

No. 622,443.

Patented Apr. 4, 1899.

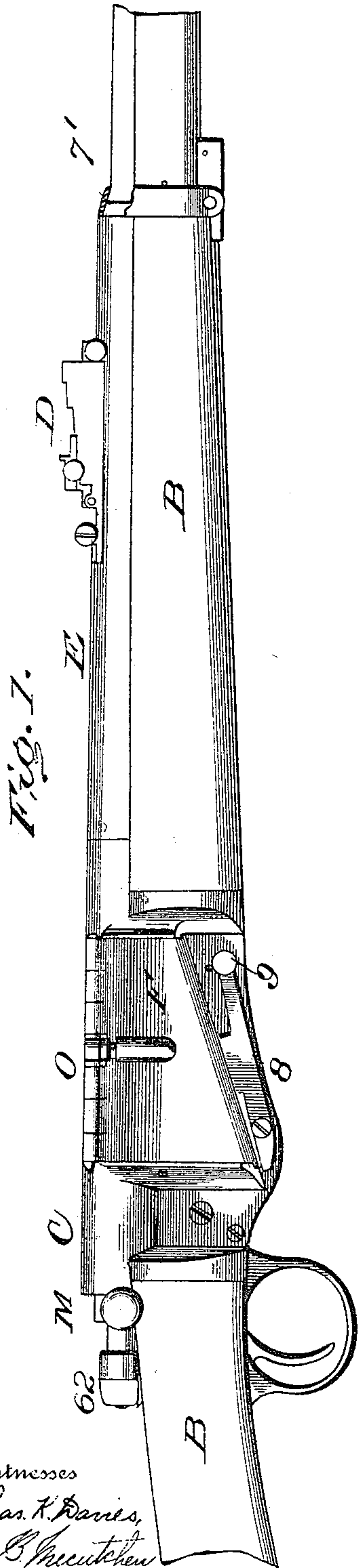
B. BURTON.

MAGAZINE BOLT GUN.

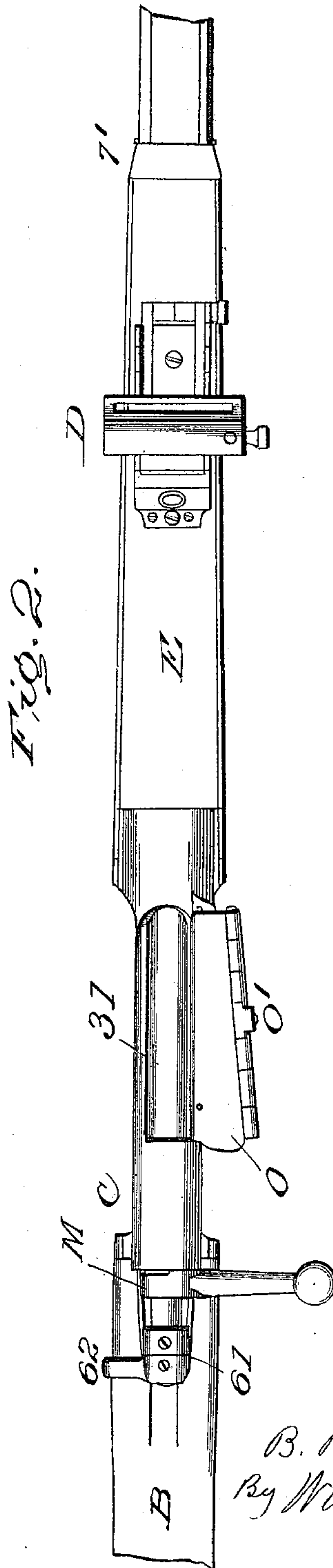
(Application filed Nov. 10, 1897.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses
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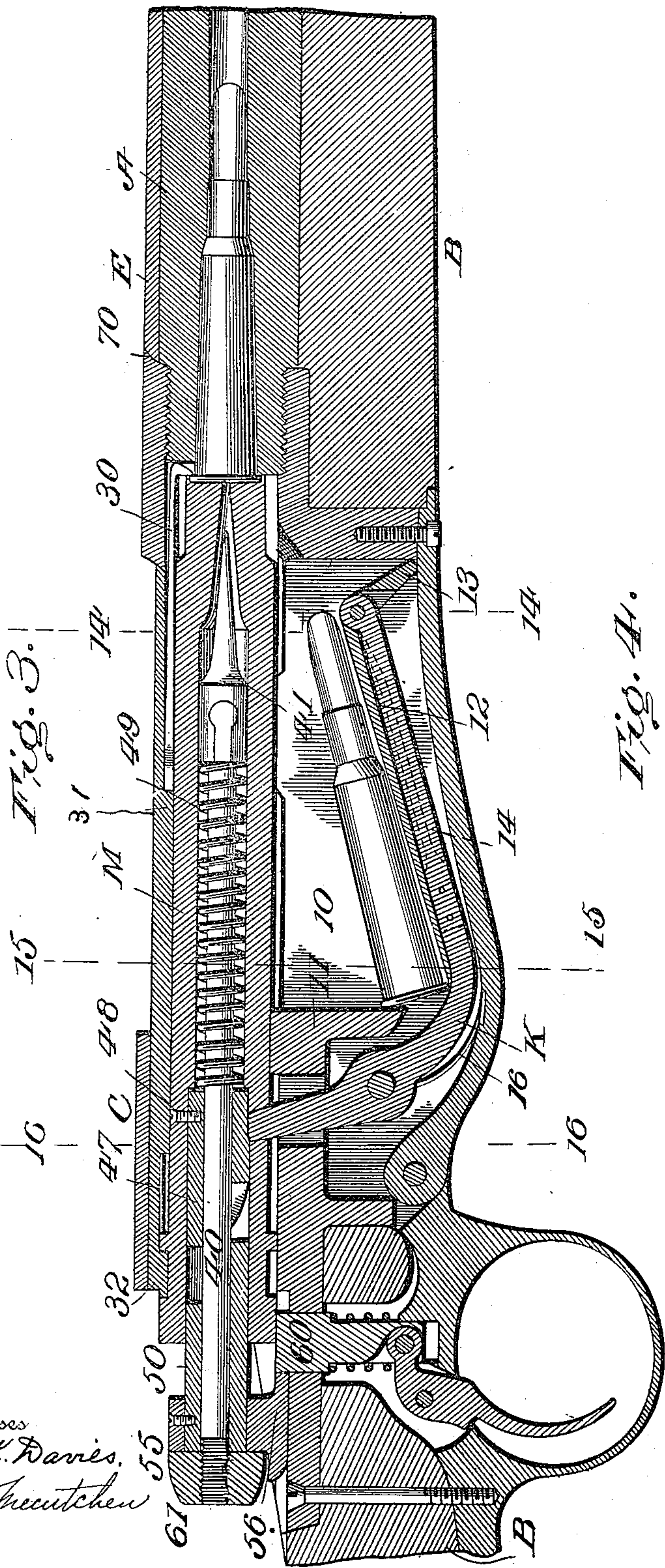
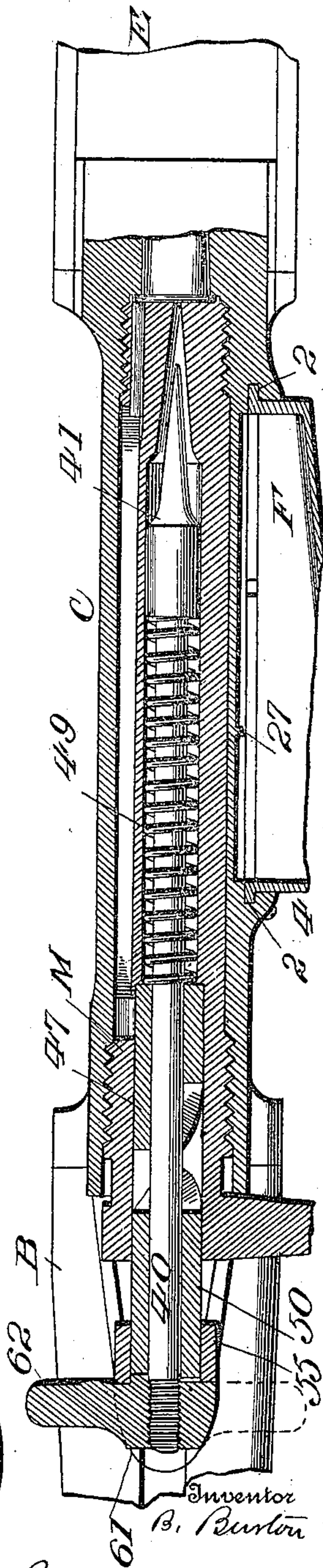


Fig. 4.



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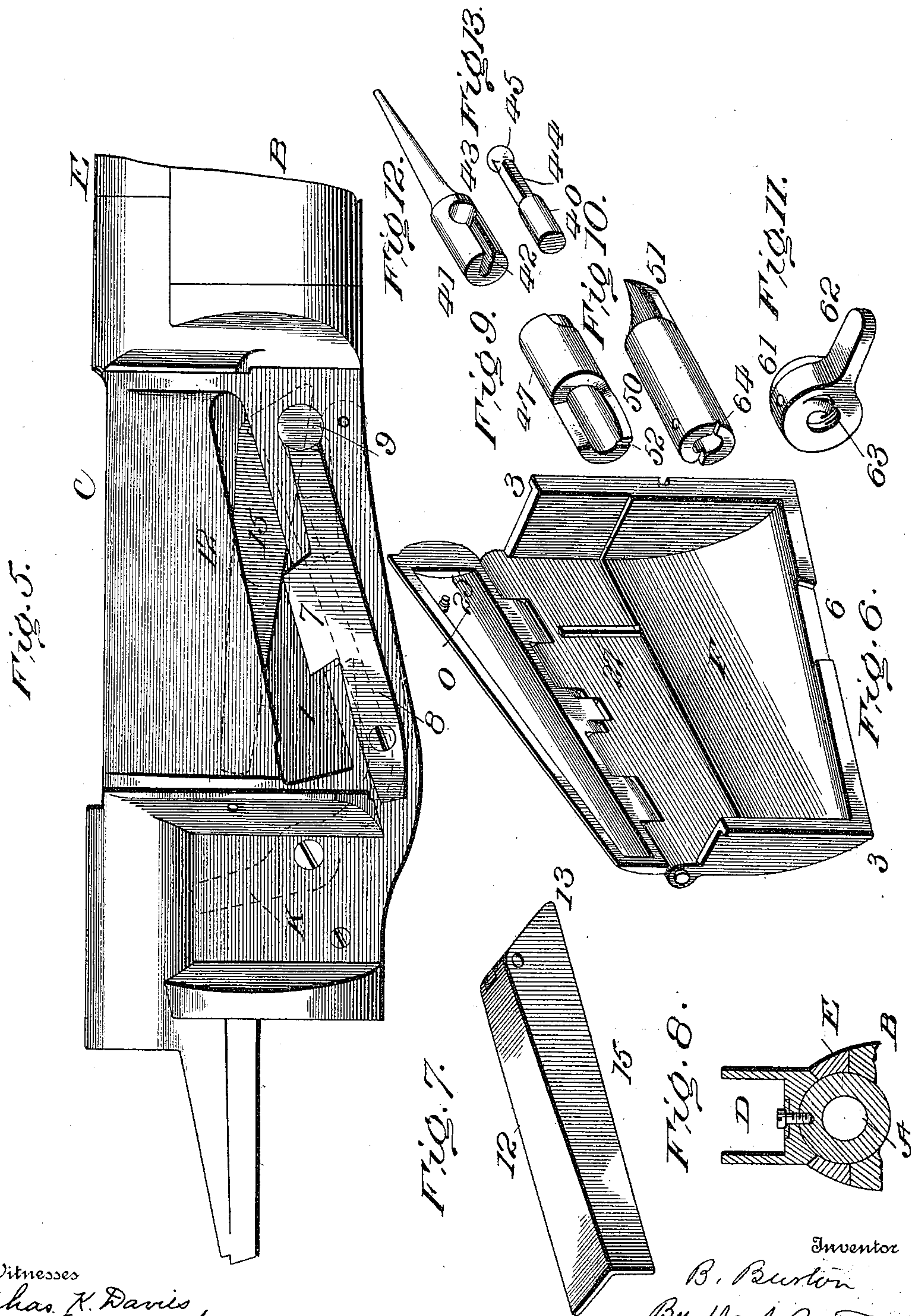
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Fig. 14.

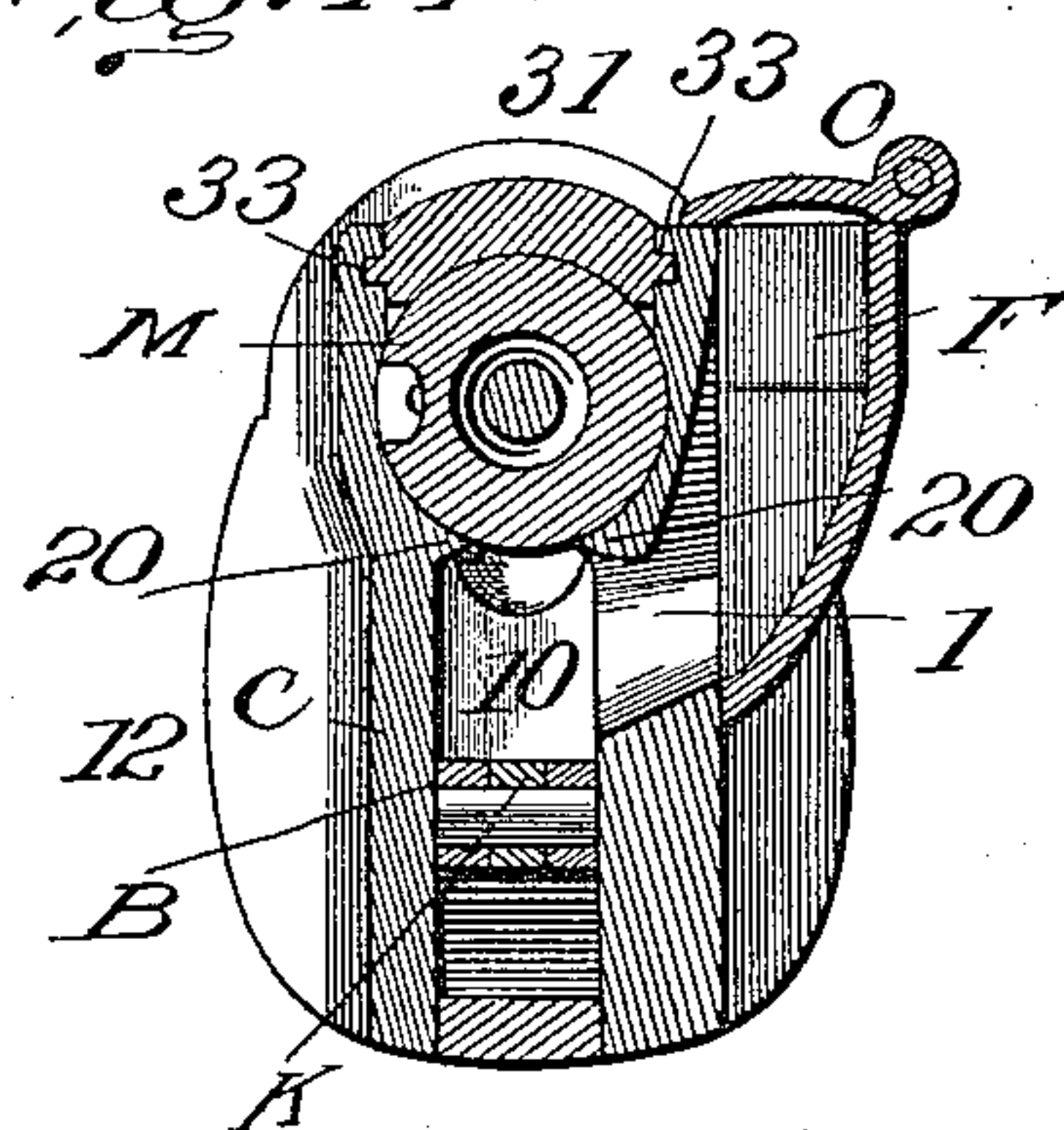


Fig. 15

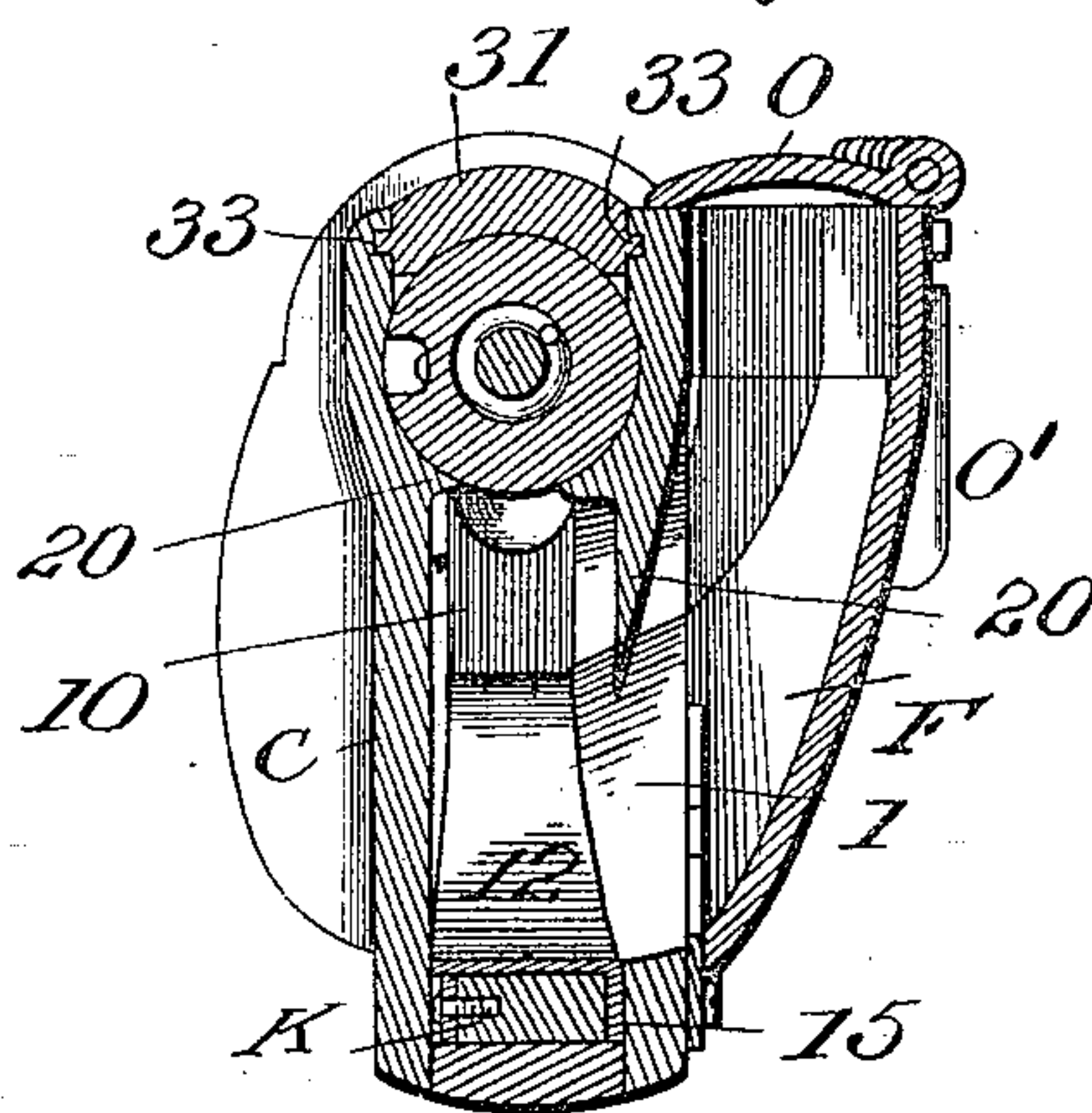


Fig. 16.

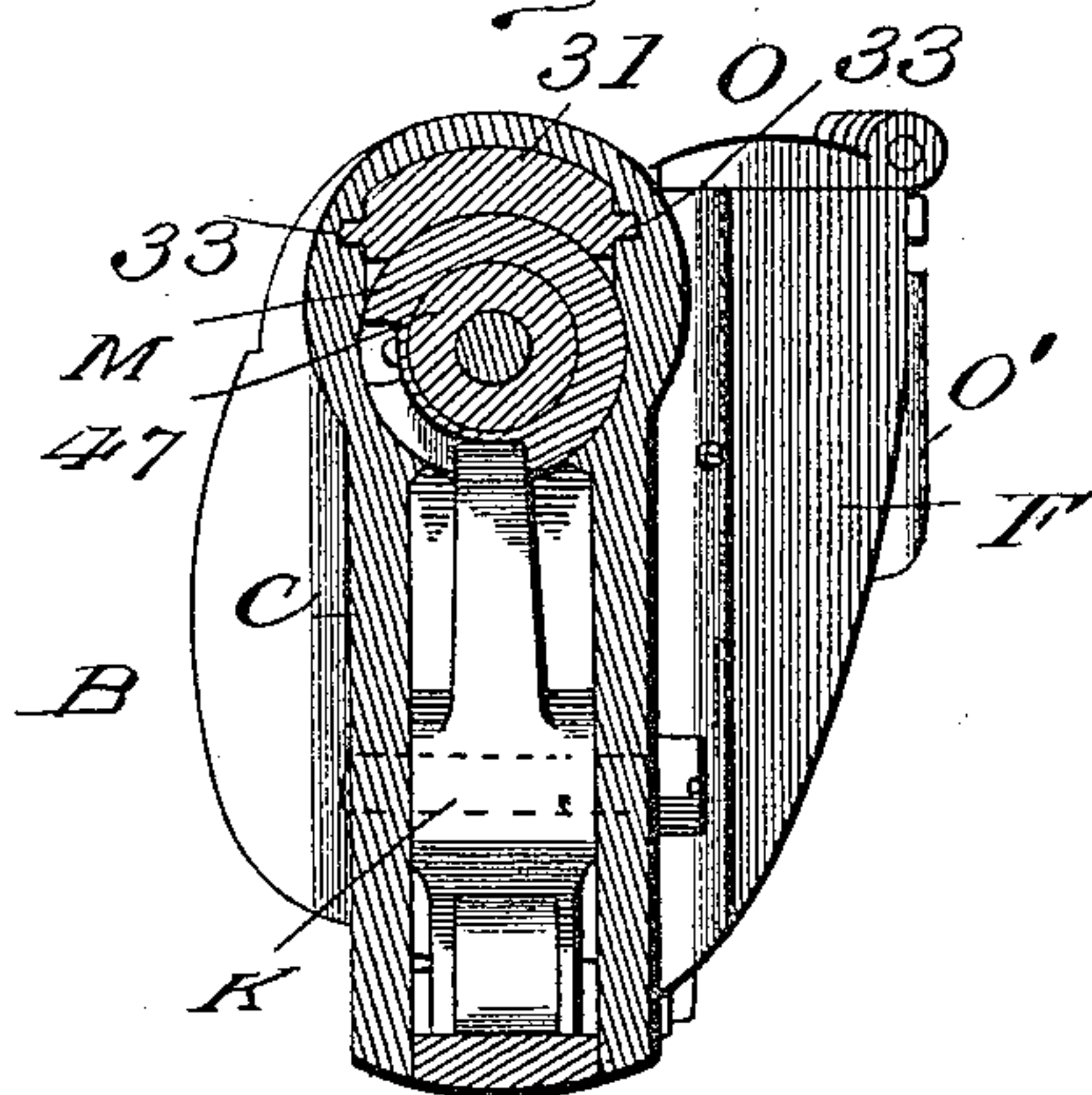


Fig. 17.

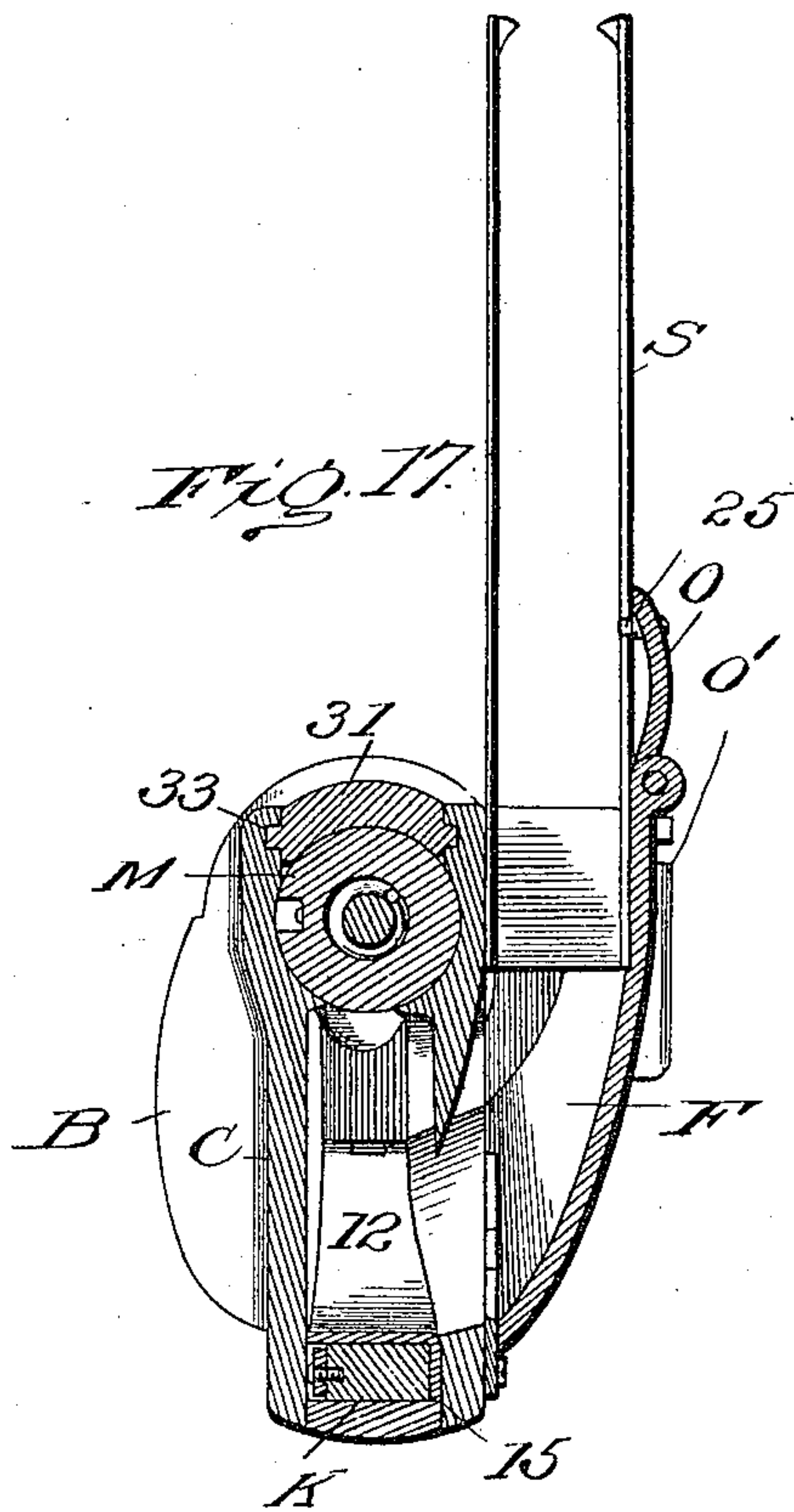
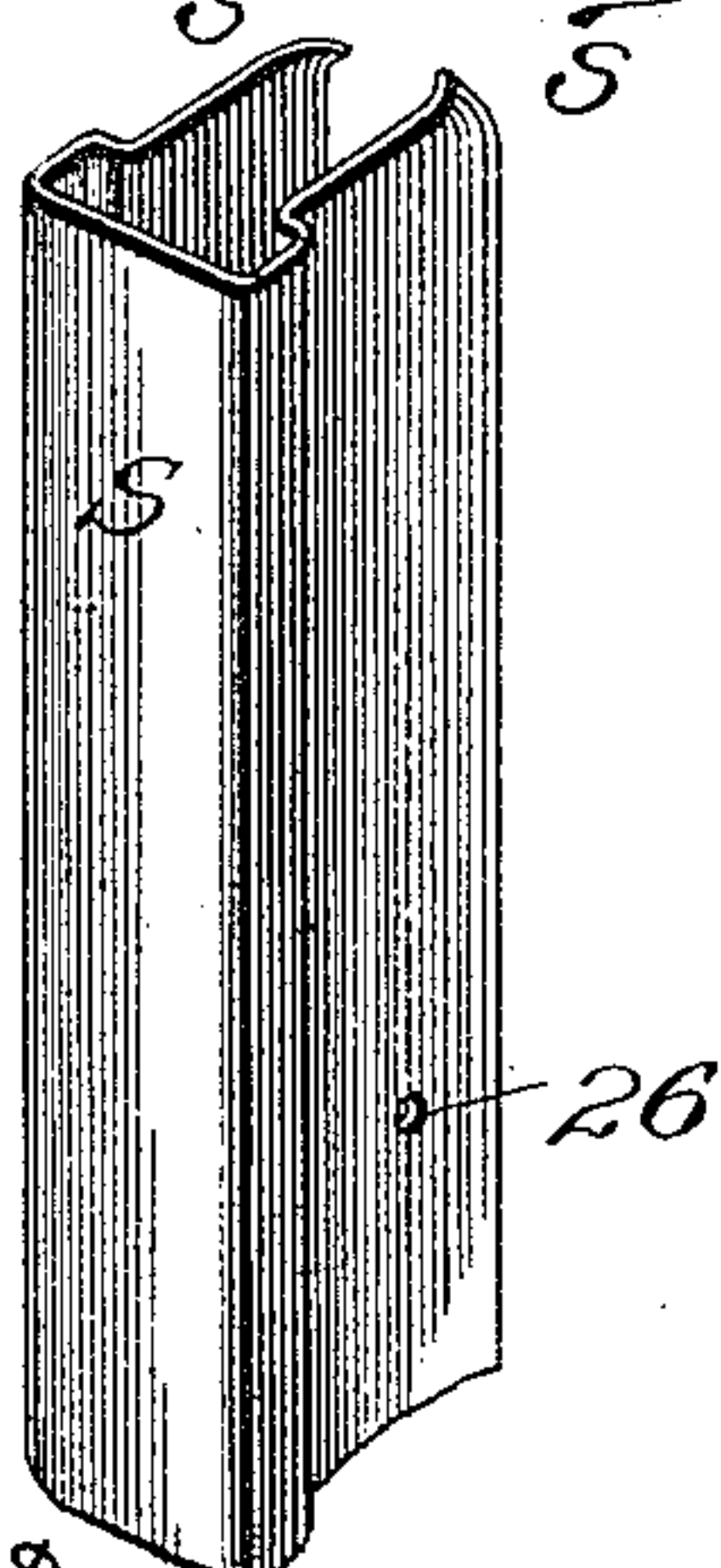


Fig. 18



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UNITED STATES PATENT OFFICE.

BETHEL BURTON, OF NEW YORK, N. Y.

MAGAZINE BOLT-GUN.

SPECIFICATION forming part of Letters Patent No. 622,443, dated April 4, 1899.

Application filed November 10, 1897. Serial No. 658,062. (No model.)

To all whom it may concern:

Be it known that I, BETHEL BURTON, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Firearms, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to magazine-guns.

10 The object of the invention is to produce a magazine-gun of the kind in which cartridges are held side by side in the magazine and in which the magazine shall not project at the side of the gun to interfere with the free manipulation thereof; also, to provide a box or hopper magazine and a carrier which shall lift a cartridge the minimum distance to be in position to be carried into the barrel and in which the carrier shall serve as a cut-off to
20 the magazine; also, to improve the bolt mechanism; also, to improve certain details of the gun, substantially as hereinafter pointed out.

Figure 1 is a side elevation of so much of the breech and magazine portion of the gun as is necessary to a proper understanding of my invention; Fig. 2, a top plan of same; Fig. 3, a vertical longitudinal section of the breech mechanism through the center of the bolt; Fig. 4, a broken horizontal section through bolt. Fig. 5 is a partial vertical section and partial elevation of the magazine portion of the gun. Fig. 6 is a perspective of the magazine box or hopper detached; Fig. 7, a perspective of the follower which lifts the cartridge; Fig. 8, a cross-section through the barrel. Figs. 9 and 10 are perspectives of the cam-sleeve and abutment; Fig. 11, a perspective of the firing-pin head; Fig. 12, a perspective of firing-point; Fig. 13, a broken portion of front of firing-pin; Fig. 14, a section through magazine on line 14, Fig. 3; Fig. 15, a section on line 15; Fig. 16, a section on line 16; Fig. 17, a partial section and partial elevation showing magazine and clip; Fig. 18, a perspective of cartridge-clip.

A indicates the gun-barrel; B, the stock; C, the receiver or shoe.

D denotes the rear sight of the gun; E, the non-conducting sleeve or covering to the gun-barrel; M, a reciprocating bolt.

At the side (preferably the right-hand side) of the receiver there is an opening or

slot 1, Fig. 5, approximately the form of the outline of a cartridge and having an inclined relation to the top or horizontal plane of the receiver. The rear lower end of this opening is wide enough to pass a cartridge-head. The front upper end of the opening is a little wider than the bullet end of the cartridge. On the outer face of the receiver are grooves 2 2. The box or casing F has flat ends provided with side tongues 3 3, which tongues may be entered in these grooves 2 2, thus attaching the casing F firmly to the side of the receiver. The casing may be fastened by a screw 4 passing through the tongue of the casing and into the frame, or it may be fastened in other suitable manner. The frame forming the side of the receiver curves inwardly to a position at the lower edge of the opening 1.

The casing F is wider and deeper at the rear than at the front end and curves inward toward the lower edge in compound curve corresponding in part to the curve of the side of the receiver as modified by the addition of a body a little thicker than the body of a magazine full of cartridges adapted to the gun. Thus when the casing F is properly applied to the side of the frame of the gun or receiver the lower edge of the casing comes below the lower edge of the hole 1 in the frame, and the magazine or hopper between the casing and side of the frame conforms generally to the column of cartridges adapted to fill the magazine, and the external projection of the magazine at the side of the gun is very little, and by measurement, trial, and computation it is believed that the magazine so formed gives the least possible projection from the frame of any magazine of similar thickness of material for inclosing an equal number of cartridges, thus permitting the hand or body to come close to the side of the gun and adapting the gun to easy manipulation. The magazine illustrated is of form and size to contain five cartridges of the style known as "Army .30."

The casing F may be cut away, as at 6, for the passage of a cut-off gate 7. This gate 7 is integral with or carried by a lever 8, which lever is pivoted to the outside of the frame, Fig. 5. The lever 8 may be elastic and have an inner projection to engage a recess in the frame, or a spring may be connected to the

lever, so that by taking hold of the button 9 at the outer end of the lever the gate may be shifted so as to project inside the magazine and so cut off the passage of cartridges through passage 1, or the gate may be moved down, so as to leave the passage 1 open, when any cartridge in the magazine will tend to roll through opening 1 when the gun is in any usual firing position.

The receiver is closed at the bottom and has a vertical passage 10 under the boltway, the passage 10 containing the front part of the lever K. The rear end of the passage 10 is closed for most of the way by a partition 11, extending down below the bolt. This partition forms an end abutment for the heads of cartridges after the cartridge is in the receiver and forms a stop to prevent the upward lift of the carrier-lever K beyond the amount of movement needed. The carrier-lever K is a bent lever pivoted in the frame in usual manner, having one arm projecting upward into a slot in the bolt and the other arm projecting forward into the passage 10. To the front end of this arm K, as shown, a lifter 12 is pivoted; but the lifter may be otherwise pivoted than to the lever K. Said lifter 12 is preferably a lever having an arm reaching in front of the pivot by which it is connected to the arm K. A light spring 14, shown connected to the lever K, bears up the rear end of the lifter 12, save when this lifter is depressed by the depression of the front end of the lever K and the engagement of the arm 13 with the floor of the receiver. When the front of the lever K is depressed, as in Fig. 3, the lifter is carried below the passage 1, and if there be a cartridge in the magazine (the gun being in any usual loading or firing position) the bottom cartridge in the magazine will be moved by gravity onto the lifter 12. The front of the lever K is moved down by the final movement of closing the bolt, as is common, and when the bolt is closed there is room for but one cartridge on top of the lifter below the guide-ribs 20 in the receiver. When the bolt is drawn back, it permits the spring 16 to raise the front of the lever K, as is common, or the backward movement of the bolt may rock the lever K. This permits the spring 14 to raise the rear end of the lifter 12, and the cartridge is thereby lifted as far as the guide-ribs 20 in the receiver will permit, said ribs extending inwardly from the sides of the frame to such a distance that the head of a cartridge cannot pass bodily between them, but the curved edge thereof will project slightly above the ribs, as is common. When the bolt M is moved forward to close the breech, it moves the cartridge lying on the lifter 12, and when the head or bulge of the cartridge has passed in front of the ribs 20 the lifter will raise the body of the cartridge into alinement with the barrel if the entrance of the bullet into the chamber does not effect such alinement.

The lifter 12 has a side wing 15, which acts as a stop to the opening 1 at all times except

when the lifter 12 is in its lowest position. Consequently a second cartridge cannot enter the magazine nor can a cartridge pass under the lifter 12. The front end of the lifter 12—that is, the end toward the muzzle of the gun—is preferably rounded, so as to guide the bullet end of the cartridge toward the cartridge-seat in the barrel, or the receiver itself may thus be inclined, as is common in gun construction.

It will be noticed that the lifter 12 never has more than one cartridge to lift. The spring which actuates this lifter may thus be made very light, and a tendency to jam or bind the cartridges in the receiver, as where a magazine or follower has to lift a considerable number of cartridges in a magazine, is thereby avoided, and the cartridge, being held but lightly, can be very easily moved forward into the gun-barrel.

The casing F is provided with a hinged cover O, which cover is held either open or closed by a spring-pusher O', as is common in snuff-boxes and perhaps in other boxes and in box-magazines. The cover projects a little at the rear of the casing F, so as to permit the operator to lift the cover readily with the thumb or finger. When the cover is thrown up, as in Fig. 17, the magazine may be filled with loose cartridges by hand or from a clip, and the cover O may then be closed; but the gun is adapted for use with a clip also. In such case the clip S, Fig. 18, may be entered into the mouth of the open magazine, and a catch 25 on the cover of the magazine will enter the hole 26 in the side of the clip, and thus retain the clip in place. The magazine-casing or the frame has the vertical rib or ribs 27, behind which the clip S will be entered, and said rib and the wall of the magazine will hold the clip in vertical position against the tendency of the bullet end of the cartridges to cant the clip.

Almost any usual form of cartridge-clip may be used and the cartridges loosened therefrom and permitted to fall into the magazine of my gun, such as described. The clip S, however, is the form I prefer. It is of a single piece of sheet metal bent to surround the heads of the cartridges and to extend alongside the body of the cartridges. The corners s s may be turned in a little, preferably at one end only of the clip, and the clips will be habitually carried in the cartridge-box with the open end upward. This clip will be entered by the hand in the top of the magazine, when the cartridges will feed down by gravity. With a magazine containing five cartridges and a clip containing ten the whole fifteen cartridges may be fired with great rapidity.

The bolt M moves back and forward in the boltway in the receiver in the usual manner and has a hook-extractor 30 of usual form and a common shell-ejector. The bolt-cover 31 is connected to the bolt M by a projection 32 on the cover extending into a groove in

the body of the bolt, thus permitting the bolt-head to partially rotate on its axis in locking and unlocking the bolt, as is very common. The bolt-cover 31 is guided at its edges in 5 grooves 33 in the frame, so that the cover can have no movement but a longitudinal reciprocation. The cover thus projects above the extractor-hook 30, near the front of the bolt, and holds the extractor-hook down into en- 10 gagement with the cartridge-head in extracting the shell.

The bolt M is generally cylindrical and is hollow to contain the body of the firing-pin, its spring, and sleeve. The firing-pin 40 has 15 a nose 41, which nose is slotted at 42, and has an enlarged recess 43 in front of said slot and extending to the side of the nose. The pin 40 has a neck 44, which will enter slot 42, and a nub 45, which will enter the opening 20 43 in the nose. The nose and pin can thus be coupled together, and when the nose is entered into the bolt, in the bore of which it neatly fits, the nose and pin will remain coupled together.

25 The firing-pin sleeve 47 surrounds the rear body of the firing-pin and is fixed to the bolt by a screw or pin 48, the coiled spring 49 being confined by said sleeve, so as to press forward on the nose of the firing-pin. The sleeve 30 47 is cut away at one side for about half its circumference, thus leaving a recess at the rear end of sleeve 47 due to said cut-away portion. The firing-pin collar 50 surrounds the firing-pin in rear of said sleeve 47. Both 35 sleeve and collar are cylindrical externally. The collar 50 has a segmental projection 51, terminating in a point at its front end. This projection 51 enters the recess left by the cut-away portion of the sleeve 47 when the firing- 40 pin moves forward. When the firing-pin is drawn back, it may be partially rotated, so that the point of the collar 51 will enter the notch 52 in the sleeve, and the coiled spring will thus be held under compression between 45 the nose of the firing-pin and the sleeve 47. In this position the pin and sleeve may be removed from the bolt by removal of the pin 48 without losing the compression of the mainspring. The projecting front segment 50 of the collar 50 and the rear face of the sleeve are provided with the usual cam-surfaces, by which the cocking is effected. The head 55 55 is secured to the collar 50 by a pin or screw and has a projection 56, which enters a longitudinal groove in the frame, shoe, or receiver, and is thereby prevented from turning. This projection 56 is engaged by the trigger or sear 60 in a common way, and the trigger construction and operation are common.

60 Attached to the rear end of the firing-pin is a head 61, having a side wing or handpiece 62. The front end of head 61 has a face-cam 63. The rear end of collar 50 has a face-cam 64. By turning the head 61 by the finger- 65 lever 62 in one direction the projections of the two cams are brought in alinement and the firing-pin is set back, so that its nose will

not reach the cap on the cartridge. When the head 61 is partially rotated in the other direction, the projection of one cam falls into 70 the recess in the other, and the pin is then long enough to reach the cartridge. Thus a partial rotation of head 61 serves as a safety device, and the lever 62 by its position shows whether the firing-pin be in safety position 75 or firing position.

As a magazine-gun can be fired so rapidly that it is unsafe to touch the barrel with the hand owing to the heat, I provide a shield E 80 for the top of the barrel. This shield is a partial sleeve of wood, nearly crescent form in section, and the front and the rear ends are beveled. The rear end enters under the undercut portion 70 of the frame, and the front beveled end of the piece E enters under 85 band 71. The sight D is beveled at its lower edges and is inserted in a hole in the shield E, so as to overlap the beveled edge of said sleeve, so that the screw which holds the sight to the barrel also holds on the sleeve. 90

What I claim is—

1. A magazine-gun having the cartridge-magazine at the side of and attached to the frame of the gun, said magazine for a number of cartridges having its outer surface, at 95 the rear, curved downward and inward toward the frame of the gun, its outer surface at the front curved in like direction but on shorter radius, the outer wall of the magazine thus conforming closely to the general 100 outline of the cartridges in a full magazine—the passage from magazine to receiver inclined and conforming generally to the plane of the bottom of the magazine, substantially as described. 105

2. In a magazine-gun, the hopper-magazine at the side of the receiver and having a bottom passage sidewise into the receiver, the carrier-lever hung in the receiver to swing below said passage, a spring-pressed lever 110 pivoted to said lever and extending forward of said pivot, and an abutment in the bottom of the receiver by which the extension of said lever is engaged and depressed as the carrier-lever moves to its extreme lower position, sub- 115 stantially as described.

3. In a magazine-gun, the combination with a hopper-magazine secured to the outside of the frame and having a passage at the bottom of the magazine and arranged obliquely rela- 120 tively to the plane of the bolt through the side of the frame through which passage the lowermost cartridge passes by gravity to the magazine, of a spring-pivoted carrier having a lifter pivoted at its front end, and provided 125 with a side wing for closing the side opening to the receiver to the passage of a cartridge except when the lifter is at its lowest position, in combination substantially as described.

4. In a magazine-gun, a hopper-magazine 130 having an opening from its bottom through the side of the frame into the receiver through which the bottom cartridge may be fed by gravity, the carrier-lever pivoted at the rear

and extending forward in the receiver, and the lifter pivoted to said carrier and having a leaf acting as a gate to prevent the passage of cartridges from the magazine to the receiver
5 when the lifter is elevated, substantially as described.

5. In a magazine-gun, the hopper-magazine opening at its lower end sidewise into the receiver, the spring-pressed lifter pivoted at its
10 front end to the lever-carrier and having a downwardly-extending arm forward of its pivot to engage a fixed piece and depress the rear of the lifter when the carrier is down, and the carrier-lever pivoted in the receiver and
15 engaged by the bolt, all combined substantially as described.

6. In a magazine-gun, the hopper-magazine having a vertical rib parallel with its rear wall, and the cartridge-clip embracing the
20 heads of the cartridges and extending forward to the rib in the magazine, whereby the clip may be supported in perpendicular position notwithstanding the overweight of the bullet ends of the cartridges, substantially as de-
25 scribed.

7. In a magazine-gun, the combination of the hopper-magazine having a vertical inner rib, the hinged cover of the magazine having a catch thereon, and the cartridge-clip extending around the cartridge-heads and forward
30 along the sides thereof to said vertical rib, and having a hole into which the catch on the magazine-cover may extend, all combined substantially as described.

8. In a gun, the receiver, the bolt, the fir-
35 ing-pin in a recess in said bolt the nose-piece on said pin connected thereto by neck and groove, the notched cam-faced sleeve connected to the bolt and the spring confined between said nose-piece and said sleeve, and the
40 collar having a cam to engage the cam on the sleeve and a point to enter the notch therein on the rotation of said pin and collar, all combined substantially as described.

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

B. BURTON.

Witnesses:

W. A. BARTLETT,
THOMAS J. STALEY.