

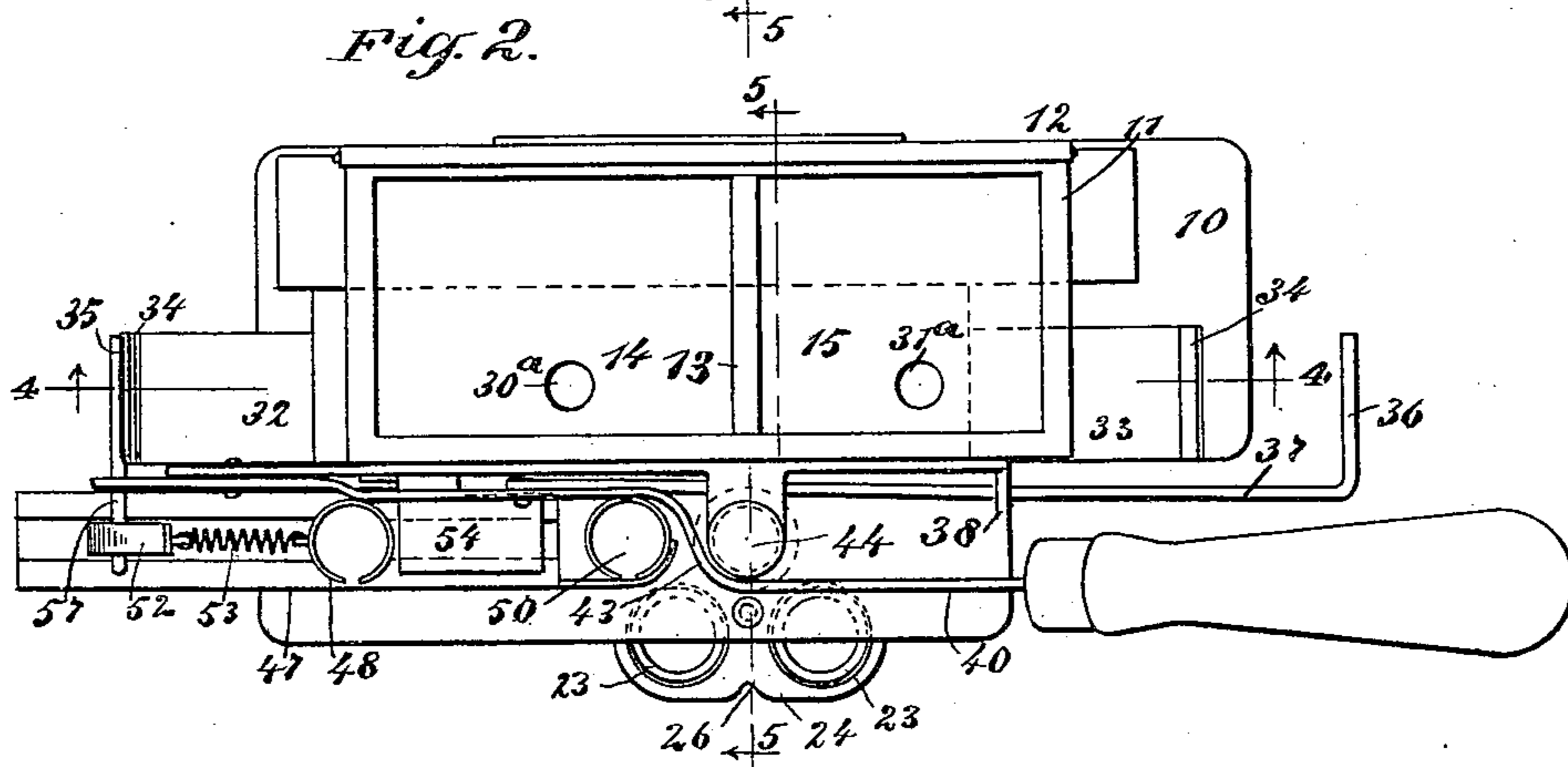
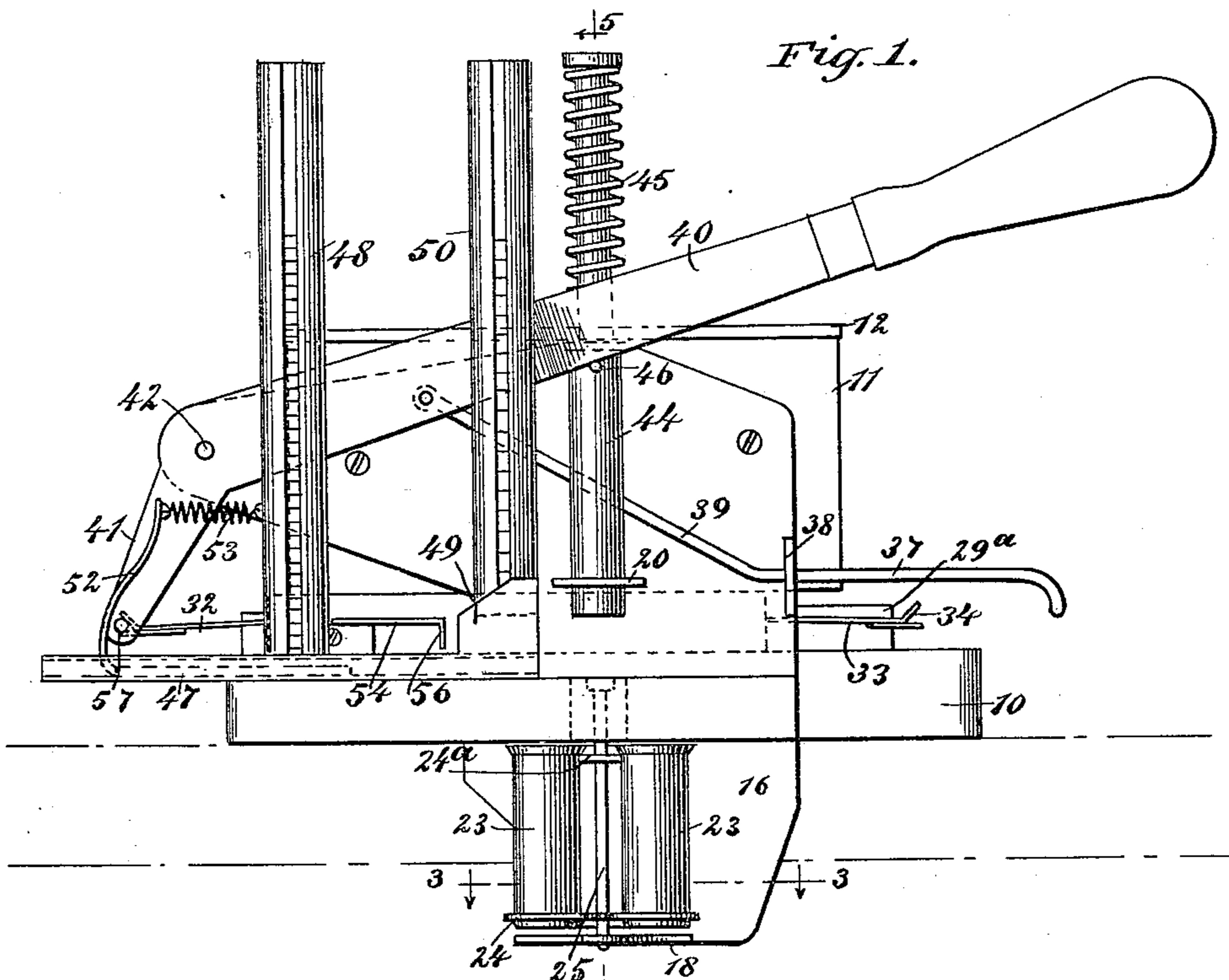
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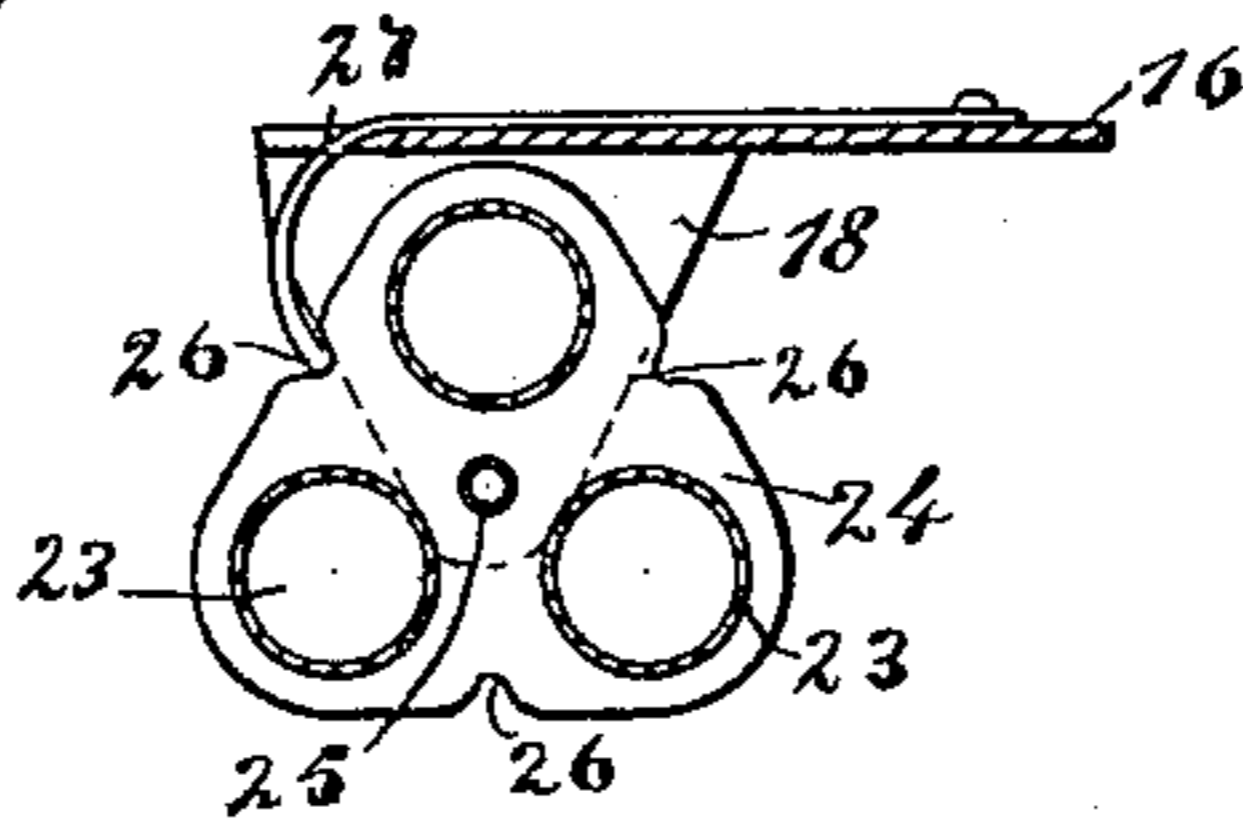
W. E. PHILLIPS.  
CARTRIDGE LOADING MACHINE.

No. 461,273

Patented Oct. 13, 1891.



*Fig. 3.*



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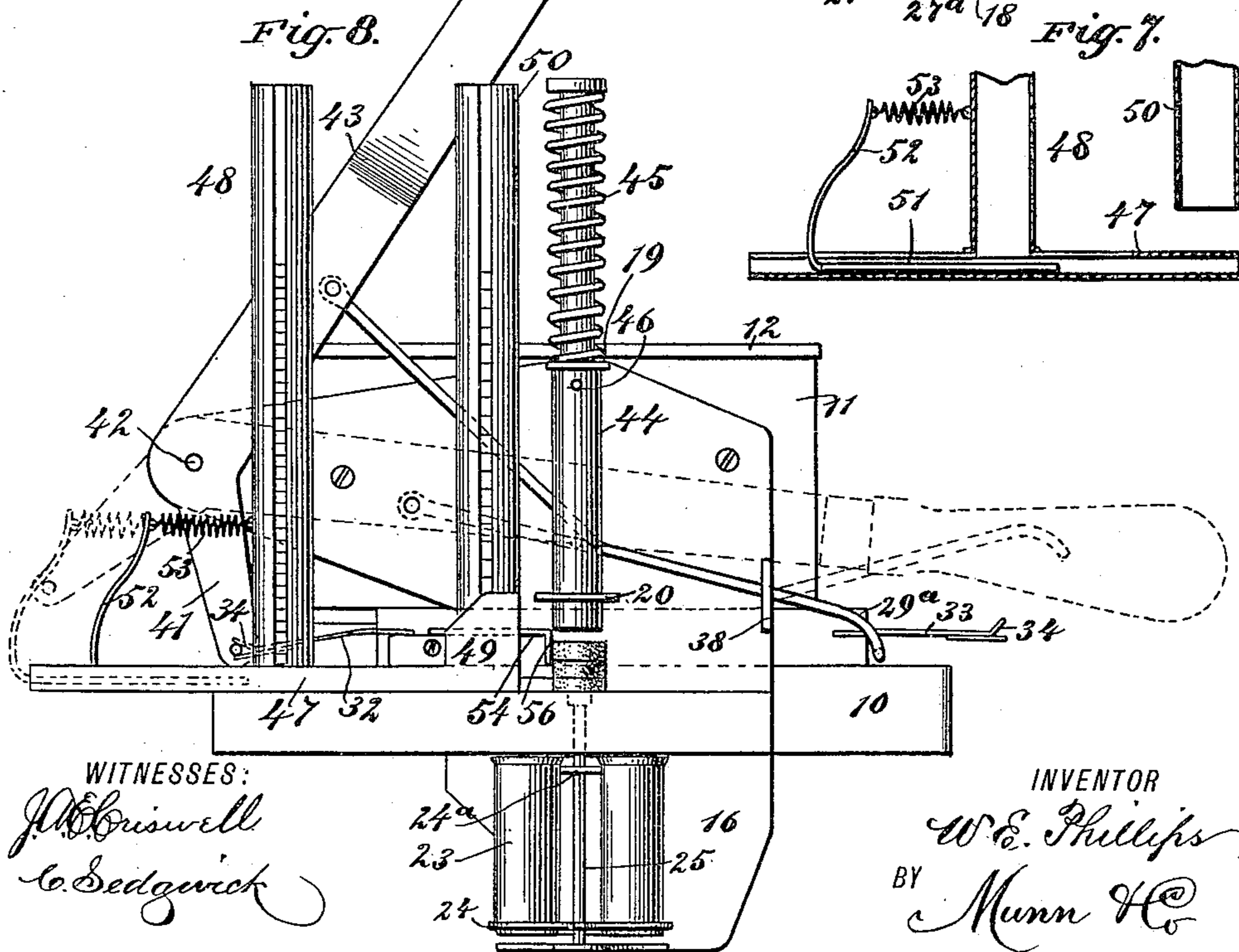
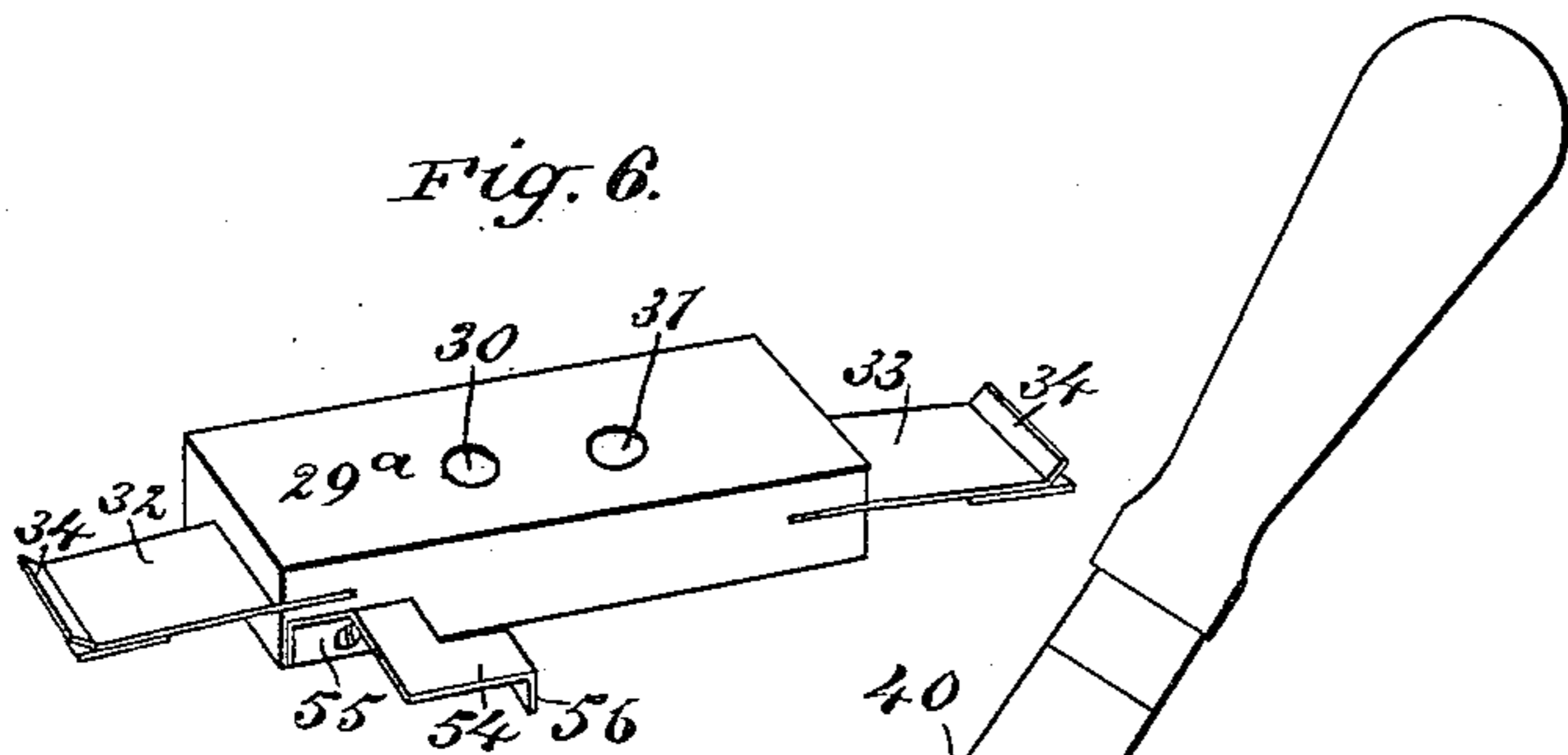
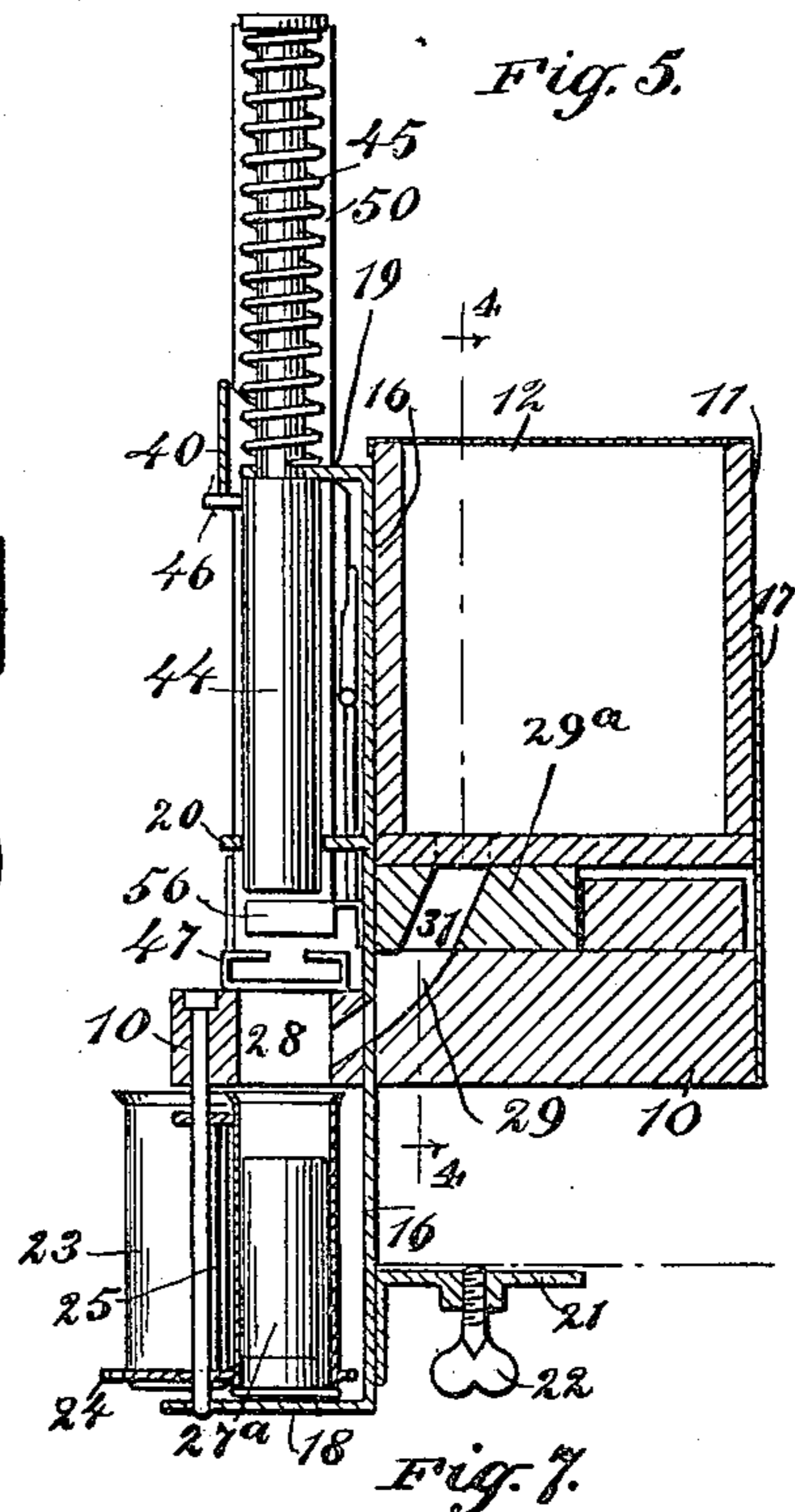
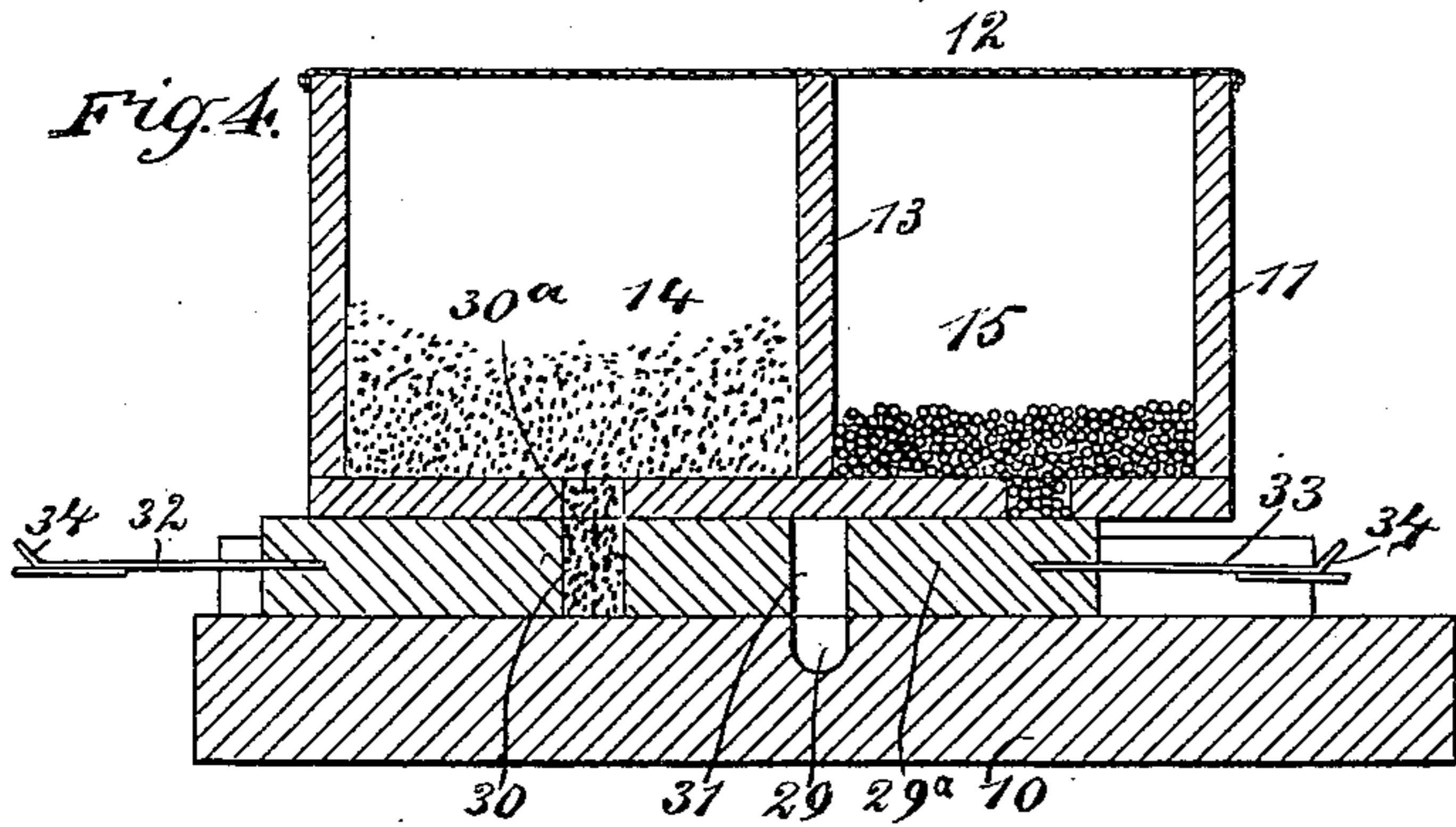
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

WILLIS E. PHILLIPS, OF SAGUACHE, COLORADO.

## CARTRIDGE-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 461,273, dated October 13, 1891.

Application filed May 19, 1891. Serial No. 393,283. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIS E. PHILLIPS, of Saguache, in the county of Saguache and State of Colorado, have invented a new and Improved Cartridge-Loading Machine, of which the following is a full, clear, and exact description.

My invention relates to improvements in cartridge-loading machines; and the object of my invention is to produce a simple machine which may be easily and rapidly operated, and which will automatically deliver a required charge of powder and shot into a shell and also insert the wads between the powder and shot and over the shot.

To this end my invention consists in a cartridge-loading machine, which will be hereinafter described and claimed.

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

Figure 1 is a front elevation of the machine, showing the operating-lever in its normal position. Fig. 2 is a plan view of the machine. Fig. 3 is a sectional plan of the cartridge-holder on the line 3 3 of Fig. 1. Fig. 4 is a longitudinal vertical section on the line 4 4 of Figs. 2 and 5. Fig. 5 is a vertical cross-section on the line 5 5 of Figs. 1 and 2. Fig. 6 is a detail perspective view of the slide which delivers the ammunition to the cartridge-shells. Fig. 7 is a detail sectional view showing the relative positions of the wad-holding tubes and the chute and follower for delivering the thin wads, and Fig. 8 is a front elevation of the machine with the lever raised.

The machine is provided with a horizontal body 10, which has upon the top an ammunition-box 11, the box having a suitable cover 12, and the box is divided by a transverse partition 13 (see Figs. 2 and 4) into two compartments 14 and 15, which are adapted to hold powder and shot, respectively. The box 11 is supported by the front and rear plates 16 and 17, which are secured to the sides of the box and to the sides of the body 10. The front plate 16 extends downward through a portion of the body 10, is bent horizontally at its lower end, as shown at 18, to form a support for the cartridge-holder, and is pro-

vided at a point near the upper and lower portion of the box 11 with projecting brackets 19 and 20, (see Figs. 1, 5, and 8,) which serve as a support for the plunger, which is adapted to force the wads into the cartridge-shells in the manner hereinafter described. On the rear of the plate 16 and near the lower end of it is a rearwardly-extending bracket 21, which is arranged parallel with the body 10, and in which is a thumb-screw 22. It will thus be seen that the body 10 may be placed upon a counter or board, and that the bracket 21 is slipped beneath the same, and the machine may be secured in place by tightening the thumb-screw 22.

The cartridge-holder comprises a series of tubes 23, which are united at the bottom by a triangular plate 24, (best shown in Fig. 3,) and which are united at the top by a connecting-plate 24<sup>a</sup>. (See Figs. 1 and 8.) These tubes 23 are adapted to hold the shells to be filled, and in the drawings there are three of them; but it is obvious that a greater or less number may be provided. The plate 24 is provided on each side with a notch 26, which is engaged by a spring 27, which curves forward from the rear of the plate 16, and the spring serves as a catch and holds the cartridge-holder in position for a shell to be filled.

The cartridge-holder is pivoted on a pin 25, which extends vertically through the front portion of the body 10 and into the bent end 18 of the plate 16. The pin 25 is arranged near the outer end of the support 18, and two of the tubes 23 will thus be brought beyond the end of the support, so that the cartridge-shells 27<sup>a</sup> may be easily pushed into them, and it will thus be seen that one tube will be in position to hold a shell for loading and that the other tubes are provided for the insertion and removal of the other shells, and by revolving the holder the shells may be rapidly inserted and removed.

A hole 28 extends vertically through the front portion of the body 10 and aligns with the tube 23, which is brought beneath the body, and a channel 29 extends diagonally upward from the rear portion of the hole 28 and terminates at the top of the body 10. (See Fig. 5.) This channel aligns with the holes 30 and 31 in a slide 29<sup>a</sup>, which slide is held to move longitudinally beneath the ammunition-

box, and the holes 30 and 31 are adapted to be brought beneath the corresponding holes 30<sup>a</sup> and 31<sup>a</sup> in the powder and shot compartments 14 and 15 of the ammunition-box. The slide 29<sup>a</sup> is thick enough and the holes 30 and 31 are large enough, so that they will hold a suitable charge for a shell, and these holes are adapted to be brought opposite the upper end of the channel 29, so that the ammunition will be delivered through the channel and through the hole 28 into one of the cartridge-shells 27<sup>a</sup>. This will be clearly seen by reference to Figs. 4 and 5.

The slide 29<sup>a</sup> is provided at one end with a projecting spring-arm 32 and at the opposite end with a similar arm 33, both of which arms terminate at the free ends in forks 34, and the forks are adapted to engage the studs 35 and 36, as best shown in Fig. 2, so that by means of the studs the slide will be moved backward and forward. The stud 36 is formed by bending laterally the free end of a rod 37, which rod extends in a nearly-horizontal position through a guide 38, which is produced on the front of the plate 16, and from thence the rod extends upward, as shown at 39, and is pivoted to the operating-lever 40. This lever has a bent lower end 41, and is pivoted near the lower end, as shown at 42. The stud 35 extends laterally from the lower end of the lever, as best shown in Fig. 2, and it will be seen that by raising the lever once the stud 35 will engage a fork 34 and push the slide 29<sup>a</sup> to one end of the machine, and that by again raising the lever the stud 36 will engage the opposite fork 34 and push the slide back to its original position. The lever 40 has an outward bend near the center, as shown at 43, to enable it to pass the plunger 44, and also to enable it to engage a projecting stud 46 on the front side of the plunger. (See Figs. 1, 5, and 8.) This plunger 44 is intended to ram home the wads in the cartridge-shells, and it is held to slide vertically in the brackets 19 and 20 on the front of the plate 16. It is normally held upward by a spiral spring 45, which is coiled around the upper end of the plunger, and is held between the bracket 19 and a button on the top end of the plunger. It will thus be seen that when the lever 40 is depressed it will strike against the stud 46 and will force the plunger downward, and as the plunger aligns vertically with the hole 28 in the body 10 of the machine it will pass downward through said hole and enter one of the shells in the cartridge-holder.

A chute 47 extends longitudinally along the front edge of the body 10 and on one side of the hole 28, said chute being of a size to carry a thin wad and of a thickness to prevent the wads from riding one upon the other. A tube 48 extends vertically from the chute 47, into which it delivers, and this tube is adapted to carry thin wads.

At the end nearest the plunger the chute 47 is provided on the outside with a vertical flange or guard 49, (see Figs. 1 and 8,) to

which is secured another vertical tube 50, which is adapted to carry thick wads, and this tube is held high enough above the top of the chute 47 so that two wads may rest between the bottom of the tube and the top of the chute. The wads in the chute 47 are moved forward by a follower 51, (best shown in Fig. 7,) which is held to slide in the chute and which has an arm 52 at its rear end, and this arm is curved upward and is connected by a spring 53 with the tube 48, although it may be secured to any convenient support, and the spring normally presses the follower forward.

The follower, which is adapted to push the thick wads from beneath the tube 50, is secured to one side of the slide 29<sup>a</sup>, and consists of a metal strip 54, (see Fig. 6,) which has at its inner end a flange 55, by means of which it is secured to the slide, and which on one edge is bent downward, as shown at 56, and this bent end serves to push the thick wads from the chute 47 and into the hole 28. The follower 51 is retracted by a stud 57, which extends from the lower bent end of the lever 40, and which is adapted to strike against one side of the arm 52, as clearly shown in Fig. 2. This stud may be formed integral with the stud 35, if desired.

The operation of the machine is as follows: The lever is worked several times, so as to enable the thin wads held in the tube 48 to pass downward into the chute 47 and forward to the end of the chute, and then the shells 27<sup>a</sup> are inserted in the cartridge-holder, and the latter is revolved so as to bring a shell beneath the hole 28 in the front of the body. The lever 40 is then raised and the upward movement of the lever throws forward the lower end of the same, and the stud 35, striking the fork 34 of the arm 32, pushes the slide 29<sup>a</sup> forward and thus carries the hole 30 in the slide 29<sup>a</sup>, which is filled with powder from the compartment 14, above the channel 29, and the powder flows through the channel into the hole 28 and from thence into the shell 27<sup>a</sup>. The forward movement of the slide 29<sup>a</sup> carries the plate 54 with it, and the bent end 56 of the latter pushes two of the thick wads from the chute 47 and delivers them into the hole 28 and upon a thin wad which has already been delivered in the hole, as will appear below. The lever is then depressed, thus ramming the wads down through the hole into the cartridge-shell. This downward movement of the lever throws back the lower end of the same, and the stud 57, striking the arm 52, draws back the follower 51 and allows another thin wad to drop from the tube 48 into the chute 47. The lever is again raised, and this movement causes the stud 36 to strike the fork 34 of the arm 33, thus pushing the slide 29<sup>a</sup> back to its original position and bringing the hole 31 above the channel 29, so that a charge of shot with which the hole has been filled will be delivered into the channel and from thence into the cartridge-shell.

While this movement has been taking place the follower 51 will have again advanced and placed a thin wad in the upper portion of the hole 28, where it is held by the pressure of the follower-spring, and when the lever is again depressed this wad is rammed down upon the shot. It will thus be seen that the cartridge is completely loaded at two strokes of the lever. It will be observed that the follower 51 operates at every stroke of the lever, and consequently a thin wad will be delivered into the hole 28 at every stroke, so that there will be one thin wad and two thick wads upon the powder and only a thin wad upon the shot, as the follower, formed of the strip 54 and bent end 56, only moves at every alternate stroke of the lever.

It will be seen by reference to Fig. 8, in which the different positions of the parts are shown in dotted lines, that the studs 35 and 36 are carried in the arc of a circle, and consequently they will alternately pass beneath the spring-arms 32 and 33—that is to say, when the slide 29<sup>a</sup> is in position to receive powder from the compartment 14 and the lever is raised, the stud 35 will engage the fork 34 of the arm 32; but the stud 36 will swing beneath the arm 33, as the arm will be pulled forward out of the way of the stud at the beginning of the forward movement of the latter, and when the slide is at the opposite limit of its stroke the arrangement will be reversed, and when the lever is raised the stud 35 will pass beneath the arm 33. After the stud 35 or 36 has engaged one of the forks of the arm the springiness of the metals composing the arms will cause them to conform to the movement of the studs.

It will readily be seen that the wad-tubes may be arranged so as to deliver any desired number of wads, the number depending on the thickness of the chute 47 and on the distance which the lower end of the tube 50 is elevated above the chute.

From the foregoing description it will be seen that the cartridges are automatically loaded, and as the cartridge-holder provides for the rapid insertion and removal of the cartridges it will be seen that they may be loaded very rapidly.

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

1. A cartridge-loading machine comprising a body carrying a two-part ammunition-box with a hole in the bottom of each compartment, a slide held to move beneath the box and provided with holes to receive the ammunition, spring-arms extending from the ends of the slides and terminating in forks, a cartridge-holder arranged in front of the box and a little below the same, a channel leading from the slide to the cartridge-holder, a spring-pressed plunger arranged above the cartridge-holder, a lever for operating the plunger, and studs connected with the lever

and adapted to engage the forked ends of the slide-arms, substantially as described.

2. A cartridge-loading machine comprising a body carrying a two-part ammunition-box, each compartment of which has a hole in the bottom, a slide held to move beneath the box and provided with holes to receive the ammunition, a cartridge-holder arranged below and in front of the box, a channel leading from the slide to the cartridge-holder, a lever-operated plunger arranged above the cartridge-holder, means for moving the slide by the operation of the lever, and a wad-feeding device arranged to supply wads to the cartridge-shells at each stroke of the lever, substantially as described.

3. A cartridge-loading machine comprising a perforated body carrying a two-part ammunition-box, each compartment of which has a hole in its bottom, an apertured slide beneath the box, a cartridge-holder arranged beneath the body, a plunger held to move vertically above the cartridge-holder, a lever for operating the plunger, a chute supported upon the body and arranged to deliver into the cartridge-holder, a spring-pressed follower arranged in the chute, a wad-tube mounted upon the chute so as to deliver into it, and a lever for operating the follower-slide and plunger, substantially as described.

4. A cartridge-loading machine comprising a perforated body carrying a two-part ammunition-box, each compartment of which has a hole in its bottom, an apertured slide beneath the box, a cartridge-holder arranged beneath the body, a chute held upon the top of the body and arranged to deliver into the perforation, a wad-tube to deliver into the chute, a spring-pressed follower mounted in the chute and provided with an upwardly-extending arm, a plunger mounted vertically above the cartridge-holder, a lever to operate the plunger and slide, said lever having a bent lower end, and a stud projecting from the lower end of the lever to contact with the follower-arm, substantially as described.

5. A cartridge-loading machine comprising a perforated body, a cartridge-holder arranged beneath a perforation in the body, a vertically-movable plunger mounted above the perforation, a wad-chute mounted upon the body to deliver into the perforation, a wad-tube arranged to deliver into the chute, a wad-tube arranged to deliver upon the chute, a spring-pressed follower mounted within the chute, a follower arranged to move above the chute, a lever for operating the plunger, and means for moving the followers by the movement of the lever, substantially as described.

6. In a cartridge-loading machine, the combination, with a body and a vertically-reciprocating plunger, of a cartridge-holder on the under side of the body and consisting of a notched plate mounted on a pin, a series of tubes secured to said plate and connected together at the top, and a spring engaging the

notches of the plate to hold the holder in position, substantially as described.

7. In a cartridge-loading machine, the combination, with a box having compartments  
5 and an apertured slide below the same, of an operating-lever and means carried by the lever for alternately engaging opposite ends of the slide to operate it as the lever is operated, substantially as described.

10 8. In a cartridge-loading machine, the combination, with a box having compartments, a plunger adjacent to the box, and a slide below the box, of an operating-lever, means carried by the lever for alternately engaging the  
15 opposite ends of the slide to operate it, and a

pin on the plunger with which the lever engages to operate it, substantially as described.

9. In a cartridge-loading machine, the combination, with a slide having forks projecting from its ends, of a pivoted lever, a stud projecting from one end of the lever and adapted to engage one of the forks of the slide, and a rod pivoted to the lever and having its free end bent to engage the other fork of the slide, substantially as herein shown and described. 25

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Witnesses:

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