

No. 683,150.

Patented Sept. 24, 1901.

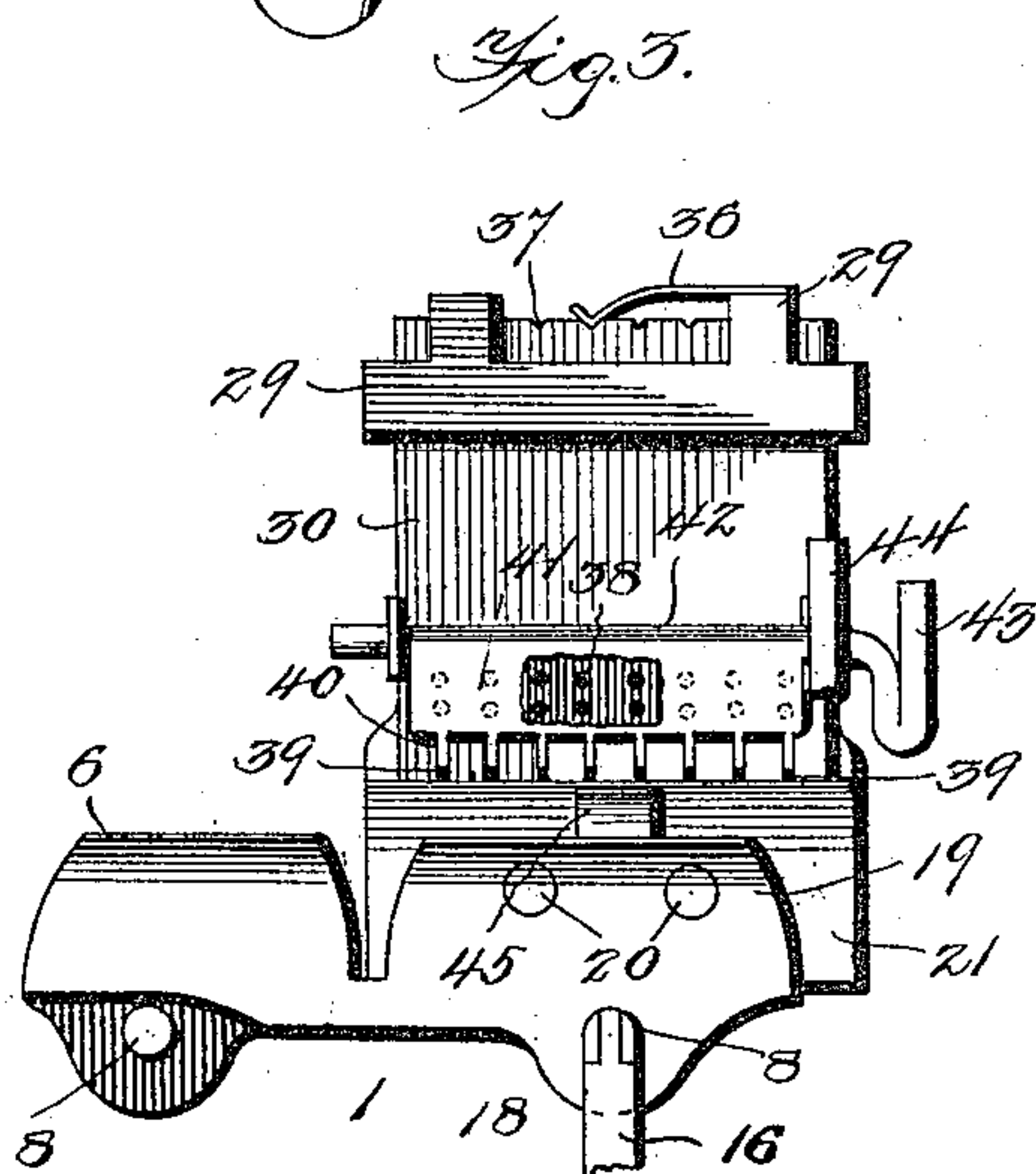
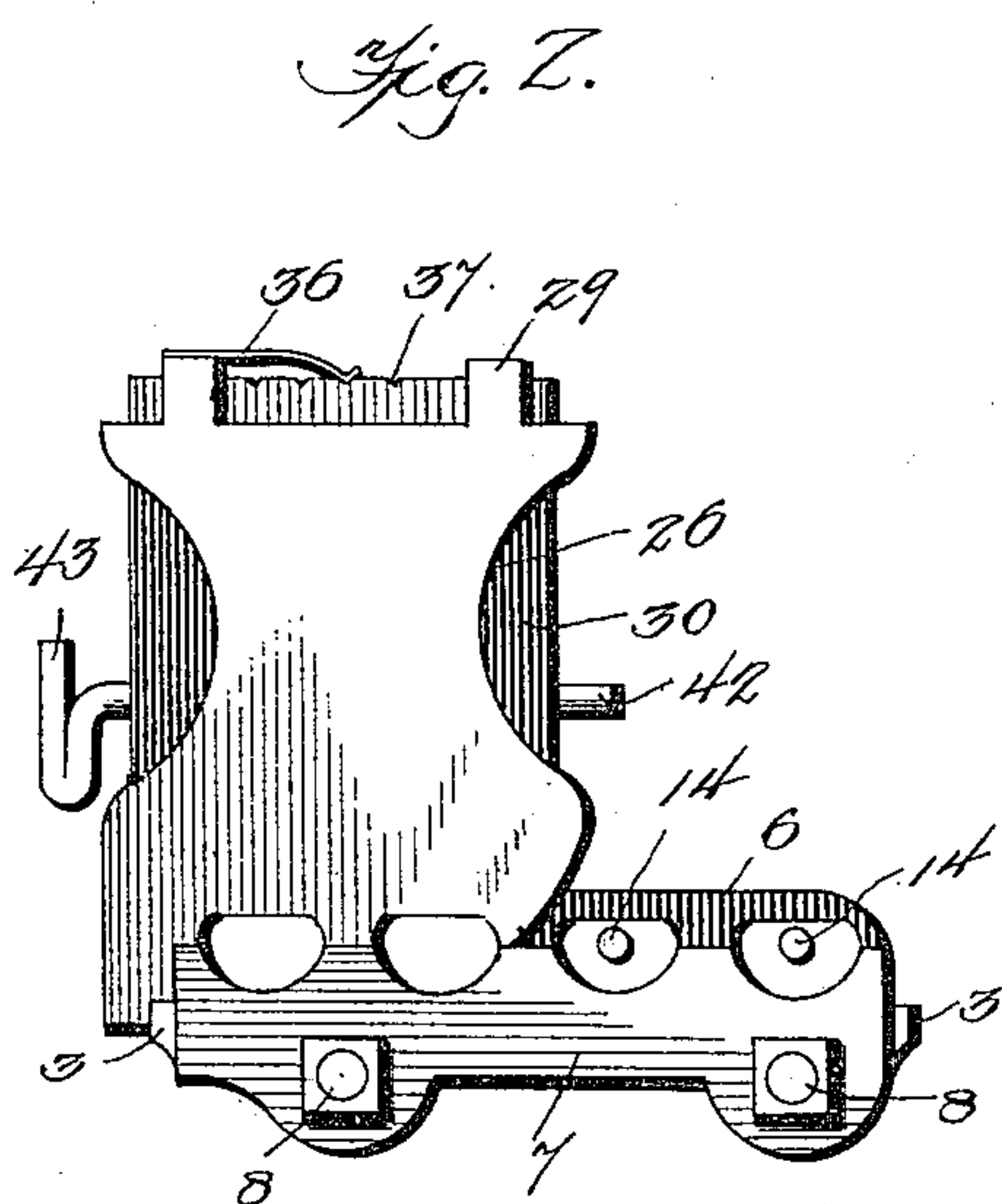
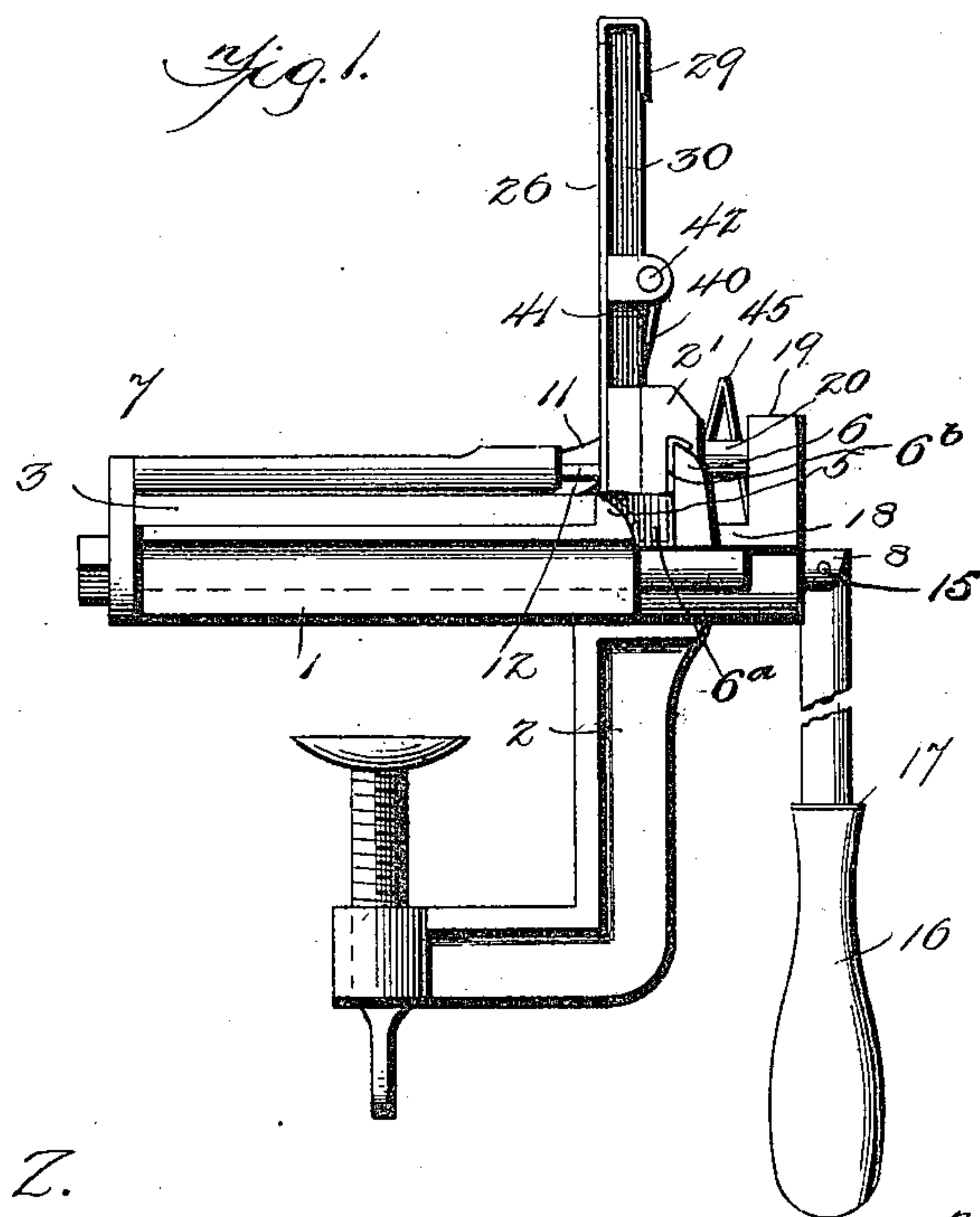
I. SILVIS.

CARTRIDGE PRIMING OR DEPRIMING APPARATUS.

(Application filed June 18, 1901.)

(No Model.)

3 Sheets—Sheet 1.



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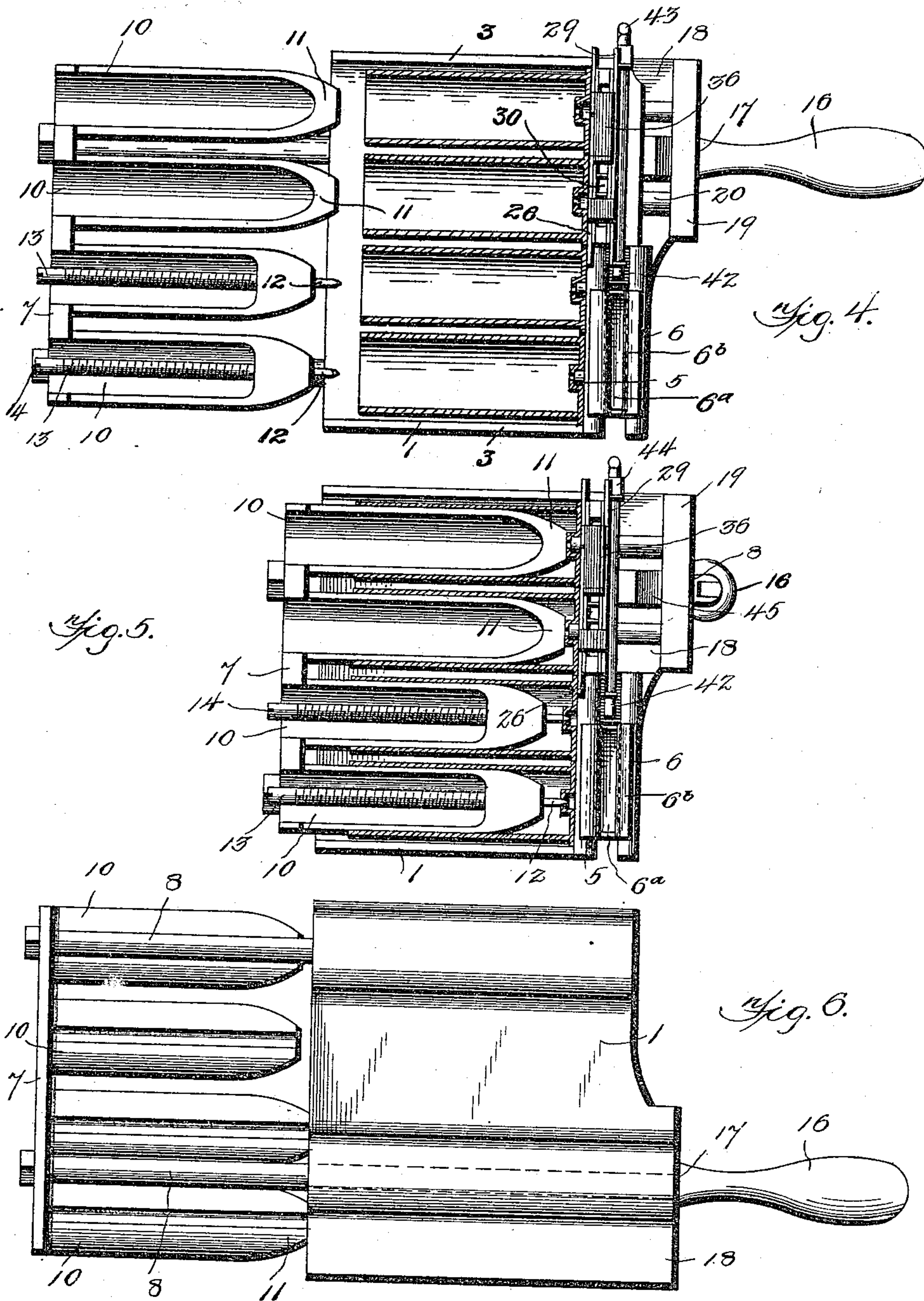
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3 Sheets—Sheet 2.



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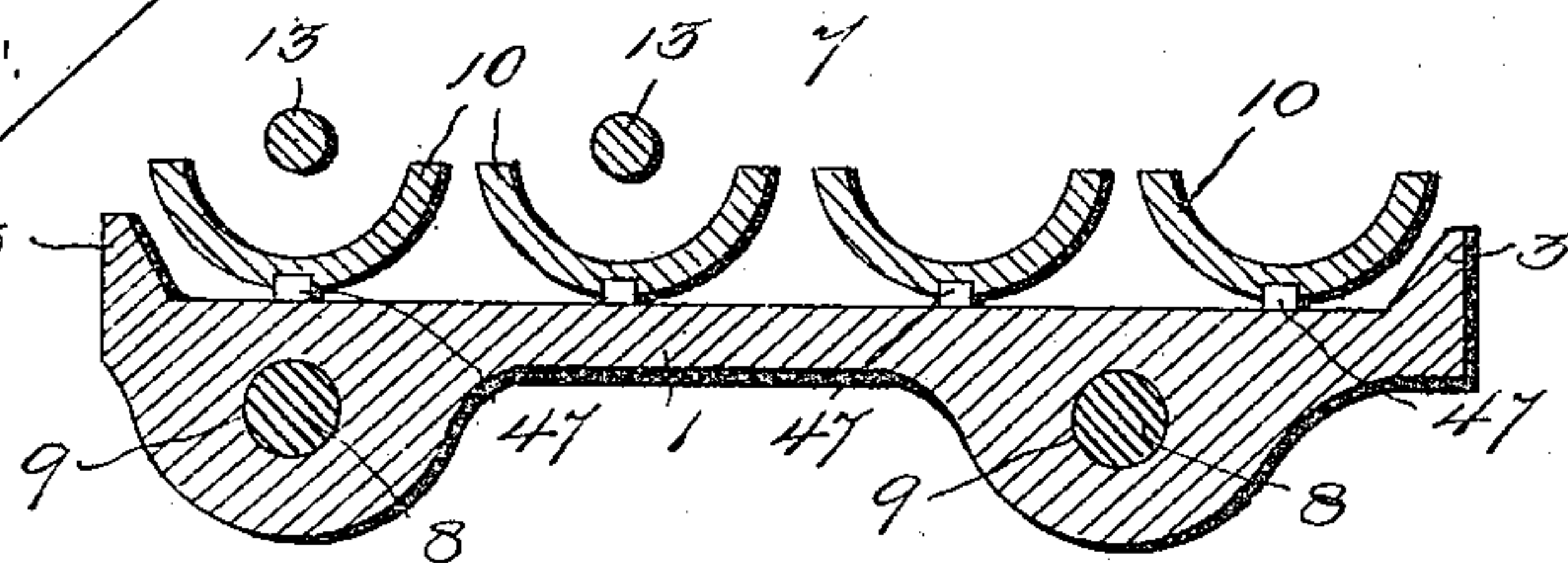
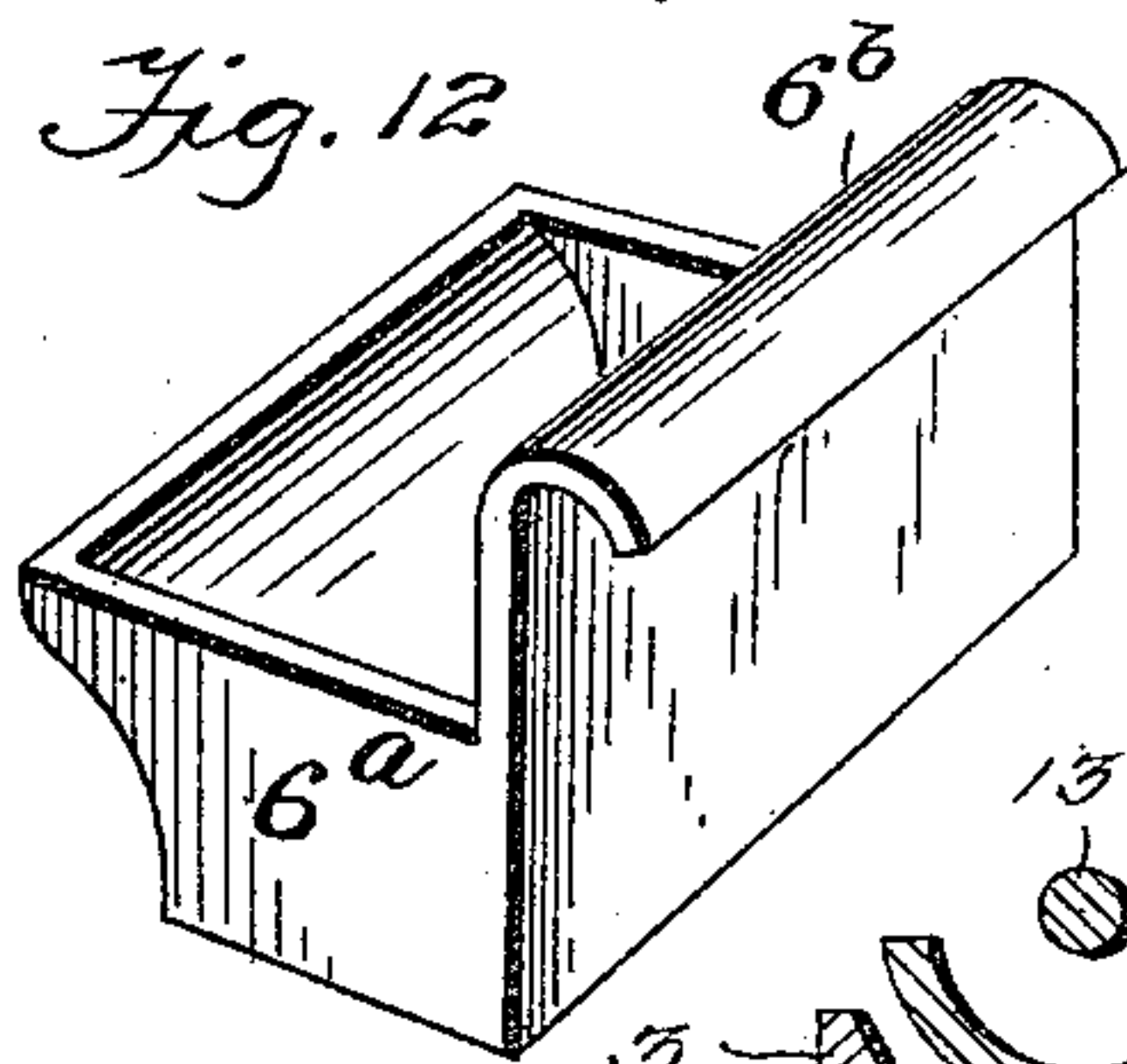
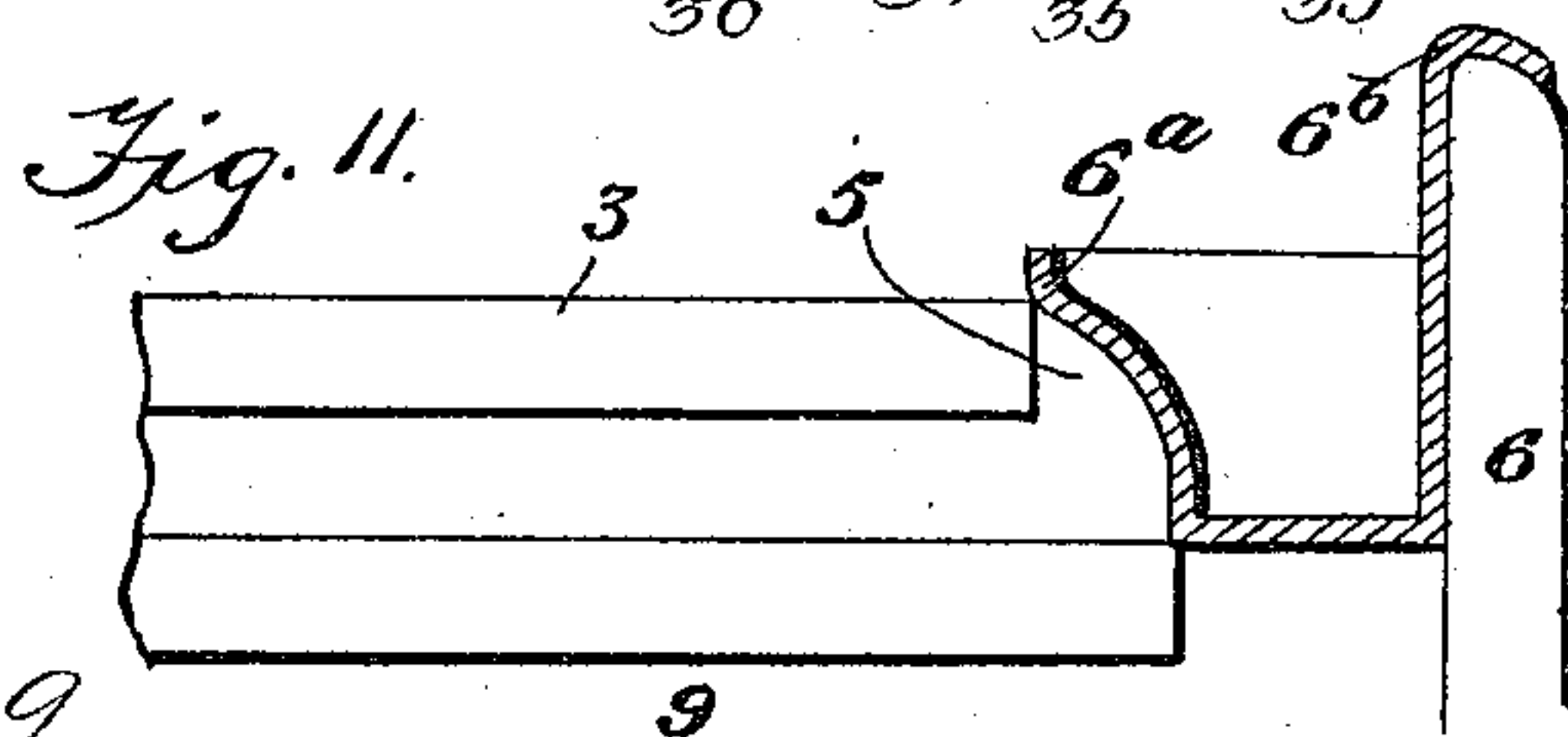
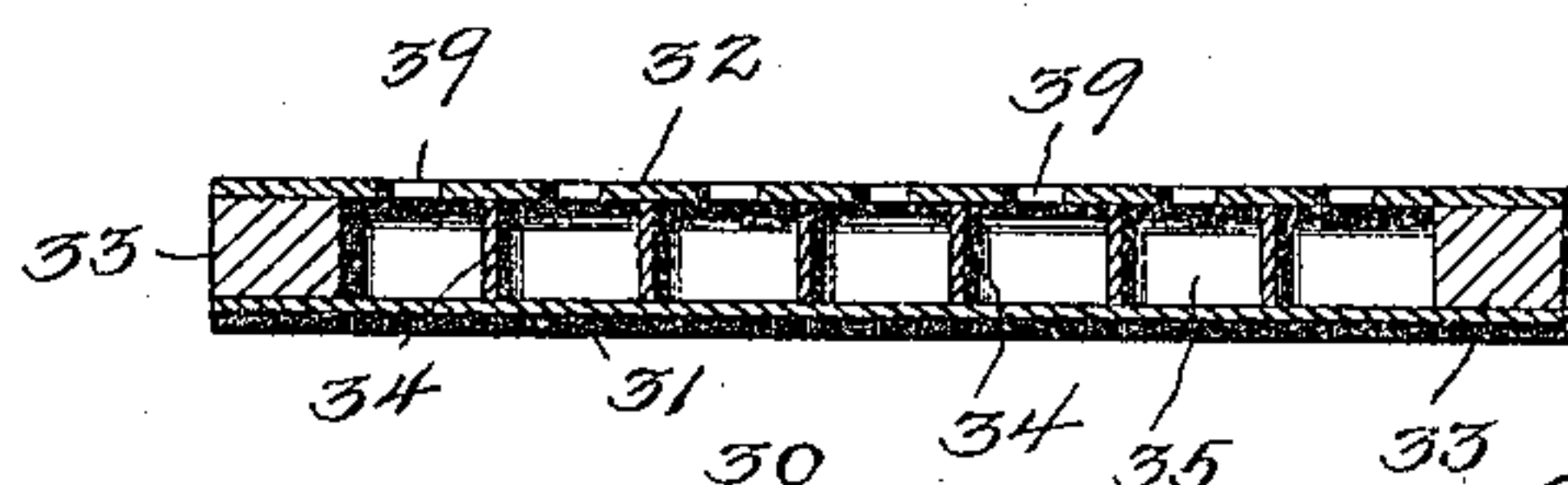
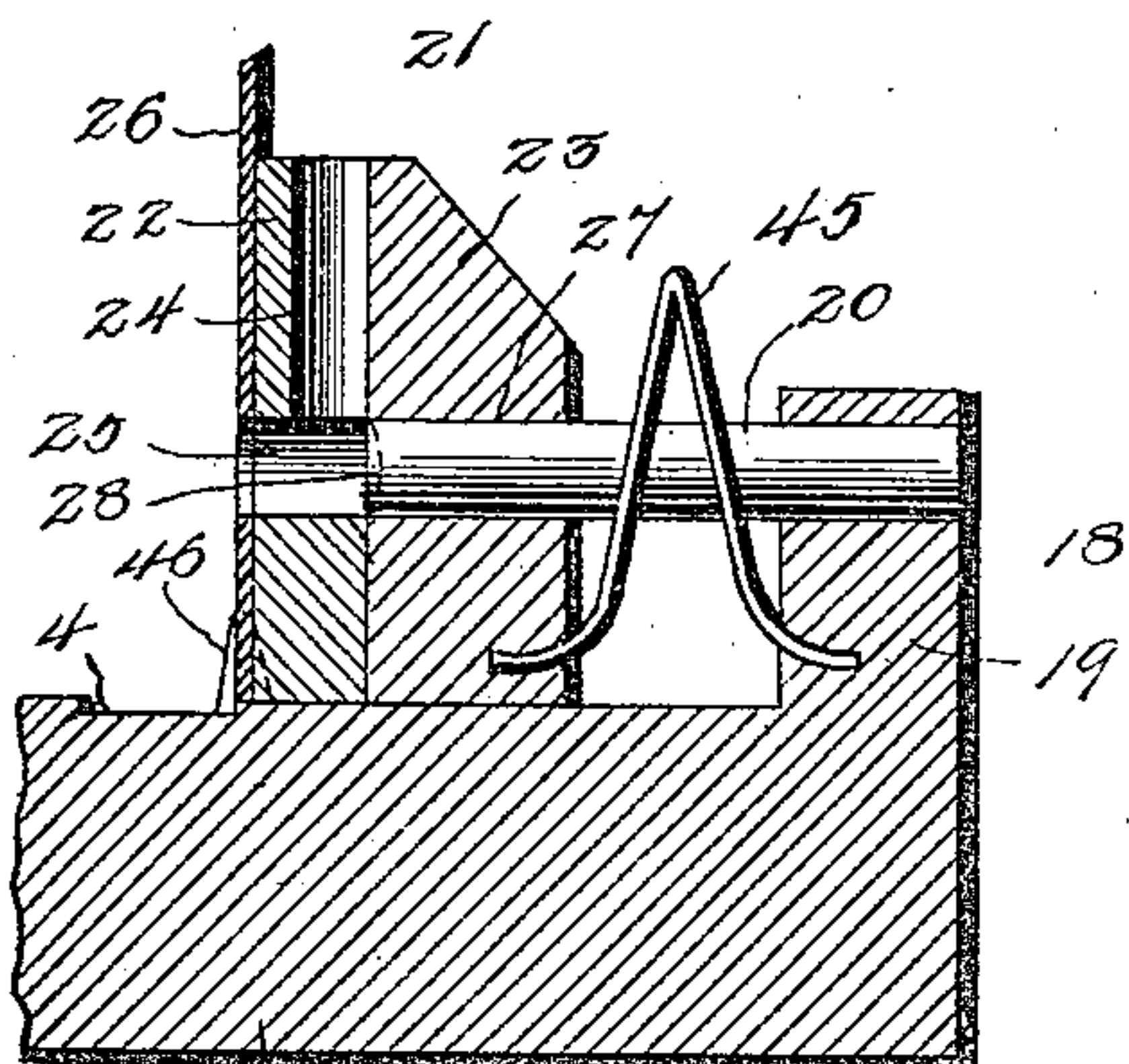
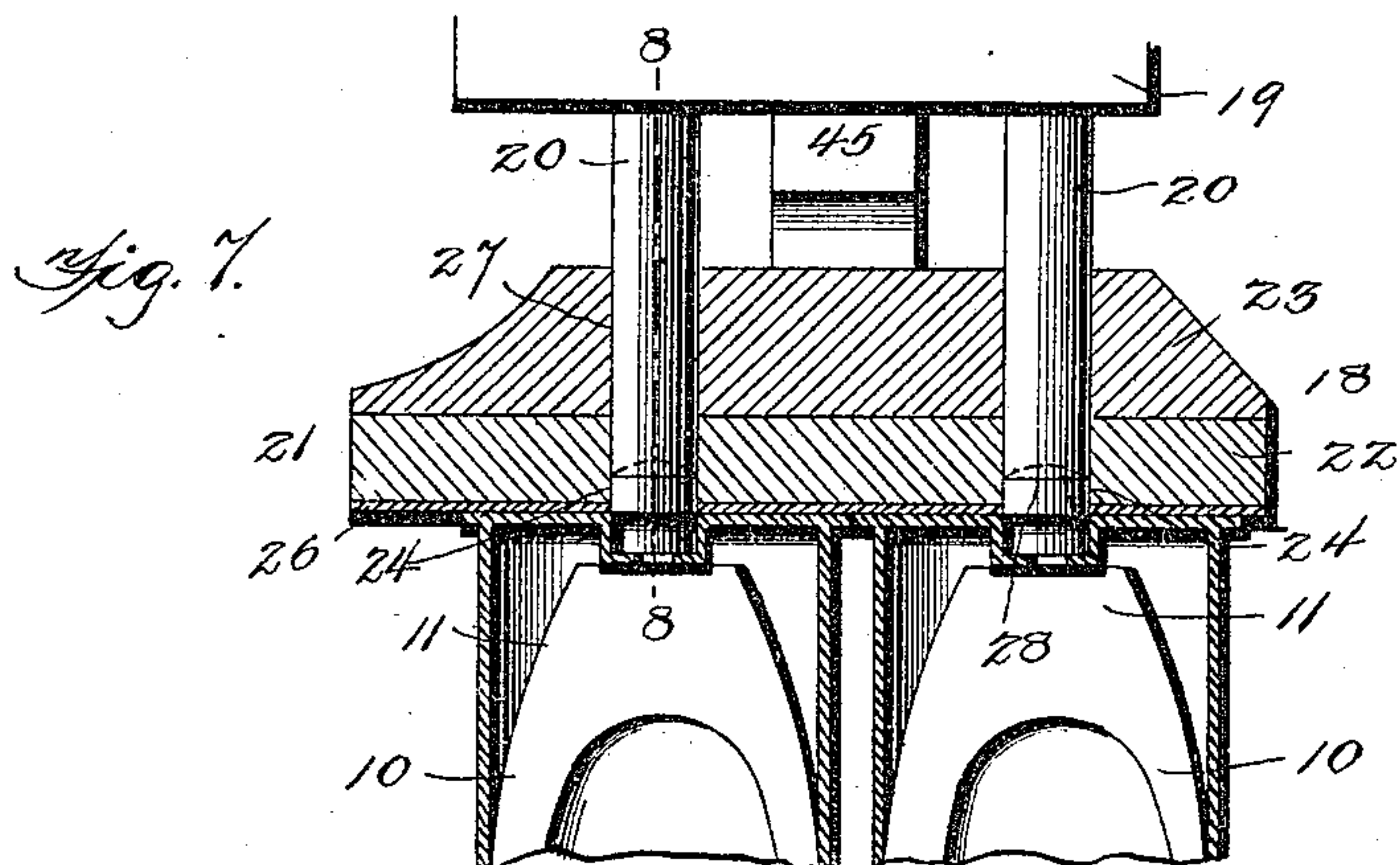
# I. SILVIS.

## CARTRIDGE PRIMING OR DEPRIMING APPARATUS.

(Application filed June 18, 1901.)

(No Model.)

**3 Sheets—Sheet 3.**



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# UNITED STATES PATENT OFFICE.

IRA SILVIS, OF GRAFTON, CALIFORNIA.

## CARTRIDGE PRIMING OR DEPRIMING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 683,150, dated September 24, 1901.

Application filed June 18, 1901. Serial No. 64,984. (No model.)

*To all whom it may concern:*

Be it known that I, IRA SILVIS, a citizen of the United States, residing at Grafton, in the county of Yolo and State of California, have  
5 invented certain new and useful Improvements in Cartridge Priming or Depriming Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled  
10 in the art to which it appertains to make and use the same.

This invention relates to an apparatus for priming and depriming cartridge-shells; and its object is to provide a convenient and efficient  
15 construction of apparatus whereby the operation of priming and depriming cartridge-shells may be easily and expeditiously performed.

With this object in view the invention consists in certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more fully described, and particularly pointed out in the appended  
20 claims.

In the accompanying drawings, Figure 1 is a side elevation of a cartridge-shell priming and depriming device embodying my invention. Fig. 2 is a front elevation thereof. Fig. 3 is a rear elevation. Fig. 4 is a top plan  
30 view, the shells appearing in section, showing the parts as arranged at the beginning of the priming and depriming operation. Fig. 5 is a similar view showing the arrangement of the parts at the end of the operation. Fig. 6 is a bottom plan view of the device with parts arranged as in Fig. 4. Fig. 7 is a horizontal  
40 section through the base of the feed-hopper, its supporting-frame, and the shells fed up to be primed, said section being taken on the line of the feed-openings in said frame. Fig. 8 is a vertical section of the same on the line 8 8, Fig. 7. Fig. 9 is a vertical cross-section through the frame and carriage, and Fig. 10 is a horizontal section through the hopper.  
45 Fig. 11 is a fragmentary end view of the bed-plate, showing the application of the box 6<sup>a</sup> thereto, the box appearing in transverse section; and Fig. 12 is a perspective view of the box.

50 Referring now more particularly to the drawings, the numeral 1 represents the bed-plate or supporting-frame of the apparatus,

which is provided with a clamp 2 for attachment to a table or work-bench and is formed upon opposite sides of its upper surface with  
55 flanges or stop-ribs 3, which hold the cartridge-shells placed thereon against lateral or sidewise movement preliminary to the feeding up of the shell-holders, hereinafter described. The shells are designed to rest upon  
60 the upper surface of said bed-plate, which may be of any desired width to contain any number of cartridges and has at its forward end a groove 4, in which the rim edges of the cartridge-shells are adapted to fit. On one side  
65 of the center and at the rear end of the bed-plate is arranged a stop flange or shoulder 5, against which the closed ends of the shells which are to be deprimed are adapted to bear, and in the rear of said flange and spaced there-  
70 from is located a second flange 6. A box 6<sup>a</sup> is slidably and detachably connected to one or both of said flanges to receive the primers forced from the cartridge-shells and is provided with a stop-plate 6<sup>b</sup> to arrest the shells  
75 as they fly out.

A carriage 7 is rigidly secured to the outer ends of two guide-rods 8, which are arranged to slide in openings 9, formed in the  
80 bed-plate 1, and from said carriage projects a series of parallel guides and holders 10, which are adapted to be fed up by the movement of the carriage to retain the cartridge-shells in position and to act also as depriming devices and anvils to assist in the operation  
85 of depriming and priming said shells. In the present instance four of such guides and holders are shown employed—two for priming and two for depriming purposes. The two priming guides and holders have  
90 projecting ends 11, which serve as anvils in the manner hereinafter described, and the two depriming holders and guides have mounted therein the depriming-pins 12, formed upon or secured to screw-threaded  
95 stems or shafts 13, adjustably mounted in screw-threaded openings in the said ends of the guides and holders and having their free ends slotted, as at 14, for the reception of a screw-driver or other tool applied thereto  
100 for adjusting them. The pins 12 when dulled or blunted may be dressed down so as to form a sufficiently sharpened point or surface for the extraction of the primers.



To one of the guide-rods 8 is jointed, by means of a pin 15, one end of an operating handle or lever 16, which is adapted to be drawn rearwardly to move the carriage 7 into operation and to be forced inwardly to retract the carriage, the inward movement of said parts being limited by a stop-flange 17 on said lever. The lever 16 is adapted to slide within the opening, in which the acting rod 8 is movably mounted until the carriage reaches the limit of its outward stroke, and then to be forced down on its pivot so as to bear against a bracket or extension 18 upon the bed-plate to exert a more powerful pressure or leverage at the instant of forcing the primers into the shells to be primed and extracting them from the shells to be deprimed. The bracket 18 is disposed upon the opposite side of the center of the bed-plate 1 from the flanges 5 and 6 and is formed at its outer end with a fixed head or block 19, in which is mounted two forwardly-projecting guide-pins 20, on which is fitted to slide the movable primer-head 21. This head is composed of front and rear plates 22 and 23, said front plate being provided with feed-passages 24, which communicate at their lower ends with feed-openings 25, opening through the inner or front surface of said plate, and in communication with corresponding openings formed in a supporting-frame 26, secured to the plate. The guide-pins 20 project through openings 27, formed in the rear plate 23 of the head and which communicate with the said feed-openings 25. The pins 20 are thus adapted to work through the communicating openings 25 and 27 and to guide the primer-head in its movement. When the primer-head is forced back, the inner or forward ends of the pins 20 project into the feed-openings 25 and serve as anvils to sustain the primers, being formed for this purpose with concavities 28 in their ends to receive the head of the cap of the primer. When the primer-head moves inwardly or toward the carriage 7, the feed-openings 25 are no longer closed by the pins 20, and primers from the hopper may therefore feed down into position thereinto for operation.

The supporting-frame 26 is provided at its upper end with an open-work guide 29, between which and said frame is slidably fitted a movable feed-hopper 30, which is supported by the primer-head 21 and guided in its movement transversely of the bed-plate 1 by the said open guide member 29. The hopper 30 comprises in its construction front and back plates 31 and 32 and vertical end pieces 33, which act as spacers to hold said front and back plates apart. The said plates are also held apart between the end pieces by vertical partitions 34, which forms a series of feed chutes or passages in which the primers are placed to be fed to the primer-head for application to the shells to be primed. The feed-chutes 35 are adapted to be brought into coincidence with either one of the feed-pass-

sages 24 in the primer-head 21 by sliding the hopper 30 laterally on said primer-head and to hold the feed-hopper stationary when in adjusted position with two of the feed chutes or passages in line with the passages 24. A spring-pawl 36 is provided upon the guide frame or member 29 to engage seats or notches 37, formed in the upper edges of the front and back plates 31 and 32 of said hopper. In the plate 32 are formed a series of peep-holes 38, through which the feed of the primers through the feed-chutes may be inspected, and in the lower edge of said plate are formed slots 39, through which project a series of curved fingers 40 upon the lower edge of an apron 41, pivoted to the hopper, said fingers acting in the nature of detents to prevent the primers from dropping down through the feed-chutes while said chutes are being filled. The shaft 42 of this apron is extended at one end to form a handle or finger-piece 43, whereby the apron may be opened to allow the primers to feed down, and a spring 44 is secured to the hopper and acts upon the said shaft to normally hold the apron closed with the said curved fingers projecting into the slots 39. In operation by sliding the hopper transversely of the bed-plate 1 on the primer-head 21 the lower ends of any two adjacent chutes therein may be brought into connection with the feed-passages 24, and when these are exhausted the hopper may be adjusted to bring two other feed-chutes in communication with said passages in a manner readily understood. The primer-head 21 is normally forced away from the head or block 19 by an interposed spring 45, and when the primer-head is forced inwardly or rearwardly by this spring the guide-pins 20 lie in rear of the feed-passages 24 and feed-openings 25, so that the primers in the feed-chutes communicating therewith are free, when the detents 40 are moved outward to feed down into said passages 24 and openings 25 in position for use in advance of the inner ends of the pins 20.

The operation is as follows: In depriming and priming a number of shells a pair of shells to be deprimed are first rested on the bed-plate 1 with the closed or headed ends of the shells bearing against the stop-flange or shoulder 5, the rim-flanges of the shells seated in the groove 4 and the outermost shell bearing against the adjacent side flange 3. The operating handle or lever 16 is then drawn outwardly to cause the holders and guides 10, carrying the depriming-pins 12, to enter the open ends of the shells, and this movement is continued until the depriming-pins 12 come into engagement with the primers, when the pivoted end of the operating-lever projects outward from the guide-opening 9 and said lever is left free to be forced downwardly. The lever is then forced downward and its free end is brought to bear against the bed-plate, which acts as a fulcrum therefor, whereby greater leverage may



be obtained to draw the pins 12 and cooperating parts farther up, whereupon the pins 12 force the primers outward. The primers, upon being expelled with force, strike against the stop-plate 6<sup>b</sup> of the box 6<sup>a</sup>, which prevents them from being scattered, and then drop down into said box to be saved for further use. The two cartridge-shells thus deprimed are then moved to the opposite sides of the bed-plate 1 for priming and two other cartridge-shells seated in the place formerly occupied by them for depriming. The apron 41 is then operated to withdraw the fingers 40 from the feed-chutes 35 to allow primers from the two feed-chutes in line with the feed-passages 24 to drop down and to be exposed at the feed-openings 25. The operating-lever 16 is then again operated in the manner heretofore described to force the holders and guides 10 into the shells. When the lever is moved to the limit of its outward stroke, the pins 12 on the two depriming-holders 10 are brought to bear upon the primers of the shells cooperating therewith, while the projecting ends or anvils 11 on the two other guides and holders 10 have forced the primer-head 21 backward against the head or block 19, thereby bringing the guide-pins 20 into the feed-openings 25 and forcing the primers outward until they are seated in their places in the heads of the shells. The anvils 11 of the two priming-guide holders 10 will then bear upon the priming-chambers of the shells to reinforce them while the primers are being seated therein. The operating-lever 16 then being at the limit of its outward-sliding movement is adapted to be forced down, and when forced down the pins 12 expel the primers on the shells to be deprimed, while the anvils 11 force the head of the shells to be primed tightly against the priming-head 19 and force the latter farther backward, thereby causing the pins 20 to be farther projected and to seat the primers within the chambers in the heads of the shells. Upon then elevating the operating-lever 16 and sliding the carriage 7 backward or away from the primer-head 21 the holders and guides 10 will be withdrawn from engagement with the cartridge-shells and the primer-head retracted to its normal position by the spring 45, ready for a repetition of the operation above described. The primer-head 21 is limited in its rearward movement by a stop-pin 46, and the shells are prevented from moving backward by pins 47. The feed-passages 24 and feed-openings 25 in the primer-head are preferably arranged to slope in order to provide for the proper feed of the primers as the shells increase or decrease in size.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of the invention will be readily understood without a further extended explanation, and it will be seen that a simple, durable, and effective device is provided, where-

by the operation of priming and depriming cartridge-shells may be easily and quickly performed.

While the preferred embodiment of the invention is as herein disclosed, it will of course be understood that changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

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

1. In an apparatus for depriming cartridge-shells, the combination of a bed-plate adapted to serve as a support for the shells, a sliding carriage carrying a guide and holder adapted to enter the shell, an extracting-pin carried by said holder to extract the primer in the shell, and means for operating said carriage, substantially as described.

2. In a depriming apparatus for cartridge-shells, the combination of a bed-plate adapted to support the shells, a movable guide and holder adapted to enter the shell, an adjustable extracting-pin mounted upon said holder for extracting the primer in the shell, and means for moving said holder into and out of the shell, substantially as described.

3. In a depriming apparatus for cartridge-shells, the combination of a bed-plate adapted to support the shell and having a head for the closed end of the shell to bear against, a sliding carriage, a holder and guide mounted on said carriage and adapted when the carriage is moved in one direction to enter the shell and extract the primer carried by said cartridge-shell, and an operating-lever for sliding the carriage, substantially as described.

4. In a depriming apparatus for cartridge-shells, the combination of a bed-plate provided with spaced flanges, one serving as a support for the headed end of the shell, and the other as a stop for the primers extracted therefrom, said flanges forming between them a conductor for the downward passage of the primers, a sliding carriage, a holder and guide mounted on said carriage and adapted to be moved into and out of the shell, an adjustable primer-extractor carried by said holder, and means for operating the carriage, substantially as described.

5. In a priming and depriming apparatus for cartridge-shells, the combination of a base-plate provided upon one side of its center with a shoulder for the heads of the shells to be deprimed to bear against, a primer-head arranged upon the opposite side of the center of the bed-plate for the headed ends of the shells to be primed to bear against, a carriage slidably mounted upon the bed-plate, a plurality of holders and guides mounted upon the carriage and adapted to be moved into and out of the shells, the guides upon one side of the center of the device being provided with extracting-pins and the guides upon the other side of the center of the de-



vice being provided with anvils or supports for the priming-chambers, a hopper for supplying the primers to the primer-head, anvils adapted to be projected upon the movement  
5 of the holders and guides to seat the primers in their chambers in the shell, and operating means for sliding the carriage to effect the simultaneous priming of one set of shells and the depriming of the other shells, substan-  
10 tially as described.

6. In a priming and depriming apparatus for cartridge-shells, the combination of a sup-  
porting-plate on which the shells are adapted  
to rest, a support against which the heads of  
15 the shells to be deprimed are adapted to rest, a priming-head against which the heads of the shells to be primed are adapted to rest, two sets of holders and guides adapted to be  
20 inserted into and withdrawn from the shell to act as supports and extractors, means for feeding the primers into operative position in the priming-head, and operating mechanism for effecting a simultaneous acting of the  
25 parts to deprime the one set of shells and to prime the other set of shells, substantially as described.

7. In a cartridge-shell-priming apparatus, the combination of a bed-plate, a priming-head provided with a feed-opening, a hopper  
30 in communication with said opening, a supporting device adapted to be moved into the shell to support the same while the primer is being seated, and means for operating said supporting device to bring the shell into po-  
35 sition for the seating of the primer therein, substantially as described.

8. In a cartridge-shell-priming device, the combination of a bed-plate, a movable spring-retracted priming-head provided with feed-  
40 openings, pins serving as guides for the primer-head and adapted to project into said openings to serve as anvils to seat the primers,

holders and guides adapted to enter the shells and to force them against the priming-head, and means for operating said holders and  
45 guides, substantially as described.

9. In a cartridge-priming apparatus, the combination of a bed-plate, a priming-head movably mounted thereon and provided with  
50 feed-openings, a spring for retracting the priming-head, a hopper upon the priming-head to feed the primers to said openings, a sliding carriage, holders and guides mounted upon the carriage and adapted to be forced  
55 into and out of the shells and to bring the shells to bear against the priming-head, and means for operating the carriage, substantially as described.

10. In a cartridge-priming apparatus, the combination of a bed-plate, a priming-head  
60 mounted thereon and provided with feed-openings, guide-pins for the priming-head adapted when the head is moved outwardly to project in said openings and serve as an-  
65 vils to seat the primers, a spring for retracting the primer-head, an adjustable hopper mounted upon the primer-head and having a series of feed-chutes, either of which is adapted to be brought into communication with the  
70 feed-openings, means for holding the hopper in adjusted position, a sliding carriage, holders and guides mounted upon said carriage and adapted to enter the shells and force them against the priming-head, and means  
75 for operating the carriage, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

IRA SILVIS.

Witnesses:

WILLIAM S. WALL,  
ARTHUR C. HUSTON.