

(No Model.)

3 Sheets—Sheet 1.

E. A. FRANKLIN.
CARTRIDGE LOADING MACHINE.

No. 389,505.

Patented Sept. 11, 1888.

FIG. 1.

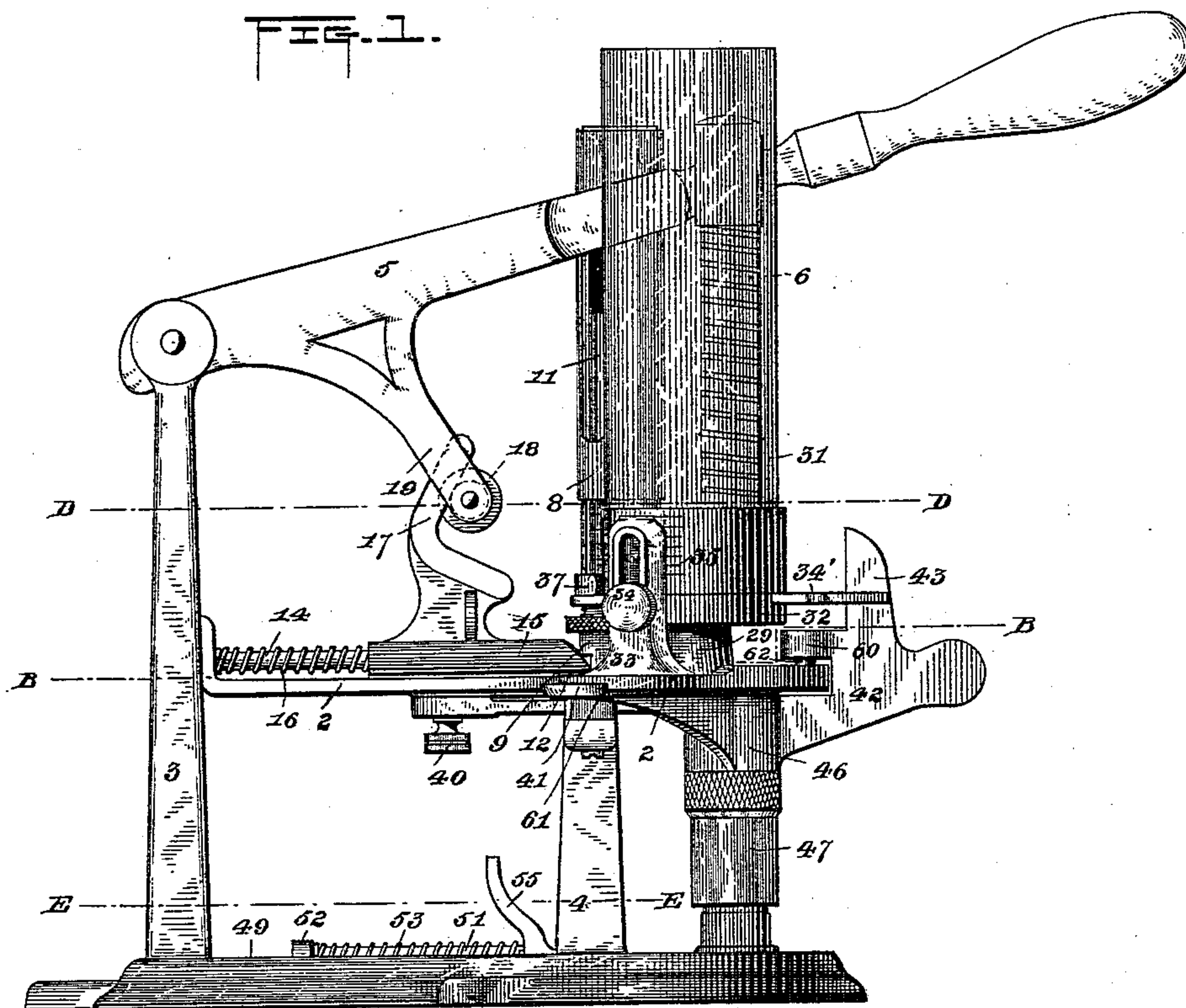
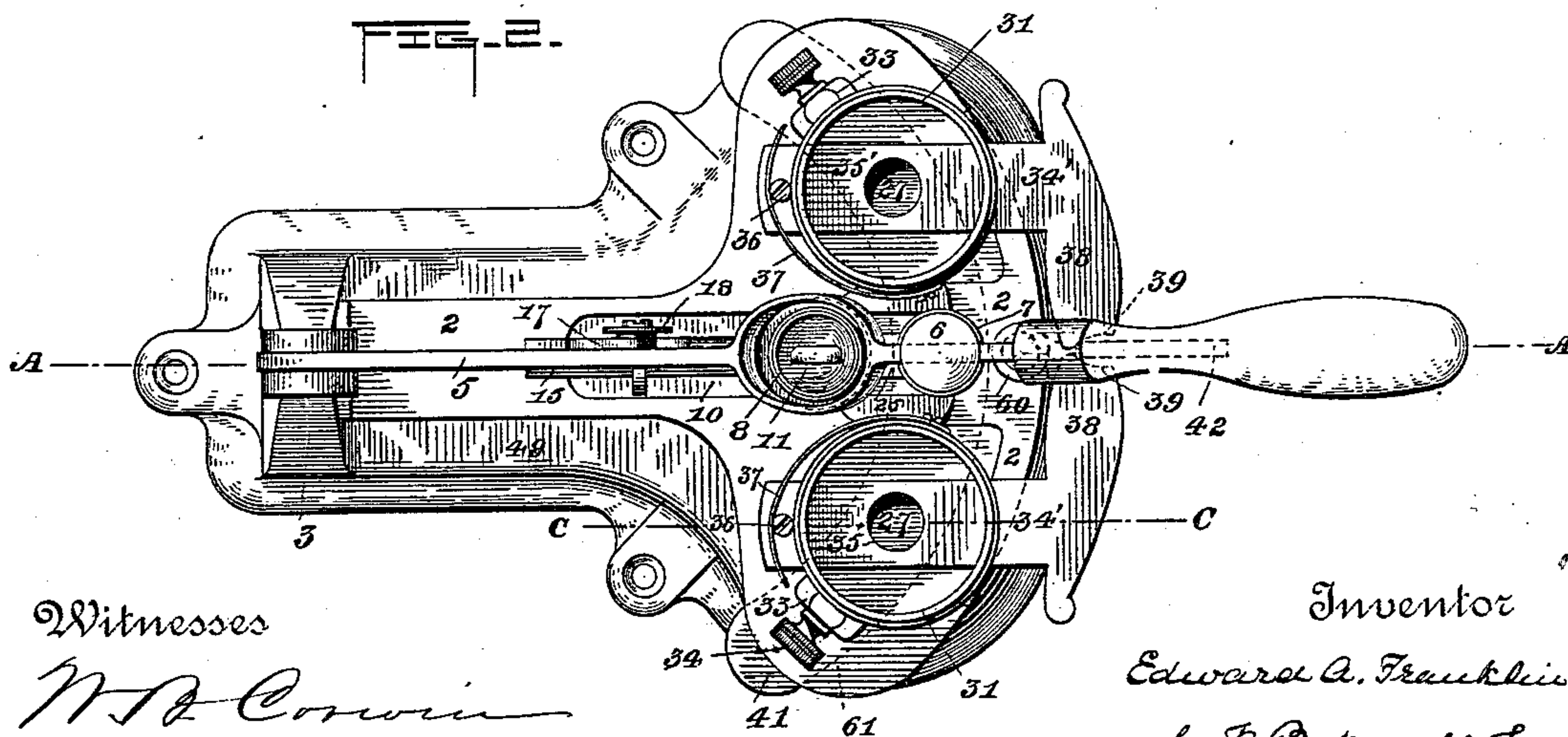


FIG. 2.



Witnesses

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his Attorneys.

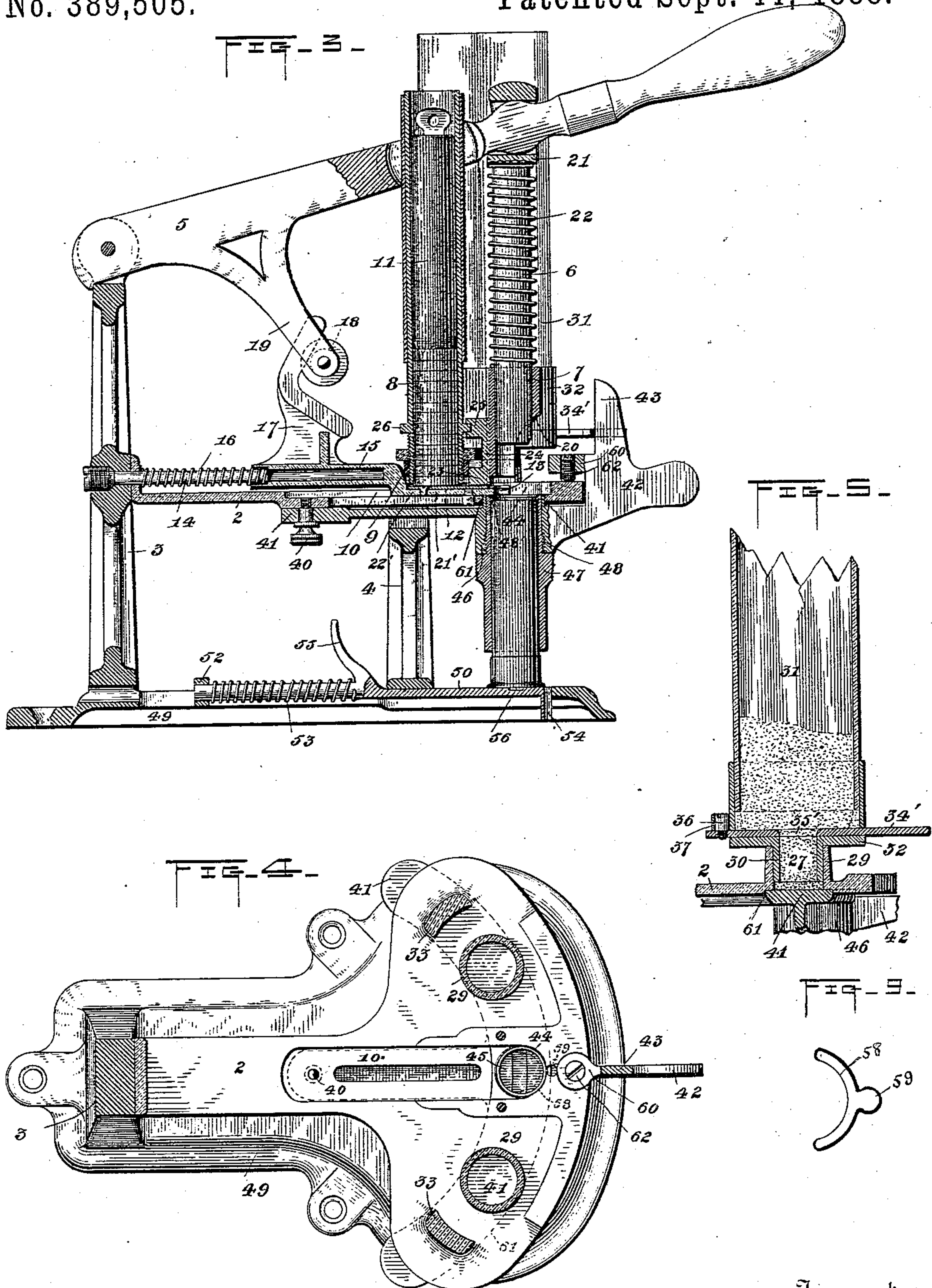
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3 Sheets—Sheet 2.

E. A. FRANKLIN.
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(No Model.)

3 Sheets—Sheet 3.

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FIG-6-

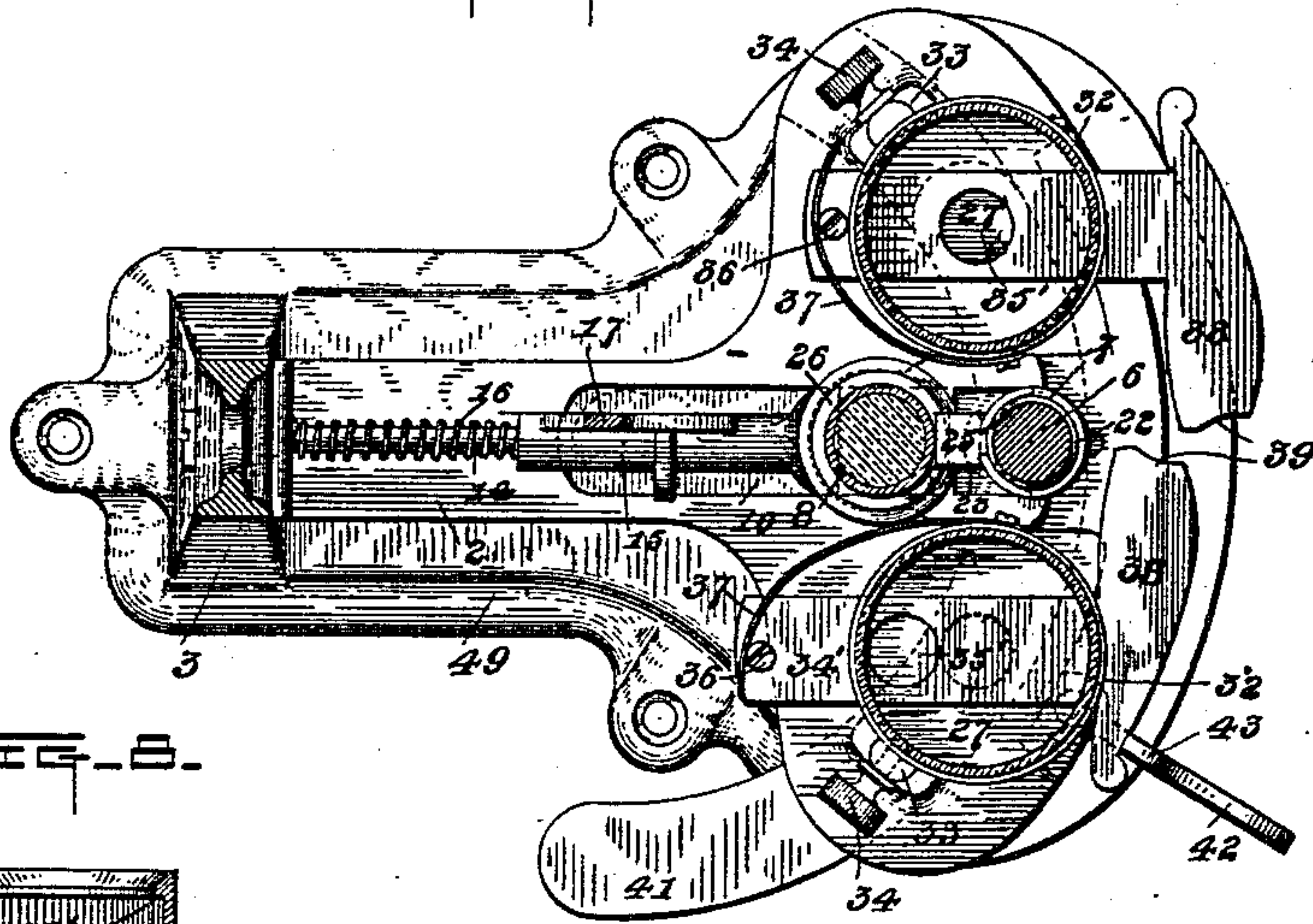


FIG-6-

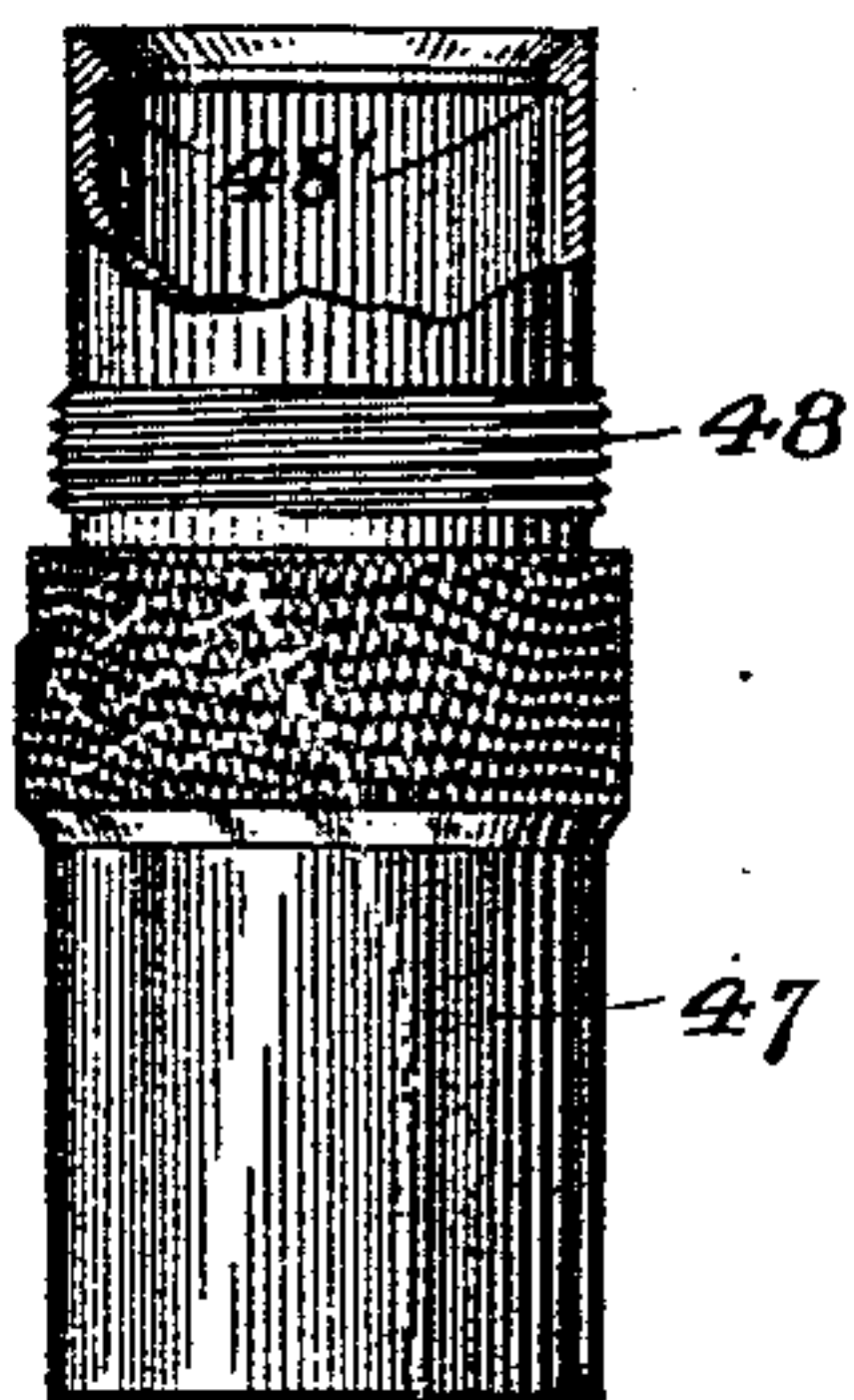
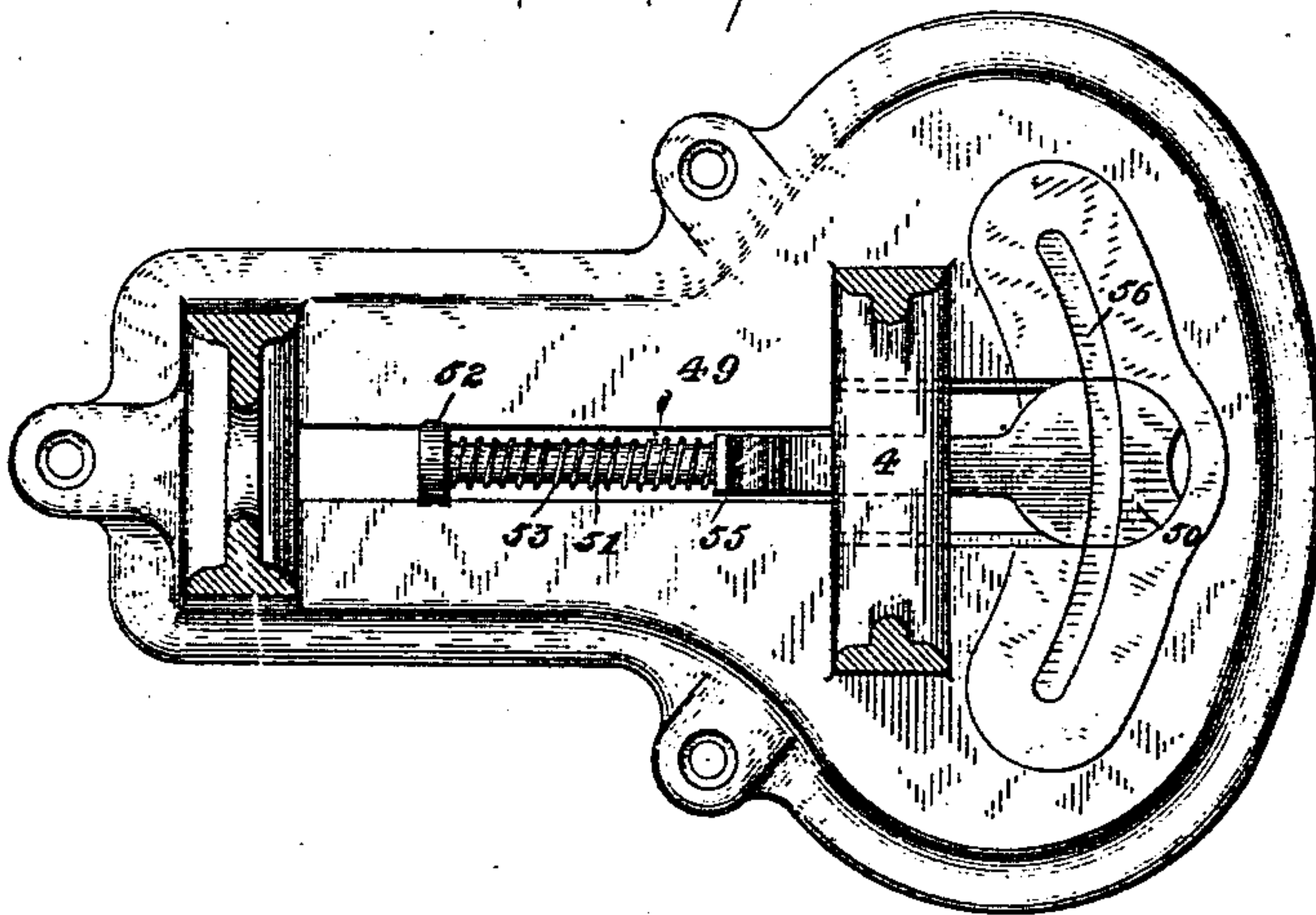


FIG-7-



Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD A. FRANKLIN, OF BRENHAM, TEXAS, ASSIGNOR TO BAILEY,
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CARTRIDGE-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 389,505, dated September 11, 1888.

Application filed January 30, 1888. Serial No. 262,355. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. FRANKLIN, of Brenham, in the county of Washington and State of Texas, have invented a new and useful
5 Improvement in Machines for Loading Cartridges; and I do hereby declare the following to be a full, clear, and exact description thereof.

My present invention relates to improvements on the machine for loading cartridges
10 which forms the subject-matter of Letters Patent No. 347,268, granted to me August 10, 1886.

To enable others skilled in the art to make and use my invention, I will now describe it by reference to the accompanying drawings, in
15 which—

Figure 1 is a side elevation of my improved machine. Fig. 2 is a plan view. Fig. 3 is a vertical section on the line A A of Fig. 2. Fig. 4 is a plan section on the line B B of Fig. 1. Fig.
2 5 is a vertical section of one of the chargers on the line C C of Fig. 2. Fig. 6 is a plan section on the line D D of Fig. 1. Fig. 7 is a plan section on the line E E of Fig. 3. Fig. 8 is a detached view of the cartridge-shell holder.
25 Fig. 9 is a detached view, on a different scale, of the wad-gage.

Like symbols of reference indicate like parts in each.

A suitable flat table-plate, 2, is mounted on
30 and connected with the standards 3 4, the rear standard, 3, extending up above the plane of the table-plate, to which standard the lever 5, which operates the plunger, is pivoted. The plunger 6 reciprocates vertically in a tubular
35 guide, 7, and is connected to the lever by a loose connection, which enables it to be moved in a right line by the lever. The wad-hopper 8 is situated directly in line with the lever 5 and is secured in a vertical position by means
40 of a screw-thread which engages with the female thread of the sleeve or wad-charger 9, which is secured to the table-plate.

Beneath the wad-charger 9 is a slot, 10, in the bed-plate 2, which slot acts as a guideway
45 for the wad as it is delivered from the bottom of the hopper. Owing to the screw-thread in the charger 9 and wad-hopper 8, the distance between the bottom of the wad-hopper and the bottom of the slot or guideway may be

regulated so as to accommodate different-sized
50 wads. This wad-hopper 8 is open at its upper end and is provided with a weight, 11, which presses on the wads, so as to deliver them from the hopper to the guideway.

On the surface of the table-plate back of the
55 wad-hopper is the wad-slide 12, which reciprocates in the guideway 10 and has its front end, 13, cut out in a semicircular form to fit the edges of the wads. Situate back of the
60 wad slide 12 is a rod, 14, which is fixed to the standard 3, and secured to the back of the wad-slide is a tubular guide-piece, 15, through
which the rod 14 passes, so that the guide-piece will slide on the rod 14, and situate be-
65 tween the guide-piece 15 and the standard 3 is a spiral spring, 16, which tends to keep the wad-slide and guide piece normally in a forward position. Extending from the guide-
70 piece 15 is the vertical arm 17, the front edge of which is curved or inclined and engages a friction-wheel, 18, which is secured at the end
of an arm, 19, which extends down from the
75 lever 5, so that when the lever 5 is depressed the friction-wheel, moving over the inclined edge of the arm 17, forces the slide 12 back,
and when the lever 5 is raised and the pressure of the friction-wheel is removed from the
80 arm 17 the slide is shot forward by the spiral spring 16. By these means whenever the lever 5 is depressed the guide-piece 15 and wad-
slide 12 are pushed back by the arm 19, so
85 that a wad drops from the hopper into the wadway 10, and when the lever 5 is raised the wad-slide is shot forward, carrying with it the wad to its position under the wad-plunger 6.
This wad-plunger 6, fitted in the guide-piece 7, as already stated, has at its head below the
90 lever 5 an enlargement, 21. Between this enlargement 21 and guide 7, around the plunger 6, is a spiral spring, 22, the purpose of which is to elevate the lever 5 after it has been de-
pressed. The front portion of the guide 7 is
95 cut away, as at 20, so as to allow wads to be inserted by hand into the cartridge-holder below the plunger, as where it is desired to insert a wad of a different thickness from those contained in the wad-hopper. Owing to the weight 11 the wads are pressed down in the

hopper, the lowest wad resting on the surface of the wad-slide 12, and when the slide 12 is carried back by the arm 19 the lowest wad is forced by the weight and wads above it into the wadway 10 in front of the slide, and when the slide is released by raising the lever 5 and arm 19 and shoots forward under the pressure of the spring 16 the wad is carried by the slide to a position directly below the plunger 6.

As already mentioned, the distance between the bottom of the wad-hopper 8 and the bottom of the wadway may be regulated to suit wads of different thicknesses; but it is also necessary that the wad-slide should be of the same thickness as the wad to be delivered, and for the purpose of regulating the thickness of the slide it is composed of two plates or leaves, 21' and 22', fitted together, so that the upper leaf may be removed and a thicker or thinner leaf put in its place.

Between the wad-hopper 8 and the guide 7 is a movable bridge-piece, 23, which forms the top of the wadway between the wad-hopper and the plunger. This piece is movable vertically and is provided with a vertical supporting-arm, 24, and a lateral arm, 25, at the end of which is a notch which engages with an annular ring, 26, on the wad-hopper 8, the effect of which is to raise or lower the bridge-piece with the wad-hopper. When the wads have all been fed from the hopper 8, the end of the weight 11 drops into the way 10 in front of the slide 12, and thereby locks the slide until the weight is removed in order to recharge the hopper.

On the table-plate 2, and on opposite sides of the guide 7, are two measuring-chargers, 27, for measuring the charges of powder and shot. These measures are composed of two tubes which telescope, the outer and lower tube, 29, being an extension from or attached to the table-plate and opening therethrough, while the inner and upper tube, 30, is an extension from the base of the powder or shot hopper 31, which is preferably composed of a glass cylinder having a metal base-piece, 32, through which the tube 30 opens. This hopper 31 is supported by means of a slotted bracket or vertical arm, 33, which extends from the table-plate at one side of the hopper, and a set-screw, 34, which passes through the slot and enters a threaded socket in the metal base-piece 32, so that when the tube 30 is inserted in the outer tube, 29, the powder or shot hopper may be fixed in a raised or lowered position, so as to increase or decrease the capacity of the charger. On the outer face of the base-piece are a number of index-lines, 35, which are arranged to register with the top of the arm 33 and denote the capacity in drams or ounces of the powder or shot charger.

Arranged in guides in the floor of the hopper 31 is a slide, 34', having an opening, 35', which when the slide is in its normal position registers with the opening into the charger 27. When, however, the slide is pushed back, it

closes the opening leading to the charger, so as to cut off communication between the charger and the hopper. The rear end of this slide extends through the rear side of the hopper, where it is provided with a projection or screw, 36, which engages with the free end of a curved bar-spring, 37, the other end of which spring is secured to the side of the hopper, so that the spring bearing against the projection on the slide holds it forward in its normal position. The front end of the slide projects beyond the front end of the hopper, where it is provided with a transverse plate, 38, having a curved or inclined front edge. At the inner side of the plates 38 the curved front edge is cut away, forming a locking-recess, 39, between the plate of the shot-hopper and the plate of the powder-hopper. This locking-recess is directly in front of the plunger 7.

Pivoted by means of a set-screw, 40, to the under side of the table-plate 2 is a flat plate, 41, which fits in a groove, 61, in the lower face of the plate 2 and has a projecting arm or handle, 42, extending from which is the vertical arm 43, which projects upward and when in a middle position is situated in the locking-recess 39 between the two plates 38 of the powder and shot hopper slides. This arm 43, together with the handle 42 and plate 41, oscillates in the arc of a circle struck from the pivot-screw 40 as a center, and as it moves from its middle or normal position to either side it bears against the cam-curved edge of one of the plates 38 and forces its slide 34 back against its spring 37 and closes the opening between the hopper and the charger. When the arm 43 is returned to its middle position, the slide is released and the spring 37 shoots it forward and opens communication between the hopper and charger. In order to release the arm 43 from the locking-recess, it is necessary to push the plate 38 in sufficiently to allow the arm 43 to pass the locking-shoulder on the corner of the plates.

In the table-plate 2, at the forward end of the wadway 10, directly under the plunger 7, is an annular opening, 44, and in the plate 41 is a similar opening, 45, which when the arm 43 is in its middle or normal position registers with the opening 44. Around the opening 45 on the lower face of the plate 41 a tubular socket, 46, is formed, the inner surface of which is provided with a female thread which receives the thread formed on the outer surface of the cartridge-shell holder 47. This cartridge-shell holder is a cylindrical tube shorter in length than the cartridge-shell, and is provided on its outer surface with a screw-thread, 48, which engages with the thread of the socket 46, and is so situated as to bring the mouth of the shell-holder flush with the surface of the wadway 10.

The bore or inside diameter of the shell-holder is of sufficient size to easily admit and hold a cartridge-shell of a certain gage, and the purpose of the screw-threads is to permit the removal of one shell-holder and the sub-

stitution of another having a bore of a greater or less diameter to accommodate larger or smaller gage shells. At the mouth of the shell-holder 47 around the bore is an annular offset, 48', in width about the thickness of the shell, the purpose of which offset is to afford a shield to the edge of the shell and a guide to direct the passage of the wad into the same. When this cartridge-shell holder and the arm 43 are in their middle position, the shell-holder registers with the opening 44 directly under the plunger-guide 7, and when the arm 43 is moved to either of the side positions the shell-holder registers with either the powder or shot charger, while at the same time the other charger and the opening 44 are closed by the face of the plate 41. By this means only one of the three openings in the plate 2 is open at one time, which is when the shell-holder is brought under the same.

Below the table-plate 2 is the bed-plate 49, which is adapted to be secured to a table or support so that the forward portion of the plate shall extend beyond the same to permit of the insertion of a cartridge-shell into the shell-holder. This is done through an opening in the plate 49, situate directly below the opening 44 in the plate 2, and this opening is normally closed by a slide, 50, which is situate at the end of a rod, 51, which rod is movably fitted in brackets 52 on the plate 49 and is provided with a spiral spring, 53, which keeps the slide normally closed in the opening in the plate 49. On the under face of the slide 50 is a thumb-piece, 54, by means of which the slide may be pushed back, and the same result may be produced by means of the thumb-piece 55 on the rod 51. In the upper face of the slide 50 and extending in the face of the plate 49 is a groove, 56, which follows the course of the arc of a circle described by the shell-holder in its movement. The purpose of this groove is to prevent the primer of the shell from coming in contact with the slide 50 or the plate 49.

Thus constructed, the operation of my improved machine is as follows: The wad-hopper 8 being filled with wads and the weight 11 being placed thereon, and the hoppers 31 being filled with powder and shot, the amount of the charge is regulated as desired by the set-screws 34, and the wad-hopper is adjusted to the thickness of wads with which the hopper is filled by turning the hopper in the threaded socket 9. A cartridge-shell is then placed in the shell-holder 47 by pushing back the slide 50 and inserting the shell up through the opening in the plate 49 into the holder, and the slide is then allowed to spring back, so as to close the opening, and the head of the shell is permitted to rest on the upper face of the slide. The powder-slide 34' is then pressed in sufficiently to free the arm 43 from the locking-recess 39, and the arm 43 is brought in front of the powder hopper, which presses in the powder-slide, so as to close communication between the powder hopper and charger, while

at the same time the shell-holder is brought directly under the lower mouth of the powder-charger, which allows the powder to fall from the charger into the shell. The arm 43 is then brought back to its middle position, where it is locked between the plates of the powder and shot slides, and at the same time the lower mouth of the powder-charger is closed by the plate 41 as soon as the mouth of the shell-holder passes from beneath the charger, and when the arm 43 reaches the middle position and releases the plate of the slide the slide snaps back to its normal position, again opening communication between the powder hopper and charger, which allows a charge of powder to fall into the charger ready for the next shell to be loaded. A wad being in position in the wadway 10, directly under the wad-plunger and over the cartridge-shell, the wad being held in position by the spring wad-slide which presses on one edge of the wad, while the opposite edge bears against the forward edge of the wadway or opening in the plate 2, the lever 5 is depressed, which causes the plunger 6 to descend and force the wad down into the shell on top of the powder. At the same time the friction-roller 18, bearing against the curved arm 17, forces back the wad-slide, which permits the bottom wad in the wad-hopper to drop into the wadway in front of the slide, which, when the lever 5 is raised and the plunger is withdrawn from the cartridge-shell to a position above the wadway, is carried by the spring wad-slide into position below the plunger. The lever 5 may then be a second time depressed, so as to place a second wad on top of the powder in the shell. The arm 43 is then released from the locking-recess and the cartridge-shell is brought to the shot-charger and receives its charge of shot in the same manner as the powder-charge already described. The cartridge-shell is then again brought under the plunger and a wad is placed on top of the shot in the manner described, after which the sliding plate 50 is pushed back. The loaded shell is allowed to drop out of the shell-holder.

When it is desired to load cartridge-shells of a smaller gage than No. 10, it is desirable to lessen the size of the opening at the forward end of the wadway, so as to center the wad directly over the shell, and this is done by inserting the yoke-piece 58 in the opening 44, an arm, 59, on the yoke-piece fitting in a slot in the plate 2, so as to retain the yoke in its proper position.

In order to keep the flat plate 41 closely against the under face of the table-plate 2, an arm, 60, extends from the arm 43 over the upper face of the plate 2, and fitting in this arm 60 is a set-screw, 62, arranged to bear on the face of the plate 2 and hold the plate 41 closely against the lower face of the same.

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

1. In a cartridge-shell loader, the ammuni-

tion chargers and hoppers, the wad-hopper, and a spring shot-slide for said wad-hopper, having a cam on its upper surface, combined with a wad-plunger having a spring which normally elevates it, and a lever pivotally connected to the plunger and having a tappet to engage the cam on the slide to retract it, substantially as described.

2. In a cartridge-shell loader, the combination of a table-plate having a wadway formed therein, a wad-hopper adjustably secured above the wadway, a fixed guide-rod situated in the rear of the wadway, a spiral spring surrounding said rod, a feeding-slide situated within the wadway, and a guide-tube secured to the slide and fitting on the guide-rod, substantially as and for the purposes specified.

3. In a cartridge shell loader, the combination of a wad-hopper, 8, provided with a screw-thread, a threaded socket, 9, a wadway, 10, and a movable bridge-piece loosely connected with the wad-hopper and situated between the wad-hopper and the plunger-support, substantially as and for the purpose specified.

4. In a cartridge-shell loader, the combination of powder and shot hoppers 31, slides 34', having inclined cam-faces, and recesses 39, forming a locking-recess, and an oscillating arm, 43, engaging with the locking-recess, substantially as and for the purpose specified.

5. In a cartridge-shell loader, a wad-plunger and a lever to operate it having a depending arm or tappet, in combination with a table-plate having a wadway formed therein, a wad-hopper adjustably secured above the wadway, a fixed guide-rod situated in rear of the wadway, a spiral spring encircling said rod, a feed-

slide situated within the wadway and provided with a cam engaged by the aforesaid tappet, and a guide-tube on the slide fitting on the guide-rod, substantially as and for the purposes described.

6. In a cartridge-shell loader, the table-plate having a wadway, 10, terminating in an opening, 44, in combination with a shell-holder removably secured to the table-plate, and the removable yoke 58, provided with an arm, 59, and thereby fitted in the opening 44 of the wadway to vary the diameter of the opening commensurately with the size or gage of shell to be filled, substantially as and for the purposes described.

7. In a cartridge-shell loader, the combination of a table-plate having powder and shot hoppers and apertures, an oscillating plate situated below the table plate and provided with a shell-holder, and a set-screw for retaining the oscillating plate closely against the face of the table-plate, substantially as and for the purpose specified.

8. In a cartridge-shell loader, the combination of a plate, 2, a wadway, 10, and an oscillating plate, 41, having a shell-holder and fitting in a recess in the bottom of the plate 2, so that the top of the shell-holder shall be flush with the bottom of the wadway, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand this 6th day of December, A. D. 1887.

EDWARD A. FRANKLIN.

Witnesses:

W. B. CORWIN,
JNO. K. SMITH.