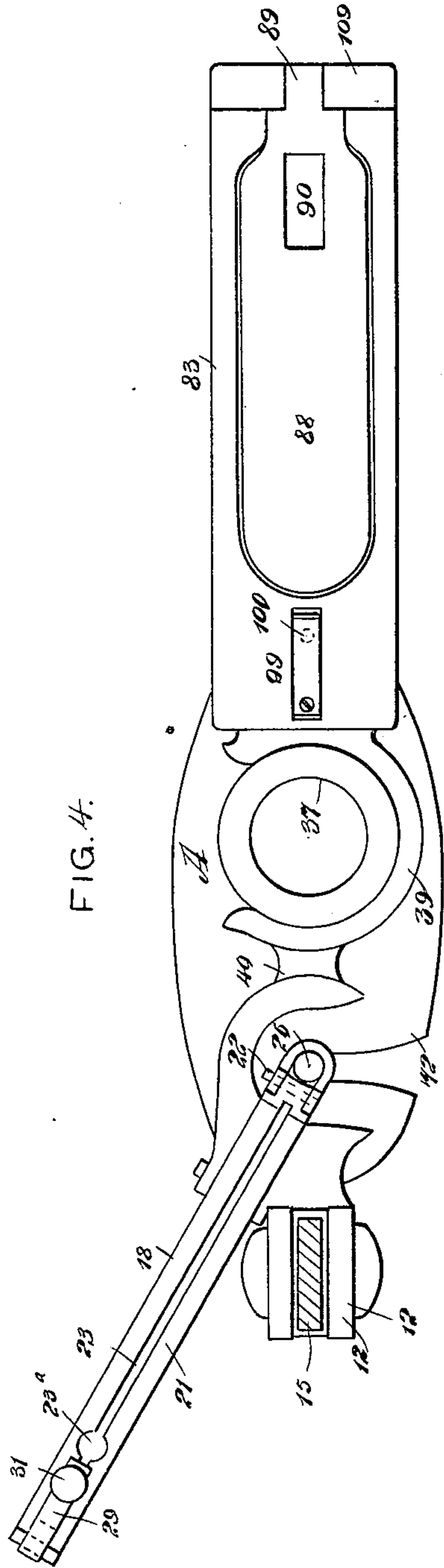


FIG. 4.

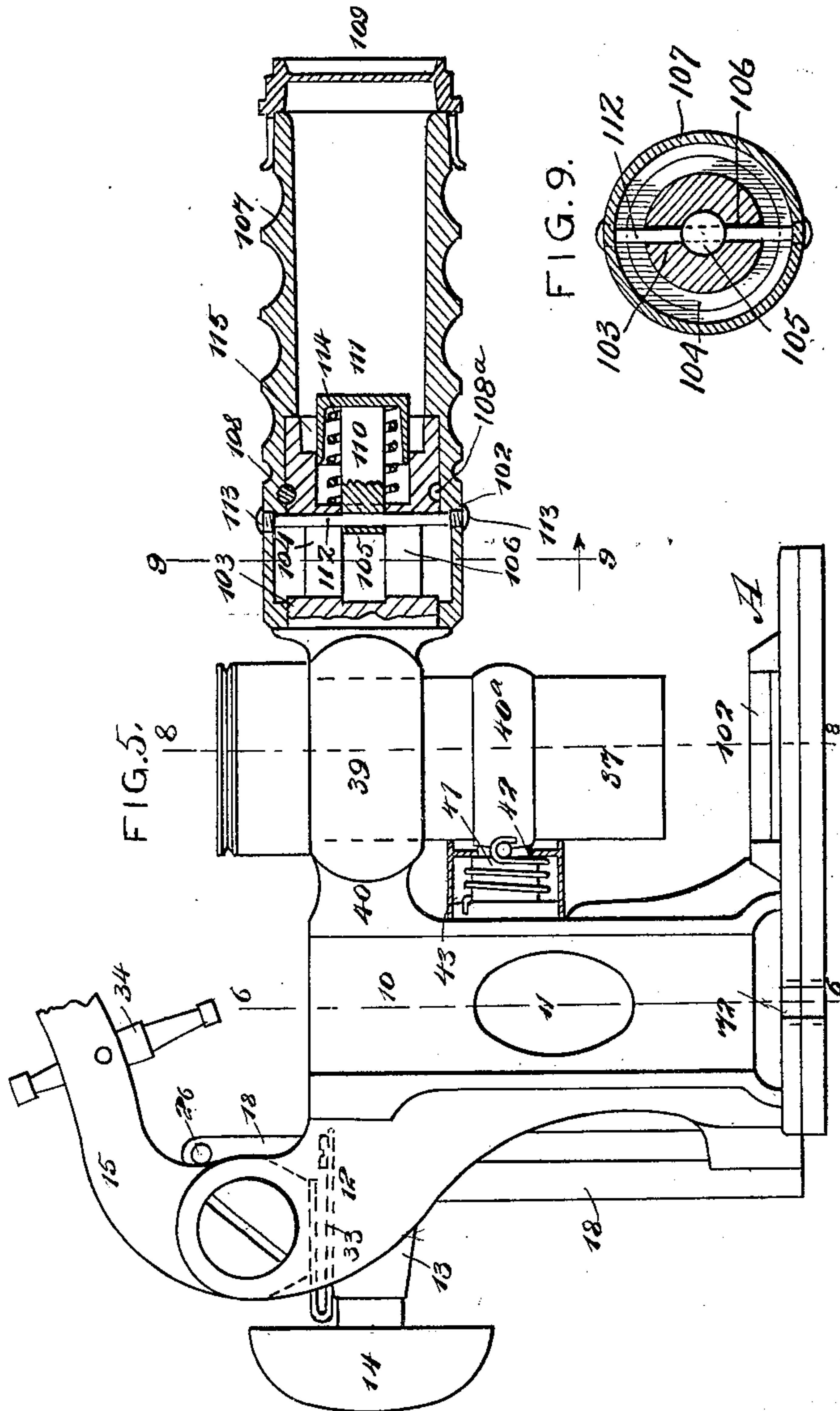


FIG. 5.

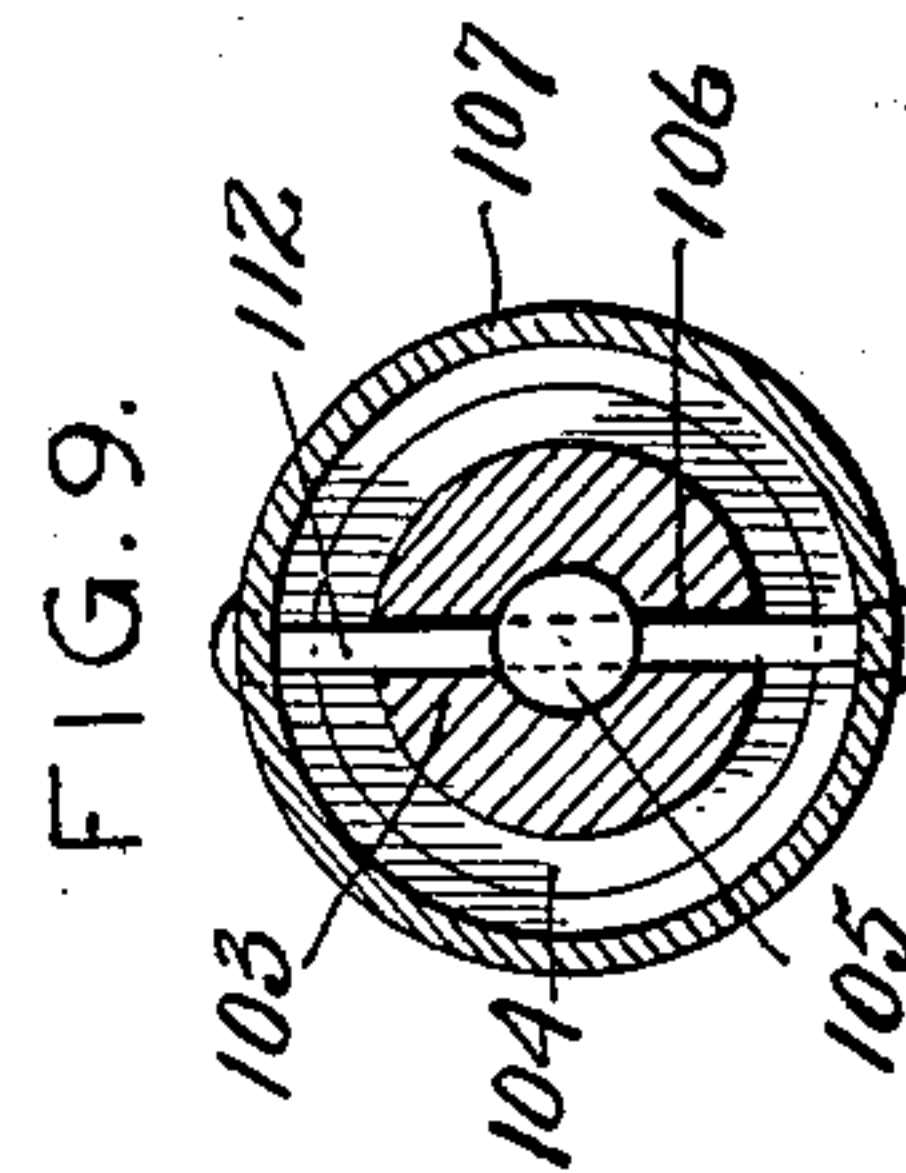


FIG. 9.

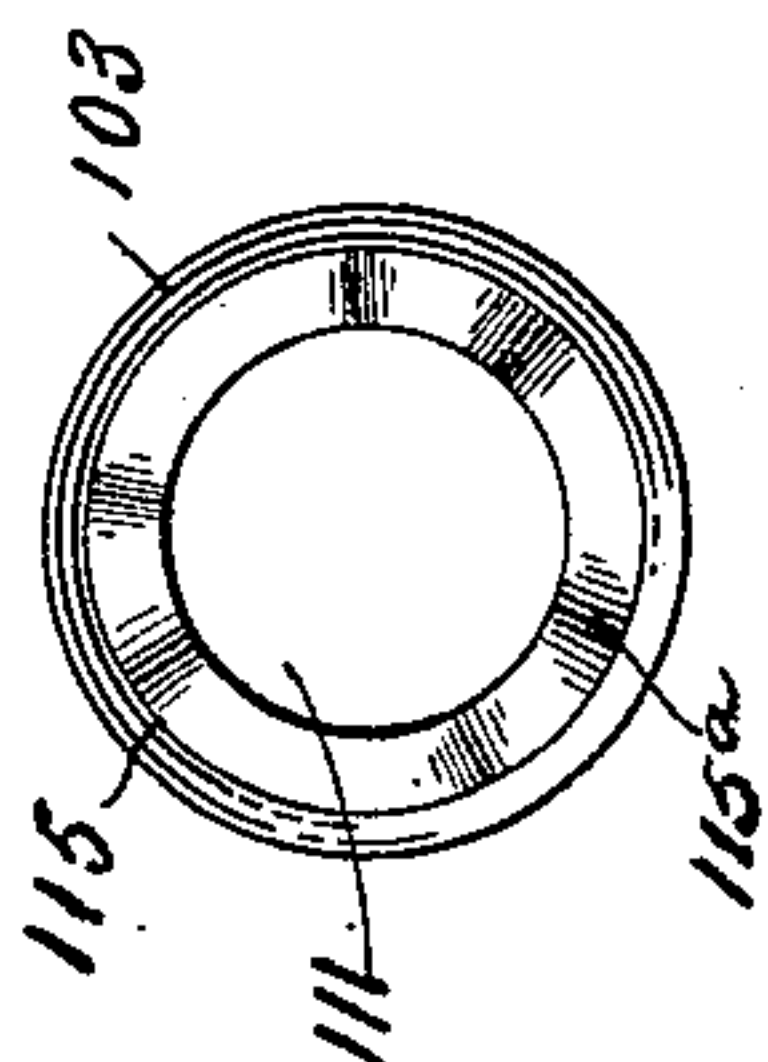


FIG. 10.

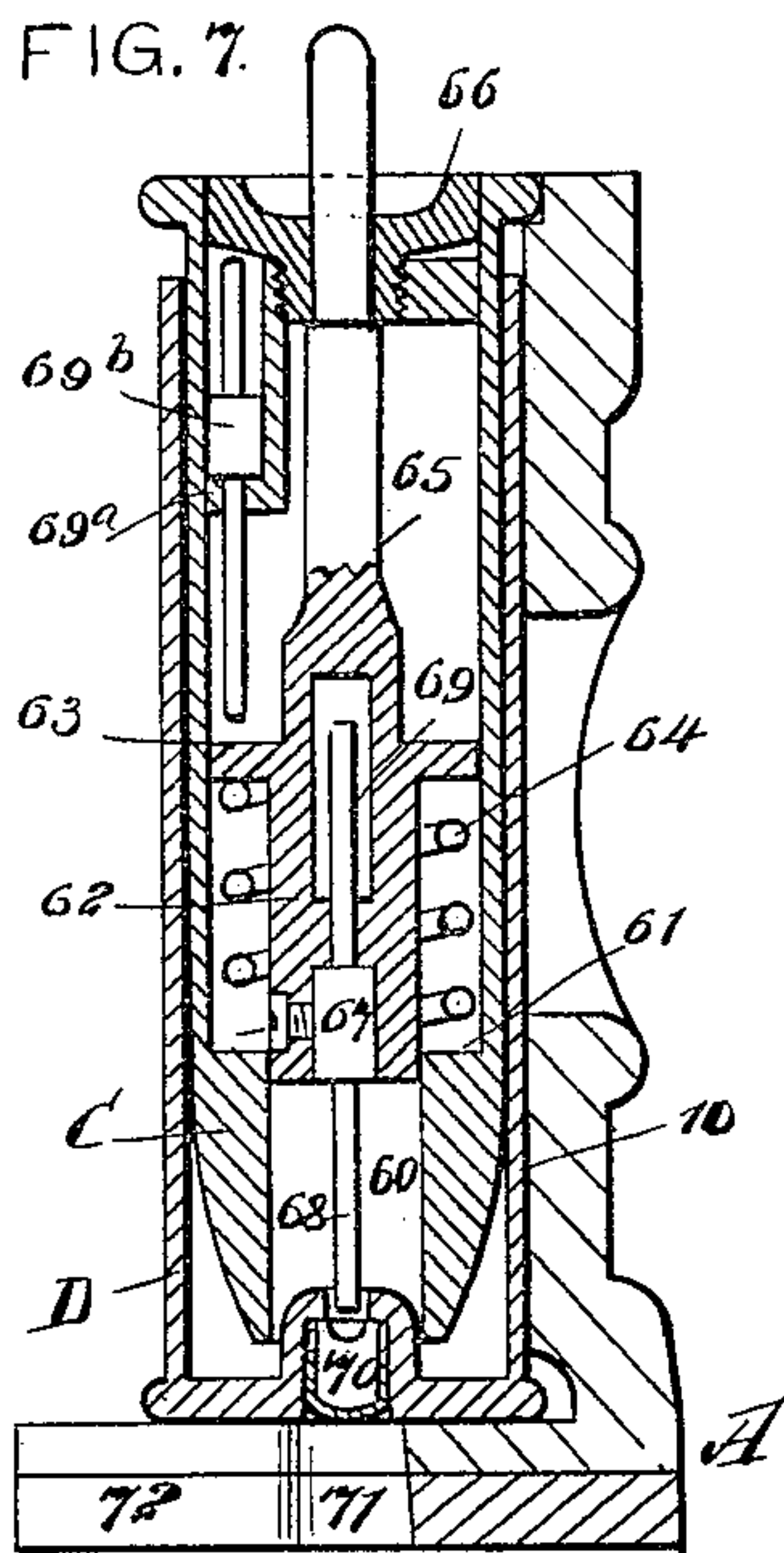
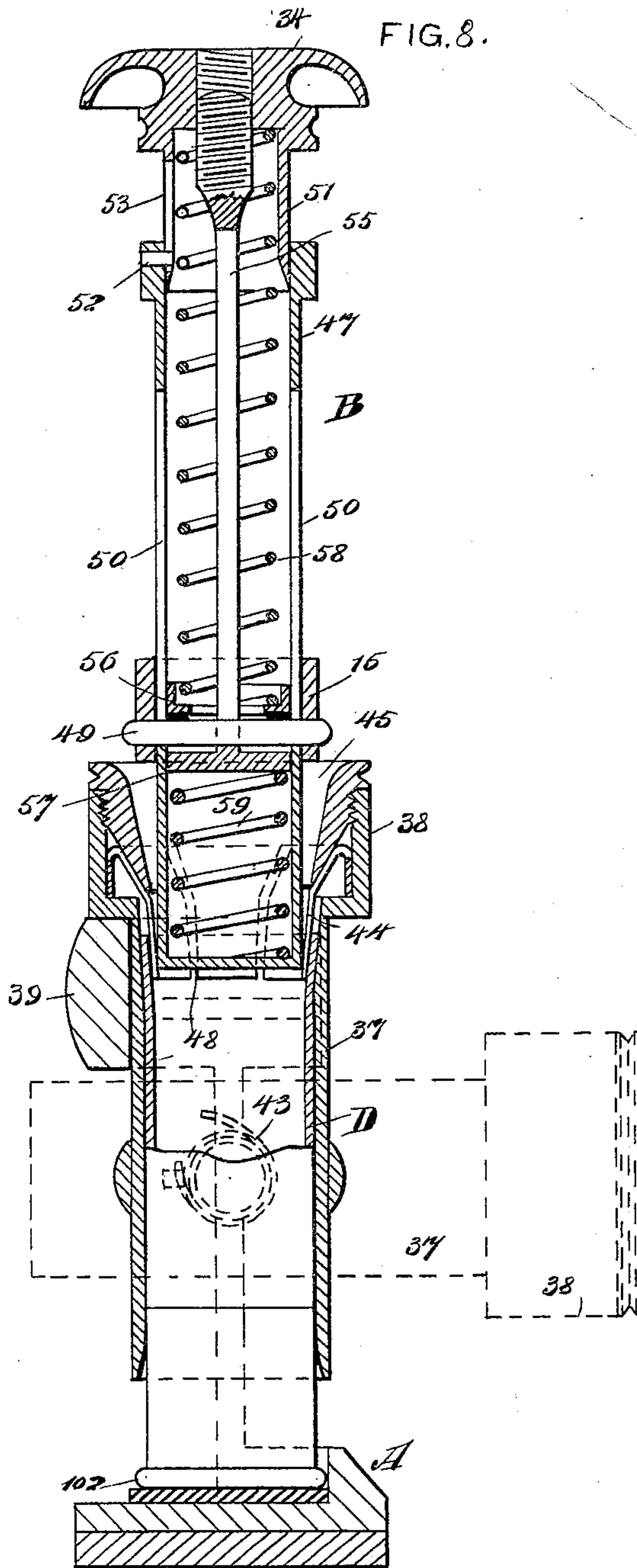
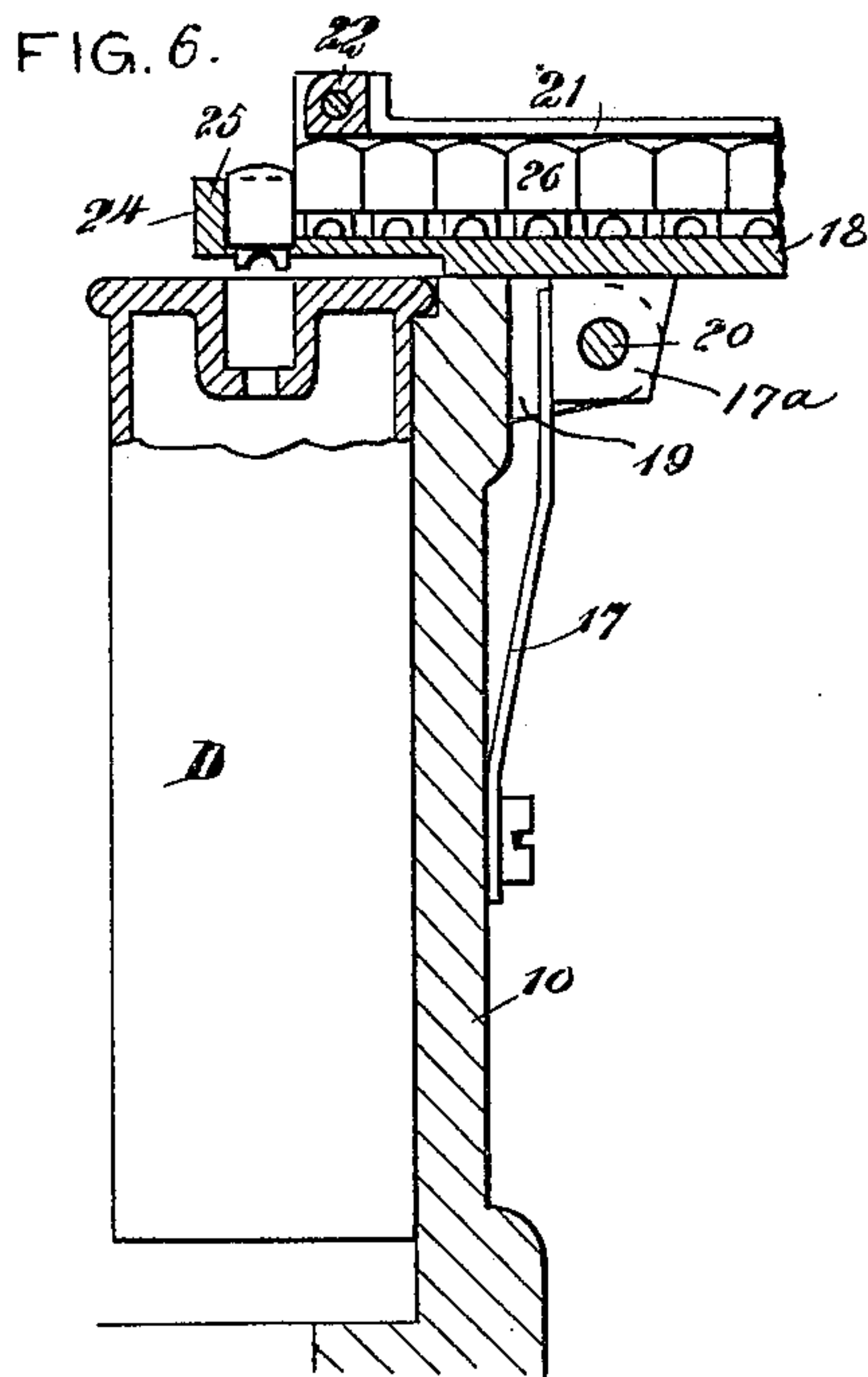
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Patented July 6, 1897.



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UNITED STATES PATENT OFFICE.

EDWIN HUGH CANT, OF HONOLULU, HAWAII.

CARTRIDGE-LOADING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 586,013, dated July 6, 1897.

Application filed October 22, 1896. Serial No. 609,676. (No model.)

To all whom it may concern:

Be it known that I, EDWIN HUGH CANT, of Honolulu, Hawaiian Islands, have invented a new and Improved Machine for Loading
5 Cartridges, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, durable, compact, and economic machine through the medium of which car-
10 tridges may be loaded, primed, and crimped in an expeditious and convenient manner and with safety to the operator and whereby also the primer may be extracted from cartridges that have been fired, the machine in reload-
ing acting to expand the open ends of the cartridges to be reloaded, smoothing out the crimp, and rendering the old shells as readily
20 refillable as a new shell.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification,
25 in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improved machine, parts being in section. Fig. 2 is a sectional view through the crimping device,
30 showing parts of the device as in a position to hold a shell, while in Fig. 1 the same parts are shown as in a position to release the shell. Fig. 3 is an end view of the crimping device shown in Fig. 2. Fig. 4 is a plan view of the
35 body portion of the device, the arm carrying the loading-plunger and the plunger being in horizontal section. Fig. 5 is a partial side elevation and partial vertical sectional view of the machine, illustrating a slight modifi-
40 cation in the construction of the clamping-section. Fig. 6 is a vertical section through the chamber adapted to receive the shell when the said shell is to have the primer ap-
plied, the section being taken on the line 6 6
45 of Figs. 1 and 5. Fig. 7 is a vertical section through the chamber shown in Fig. 6 and through a shell in inverted position and is likewise a vertical section through a mandrel employed for removing the old primer from
50 the shell; and Fig. 8 is a vertical section taken practically on the line 8 8 of Figs. 1 and 5, the section being likewise carried through

the loading-plunger and the arm carrying the same. Fig. 9 is a transverse section taken substantially on the line 9 9 of Fig. 5. Fig. 55
10 is an end view of the extension from the main frame shown in Fig. 5, the cartridge-receiving cylinder being detached, said view illustrating the undulating surface to receive the end of the cartridge-shell to be clamped. 60

In carrying out the invention a base A is provided, upon which a chamber 10 is formed, semicircular in cross-section, the said chamber being open at one side, and this chamber is provided with an opening 11 between its
65 top and its bottom portions. An arm 12 is projected from what may be termed the "rear face" of the said chamber, and this arm is carried upward above the chamber and is bifurcated, having a lever 15 placed in the bifur-
70 cated portion, and the said lever is usually squared at its lower end and the squared portion is made to bear against a spring 15^a, (shown in dotted lines in Fig. 1,) so that the lever may be held in an upper or in a lower
75 position, as required, the free end of the lever terminating in a handle 16.

At one side of the arm 12, preferably at the rear side, a spring 17 is secured, as shown in Fig. 6. Ears 19 are projected from the
80 outer wall of the chamber 10, between which ears a lug 17^a is pivoted by a pin 20, the pin being secured to the magazine 18. The upper or free end of the spring 17 has bearing against the lug 17^a, acting upon the lug in like
85 manner as a knife-spring does upon the pivotal portion of a knife-blade. Therefore the magazine may be carried downward to a vertical position, as shown in Fig. 5, or it may be
90 held in a horizontal position, as shown in Figs. 4 and 6, in which latter position the inner end of the magazine will extend over the priming-chamber 10.

Ordinarily the top portion 21 of the magazine is removable, being hinged thereto, as
95 shown at 22 in Figs. 4 and 6, and having a suitable fastening device at its opposite end. A slot 23 is made in the top 21 of the magazine-chamber, being in direct communication with its interior, and that end of the maga-
100 zine-chamber which is to extend over the priming-chamber is reduced in thickness and is provided with an opening 25, extending through from top to bottom, which opening

will center the receptacle in the shell D for the reception of a primer when the shell is placed with its bottom upward in the priming-chamber, as illustrated in Fig. 6. The
 5 extra primers are located in the magazine-chamber and are placed close together, being fed one after the other to the aforesaid opening 25 to be delivered to the shell, and the primers are fed, as described, in the mag-
 10 azine through the medium of a follower 27, which is located normally at that end of the magazine which would be the lower end when in vertical position and the outer end in the horizontal position, as shown in Fig. 1.
 15 The follower is controlled by a spring 28, and is provided with a latch 29, adapted to engage with a keeper at the outer or lower end of the magazine, and the follower is furthermore provided with a suitable knob or handle 31.

20 The primers are fed into the magazine through an enlargement 23^a of the slot 23, (shown in Fig. 4,) the said enlargement being just in front of the follower when the latter is in its outer position, and upon the bottom
 25 of the lower end of the magazine a lug 32 is usually placed, which, striking against the priming-chamber, will hold the magazine in a perpendicular position when closed against the side of the said chamber.

30 A fixing-rod 34 for the primers is pivoted in the lever 15, being prevented from lateral movement by a stop 35, and this fixing-rod for the primer is preferably double-ended, so that it may be used with primers of differ-
 35 ent sizes. A sleeve 36 is formed in the lever 15 between its handle and the fixing-rod 34, and in this sleeve the loading-plunger B is located. This plunger is adapted to enter a loading-cylinder 37, having an enlarged head
 40 38, and the cylinder is held in a curved arm 39 open at one side and connected by an extension 40 with a side of the priming-chamber, as shown in Figs. 1, 4, and 5.

A band 40^a is carried around the loading-
 45 cylinder beneath its support, the said loading-cylinder being open at its bottom and being held a predetermined distance from the base A. A stud 41 is projected from the band 40^a and made to enter a socket in the outer
 50 face of the priming-cylinder, the pivot of the band and the socket therefor being usually inclosed by a casing 42, and a spring 43 is attached to the socket and to the pivot for the loading-cylinder, being wound around the lat-
 55 ter, and the said spring acts to hold the loading-cylinder vertically within its support. The spring 43 also serves to restore the loading-cylinder to its normal or vertical position when said cylinder is carried to a horizontal
 60 position and is released.

An expanding-head 44 is located in the head portion of the loading-cylinder, extending downward within its body, the sides of the expanding-head being placed a predetermined
 65 distance from the inner face of the loading-cylinder. This expanding-head is made of a very thin and spring material—brass, for ex-

ample—and its lower or contracted portion is provided with a series of fingers, as shown in Fig. 8. A locking-collar 45 is secured in the
 70 head 38 of the cylinder, and has a bearing against the upper portion of the inner face of the expanding-head, conforming to the shape thereof, as is also shown in Fig. 8.

The loading-plunger consists of a cylinder 75 47, provided with a bottom 48, and this cylinder is adapted to enter the shell D, which is placed in the loading-cylinder, the upper portion of the shell extending between the expanding-head and the cylinder-body. A
 80 pin 49 is passed through the sleeve 36 of the lever 15 and through a slot 50, made vertically in opposite sides of the lower or main cylinder 47 of the said plunger. A second and shorter cylinder 51 is entered into the
 85 upper end of the main cylinder, having limited movement therein, a pin 52 being passed through the main cylinder and into a slot 53, made in the upper end of the upper or aux-
 90 iliary cylinder, the latter cylinder terminating in a head 54, adapted to be conveniently received in the palm of the hand. A rod 55 is adjustably attached to the head 54, and the said rod extends downward to within a
 95 predetermined distance of the bottom of the main cylinder, as shown in Fig. 8, terminating at its lower end in a disk 57, the rod passing through a flange 56, secured in the main cylinder, against which flange the lower
 100 end of a spring 58 has bearing, the said spring being coiled around the rod and having bearing at its other end against the head of the cylinder. The disk 57 at the end of the rod
 105 55 has bearing upon a spring 59, the latter being contained between the said disk and the bottom 48 of the plunger, so that after the plunger is forced downward into the shell for the purpose of compressing or fixing the
 110 charge when it can be carried down no farther the upper cylinder may yet be pressed downward, exerting more or less extra pressure on the charge without inconvenience to the operator.

When a shell is to have the old primer re-
 115 moved, the shell is placed in the inverted position (shown in Fig. 7) within the priming-chamber and a mandrel C is used, which fits in the shell, the lower end of the mandrel being somewhat conically shaped, but the remain-
 120 ing portion of its outer surface is more or less straight, so that when the mandrel enters a shell that has been crimped and is pressed downward therein the mandrel will restore the crimped portion of the shell to its upright
 125 position.

The mandrel is provided with an interior chamber 60, which is reduced at its lower end, forming a shoulder 61, as shown in Fig. 7. A plunger 62 is held to slide in the body por-
 130 tion of the chamber 60, as well as in its contracted portion, and this plunger is provided with a guide-disk 63, which limits the downward movement of the plunger by striking against the shoulder 61. A spring 64 is coiled

around the body portion of the plunger, bearing against the shoulder 61 and the guide-disk 63, and the upper end 65 of the plunger is reduced and is passed outward beyond the upper end of the mandrel through a removable and apertured plug 66, to be engaged by the fixing-rod 34 when the lever 16 is pressed downward. Therefore the plunger is actuated by the said lever.

10 The plunger of the mandrel is made to carry an extracting-pin 67, the body portion whereof is secured in the plunger by means of a set-screw or its equivalent, as shown in Fig. 7, and the pin at one end extends farther beyond
15 the body 67 than at the opposite end, the two ends or working surfaces of the pin being designated as 68 and 69, and a pocket 69^a is made in the upper side surface of the mandrel to receive an extra extracting-pin 69^b.

20 The reason for the primer-extracting pins having long and short ends is that the long primers generally used with high-grade smokeless shells have great surface and require considerable force to remove them, and
25 by keeping a point short they are not so liable to slip to one side of the center piece. Care should be taken to use the short point uppermost for smokeless shells with No. 3 primer, since the long point interferes with
30 the primer being properly seated. The old primer is designated as 70 in Fig. 7, and it may be readily removed, since in the base A at the bottom of the priming-chamber an opening 71 is made, which will permit the
35 downward passage of the primer, and a slot 72 is made in one edge of the base, communicating with this opening.

A preferably circular and horizontal extension 73 is carried from the arm 39, supporting
40 the loading-cylinder. This extension contains a horizontal chamber 74 and a vertical chamber 75, the latter being in its lower portion and connecting with its vertical chamber, as shown in Figs. 1 and 2. A hollow fol-
45 lower 76 is made to slide in the horizontal chamber 74, the said follower being provided with a cupped outer end 77, capable of receiving the head of a shell, while in the lower chamber 75 a push-button 78 or its equivalent
50 has sliding movement, being provided with guides 79, suitably applied. A curved link 80 is secured at one end of the push-button, the other end of the said curved link being attached to the inner end of the follower 76,
55 and a shorter and oppositely-curved link 81 is pivotally attached to the longer link near its center and to a lug 82, which projects inward from the back of the chamber 74, it being understood that suitable openings are
60 made in the bottom of the follower and in the body of the push-button to admit of the link having free movement.

A horizontal cylinder 83 is made integral with or is attached to the extension 73, and
65 at the outer end of the cylinder 83 a circular head 84 is constructed, against which a disk 85 has bearing, serving to close the outer end

of the head 84, which would be otherwise open. The disk 85 is provided with an inwardly-extending flange 86, arranged to enter the head
70 84, and the said flange has an exterior circumferential groove 86^a made therein, receiving a split ring 86^b, having an exterior annular groove, as shown in Figs. 1 and 2. The disk is prevented from leaving the cylinder-
75 head 83, but is permitted to turn therein, by passing pins 86^c through the groove in the split ring and a corresponding groove in the head 84.

An opening 87 is made in the top of the
80 horizontal or crimping cylinder 83 between its head 84 and where it connects with the extension 73. This opening is adapted to be closed by a door 88, which is pivoted at its outer end to the upper face of the disk 85, as
85 shown at 89, the said disk being free to turn in the crimping-cylinder. A slot 90 is made in the door 88, as shown best in Figs. 2 and 4, and between the flanges of the revolving
90 disk 85 a crimping-block 91 is loosely mounted, the outer face of the flange around the block having a gutter or channel 92, made therein. (Shown in Figs. 1 and 2.) A pin 93,
preferably square, is attached to the crimping-block and is passed loosely through the
95 disk 85 and through an offset 95, made upon the outer face of the disk, and a spring 91^a is coiled around the pin 93, tending to force the block 91 inward. This offset is adapted to be
100 received by the opening 90 in the cover 88 of the crimping-cylinder when the cover is carried vertically downward at the outer end of the cylinder, as shown in Fig. 1, at which time
the cover may be used as a crank-arm to re-
105 solve the disk 85, the cover having a suitable handle 96 attached.

A spring 97 is located in the bottom of the crimping-cylinder, having ears 98 at its free end shaped to receive between them the loaded cartridge, and a spring 99 is placed in a
110 recess on the top of the extension 73 of the frame, the said spring being provided with a pin 100, which slides in an opening in the said extension and is adapted to enter a recess
115 in the inner end of the follower 77 when the said follower has been carried inward, as shown in Fig. 2. After the cartridge has been primed and filled the cover 88 of the crimping-cylinder is carried downward to form a
120 crank-handle, and the follower 76, being at its inner position, as shown in Fig. 1, will receive within it the head of the cartridge-shell. By pressing upward the push-button 78 the fol-
125 lower 76 will be carried inward and the crimping-block will enter the shell, forcing with it the margin at the open edge and bending the same downward, forming an inward flange, and the cartridge being held downward
130 against the tension of the spring 97 will have its open end perfectly crimped by simply revolving the disk 85. A socket 102 is formed in the base A below the loading chamber or cylinder to receive the head portion of the shell that is to be loaded.

In Fig. 5 I have illustrated a slight modification in the formation of the crimping-chamber in which an extension 103 from the frame is made corresponding to the extension 73. (Shown in Fig. 1.) This extension is provided with an exterior groove 104, an inner chamber 105, and a vertical slot 106, extending through from top to bottom. A cylinder 107 is passed over the extension 103 and is held in place by a pin 108, passed through the cylinder and through the upper portion of the extension, an annular channel 108^a being made in the extension to loosely receive the said pin. The cylinder 107 is corrugated on the outside in order that it may be grasped readily by the hand and is closed at its outer end by a removable cover 109. The shank 110 of a crimping-block 111 is held to slide in the channel 105, a pin 112 being passed through the extension 103 and through the inner end of the crimping-block shank, the said pin being free to slide in the slot 106. This pin may be introduced when the cylinder is in position by removing the screws 113. A spring 114 surrounds the shank of the crimping-block, bearing against the block and against the shoulder in the forward chambered portion of the extension 103, in which chambered portion an annular recess 115 is made, preferably provided with an undulating back wall 115^a, whereby after the shell is introduced into the cylinder, the cap or cover 109 being removed, the open end of the shell will be flanged inward through the medium of the crimping-block and its surrounding channel 115. When the shell is in position, the cap or cover 109 is replaced. In this form of the device a horizontal arm 13 is extended from the upwardly-projecting arm 12 of the frame and a head 14 is pivoted on the horizontal arm. In the operation of crimping the crimping-cylinder 107 is held in a vertical position, the closed end 109 resting upon a convenient support.

The machine may be held steady by bearing with one hand upon the head 14, the other hand being used for turning the cylinder 107 until the desired crimping of the shell is obtained.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for loading shells, the combination, with a priming-chamber, of a magazine arranged to contain primers and having a follower for the same, the outlet of the magazine being at one end, and a hinge-support for the magazine, whereby the magazine may be carried at one side of the priming-chamber or across the same, with its outlet substantially centering the said chamber, as and for the purpose set forth.

2. In a machine for loading shells, the combination, with a chamber arranged to receive a shell and having an outlet, of a mandrel shaped to enter a shell, a plunger located in the said mandrel, and extracting-points car-

ried by the said plunger, one of the said points being longer than the other, as and for the purpose set forth.

3. In a machine for loading shells, the combination, with a loading-chamber arranged to receive a shell, of a loading-plunger, a support therefor, the said plunger consisting of a main cylinder having sliding movement in its support, and an auxiliary cylinder having sliding movement in the main cylinder, the main cylinder of the plunger being closed at its lower end, and the auxiliary cylinder closed at its upper end, a rod attached to the closed portion of the auxiliary cylinder and extending within the main cylinder, terminating in a head, a spring surrounding the said rod, having a bearing on the said head and a bearing in the auxiliary cylinder of the plunger, and a second spring having a bearing against the head of the said rod and the bottom of the main cylinder, as and for the purpose specified.

4. In a machine for loading shells, the combination, with a crimping-chamber having a disk held to revolve at one end, provided with a flange, and a spring-controlled crimping-block sliding within the flange of the disk, the disk-flange being provided with a channel adjacent to the side of the block, of a follower having sliding movement in the said chamber, a button arranged to impart movement to the said follower, and a cover for the said chamber, having a hinge connection with the disk, the said cover being adapted to be carried to a locking engagement with the disk, as and for the purpose specified.

5. In a machine for loading shells, the combination, with a crimping-chamber having a disk held to revolve at one end, provided with a flange, and a spring-controlled crimping-block sliding within the flange of the disk, the said disk-flange being provided with a channel adjacent to the side of the block, of a follower having sliding movement in the said chamber, a button arranged to impart movement to the said follower, a cover for the said chamber, having a hinge connection with the disk, the said cover being adapted to be carried to a locking engagement with the disk, forming a crank-arm therefor, and a locking device for the said plunger, all arranged for operation, substantially as specified.

6. In a machine for loading shells, a priming-chamber, a magazine for primers hinged to the priming-chamber, whereby the magazine may be carried to a vertical or to a horizontal position, the said magazine being provided with an outlet arranged to extend over the priming-chamber when the magazine is at an angle to the said chamber, and means for forcing the primers from the said outlet of the magazine, as and for the purpose specified.

7. In a machine for loading shells, a priming-chamber adapted to receive a shell, a primer-magazine hinged to the priming-chamber and

having an outlet arranged in one position of the magazine to extend over the priming-chamber, a lever, and an extension from the lever arranged for engagement with the primer at the outlet of the magazine, and a locking device for the magazine, as and for the purpose set forth.

8. In a machine for loading shells, a priming-chamber adapted to receive a shell, a magazine for primers having a spring-controlled hinged connection with the priming-chamber, whereby the magazine may be locked at an angle to or parallel with the priming-chamber, the said magazine being provided with an outlet arranged to extend over the priming-chamber when the magazine is at an angle to the said chamber, a lever, an extension from the lever arranged for engagement with the primer at the outlet of the magazine, and a feed for the primers acting to carry them one after the other to the outlet of the magazine, as and for the purpose set forth.

9. In a machine for loading shells, the combination, with a chamber adapted to receive a shell having an outlet in its bottom, of a mandrel arranged to enter the shell in the said chamber, the mandrel being provided with an open lower end and a pocket at the opposite end adapted to contain an extracting-point, a plunger located in the said mandrel, a reversible extracting-point carried by the plunger, and a lever operating to force the plunger to an engagement with the primer of the shell, as and for the purpose specified.

10. In a machine for loading shells, the combination, with a loading-chamber arranged to receive a cartridge, a support to which the chamber is pivoted, and an expansion-head of a spring material having a fingered lower end, the said expansion-head being of substantially conical formation and located in the upper portion of the said chamber, of a plunger arranged to enter the shell

and pass through the expansion-head, a tension device normally holding the chamber in position to receive the plunger, and a lever carrying the said plunger, as and for the purpose specified.

11. In a machine for loading shells, the combination, with a crimping-chamber having a disk held to revolve at one end, provided with a flange and a spring-controlled crimping-block sliding within the flange of the disk, the disk-flange being provided with a channel adjacent to the side of the block, of a follower having sliding movement in the said chamber, and a button arranged to impart movement to the said follower, and means for revolving the said disk, as and for the purpose set forth.

12. In a machine for loading shells, a priming-chamber, a magazine for primers adjustably connected with the chamber, a pivoted, tension-controlled loading-chamber, a lever extending over the loading and the priming chambers, a plunger carried by the lever, arranged to enter the loading-chamber, and a fixing-rod attached to the lever, being adapted to force the primers from the magazine, as and for the purpose specified.

13. In a machine for loading shells, a priming-chamber, a magazine for primers adjustably connected with the chamber, a pivoted, tension-controlled loading-chamber, a lever extending over the loading and the priming chambers, a plunger carried by the lever and arranged to enter the loading-chamber, a fixing-rod attached to the lever, being adapted to force the primers from the magazine, and a crimper located at one side of the loading-chamber and at an angle thereto, as and for the purpose specified.

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Witnesses:

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