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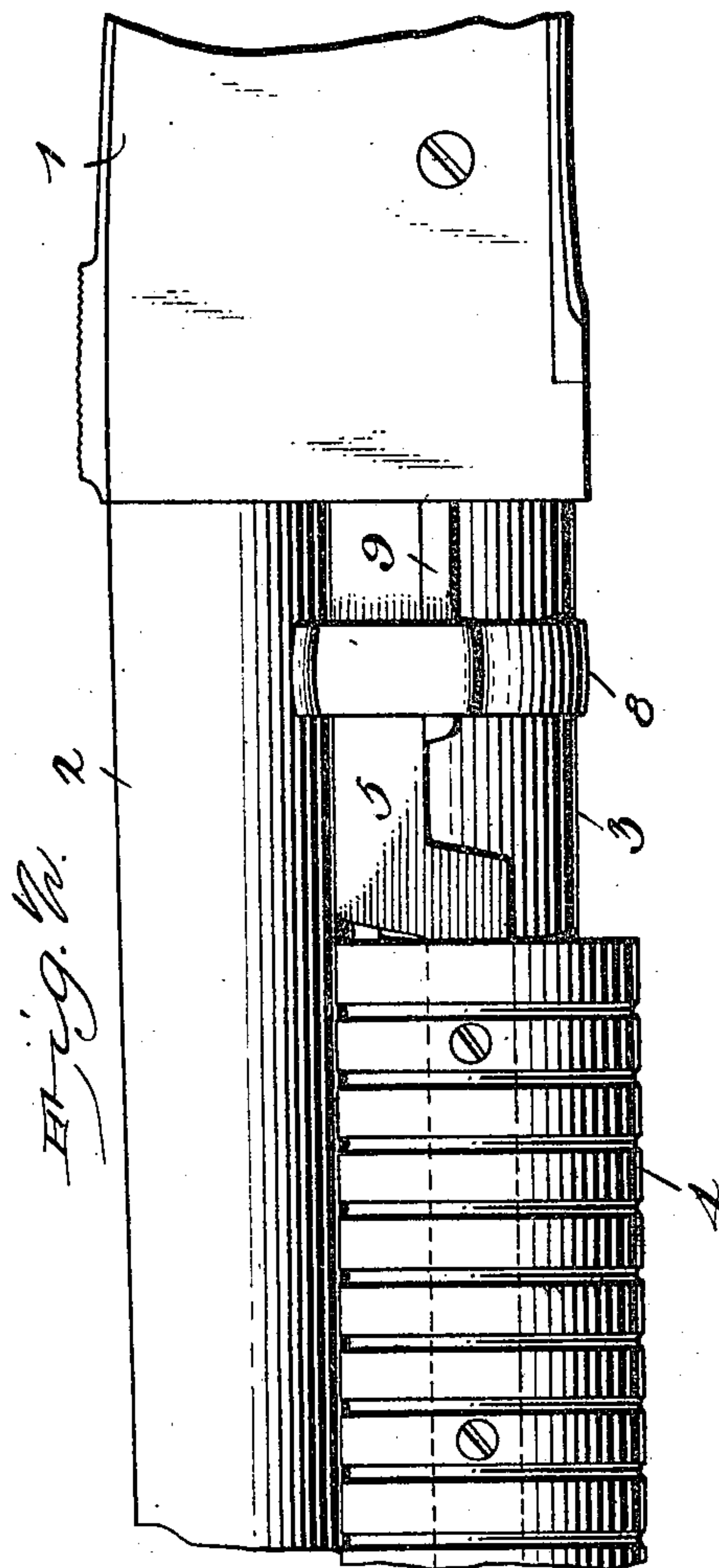
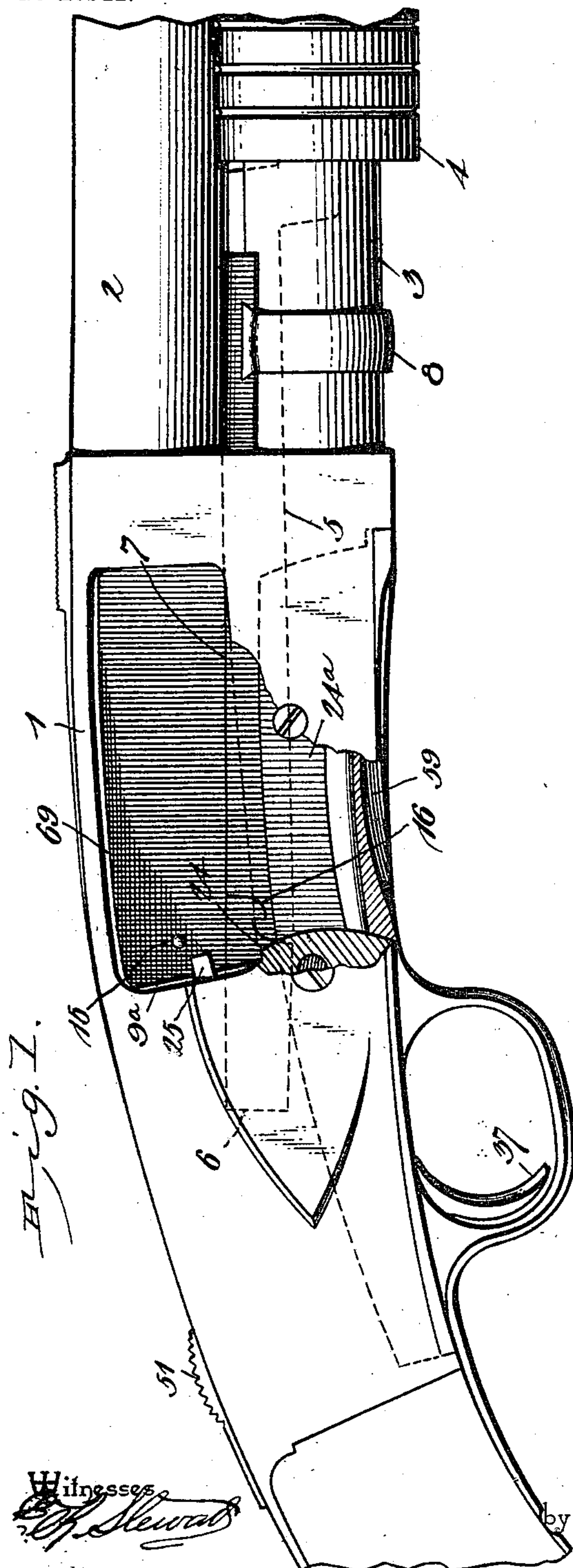
PATENTED APR. 12, 1904.

W. F. PLYMPTON.
MAGAZINE FIREARM.

APPLICATION FILED JULY 3, 1902.

NO MODEL.

5 SHEETS--SHEET 1.



~~Witnesses~~

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No. 756,889.

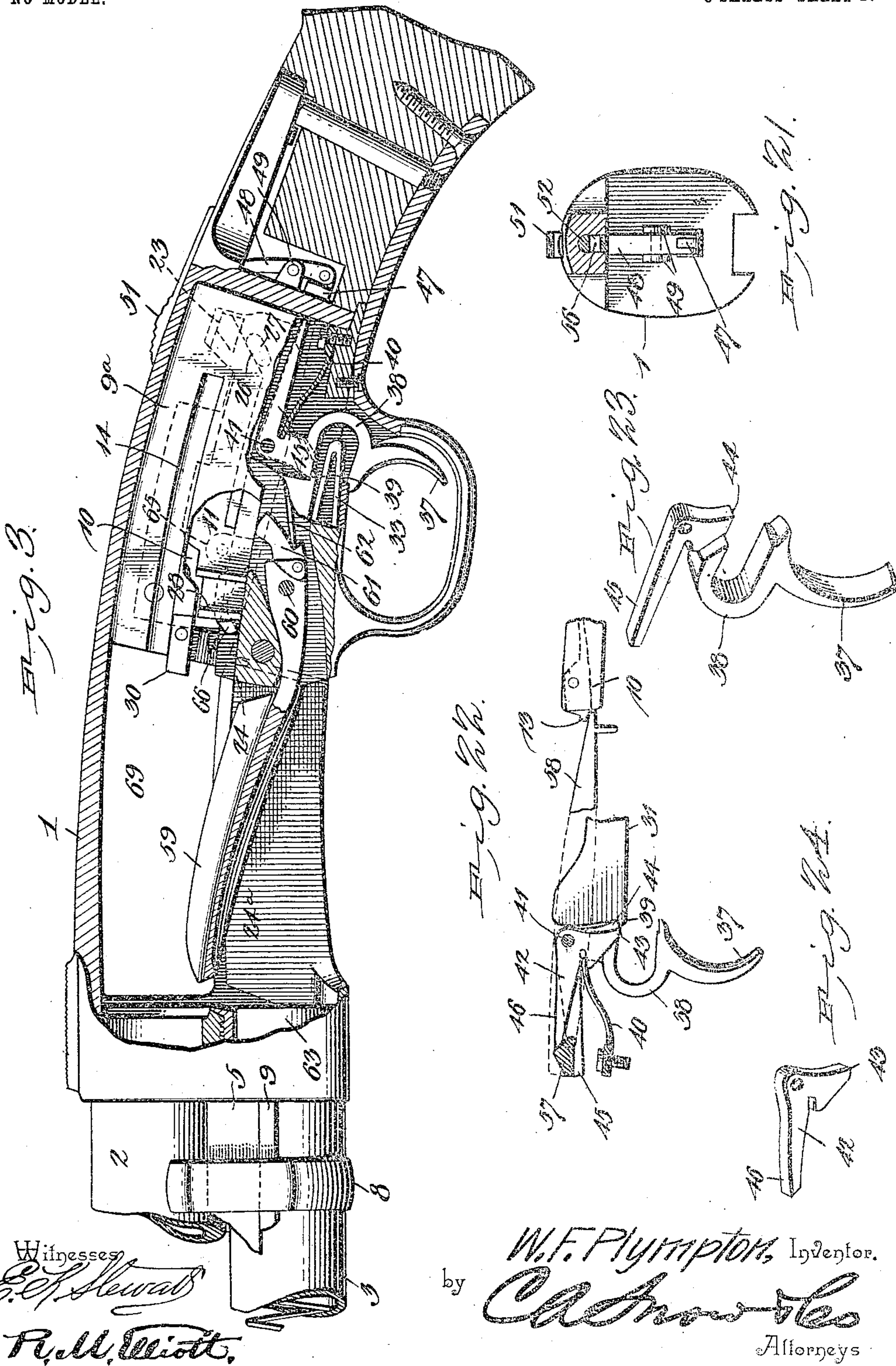
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NO MODEL.

5 SHEETS—SHEET 2.



Witnesses
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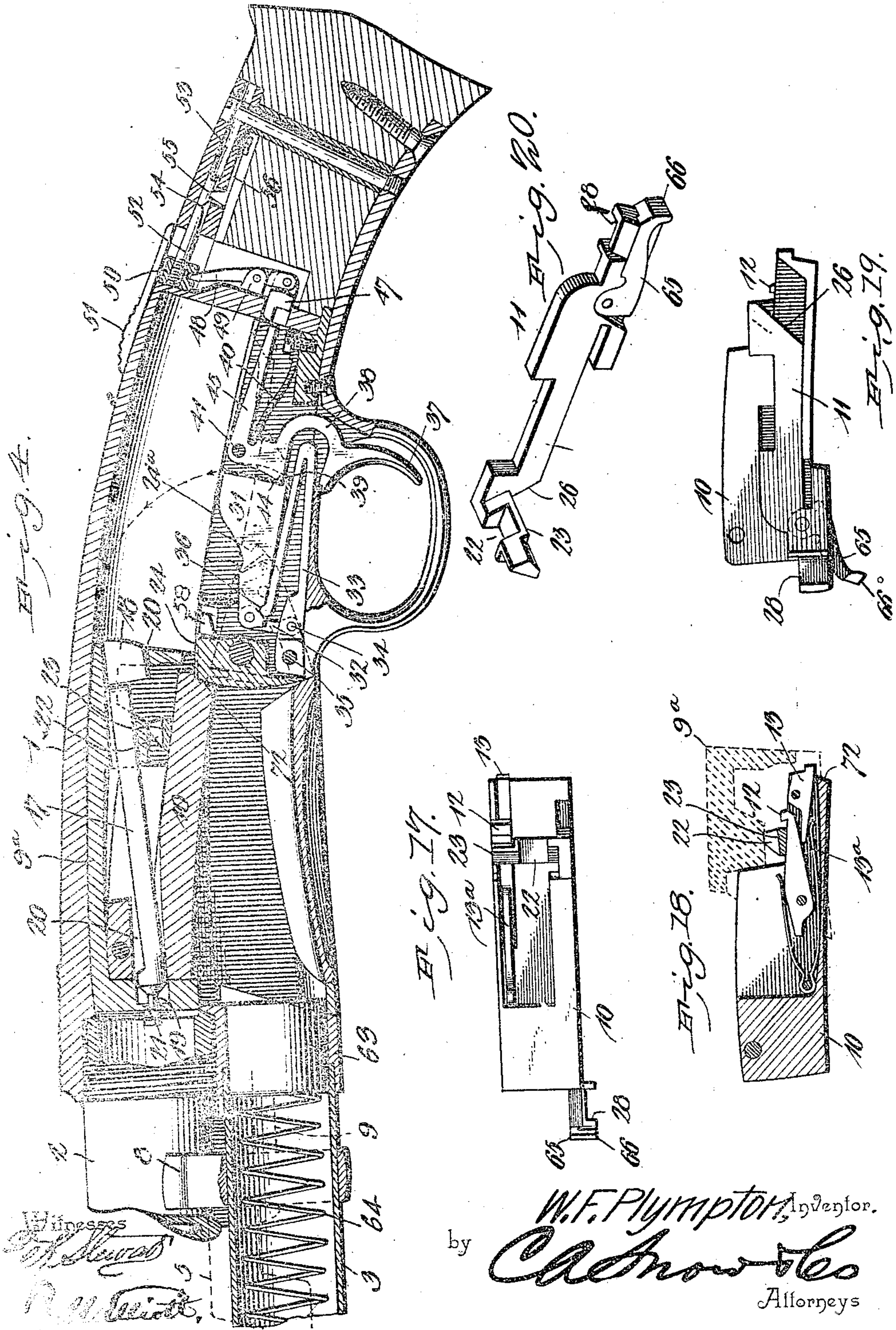
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5 SHEETS—SHEET 3.



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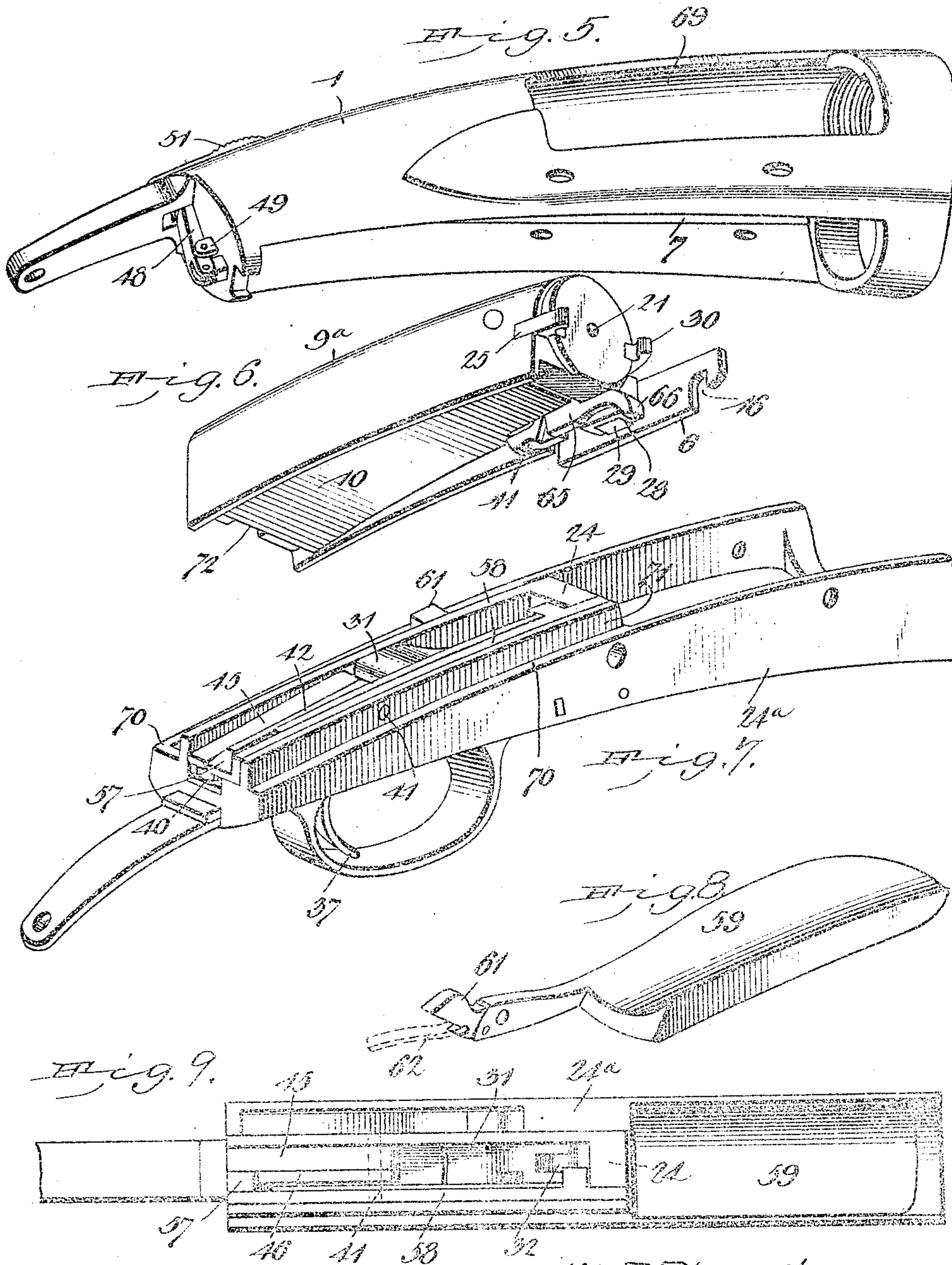
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APPLICATION FILED JULY 3, 1902.

5 SHEETS--SHEET 4.

NO MODEL.



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No. 756,889.

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MAGAZINE FIREARM.

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NO MODEL.

5 SHEETS—SHEET 5.

Fig. 11.

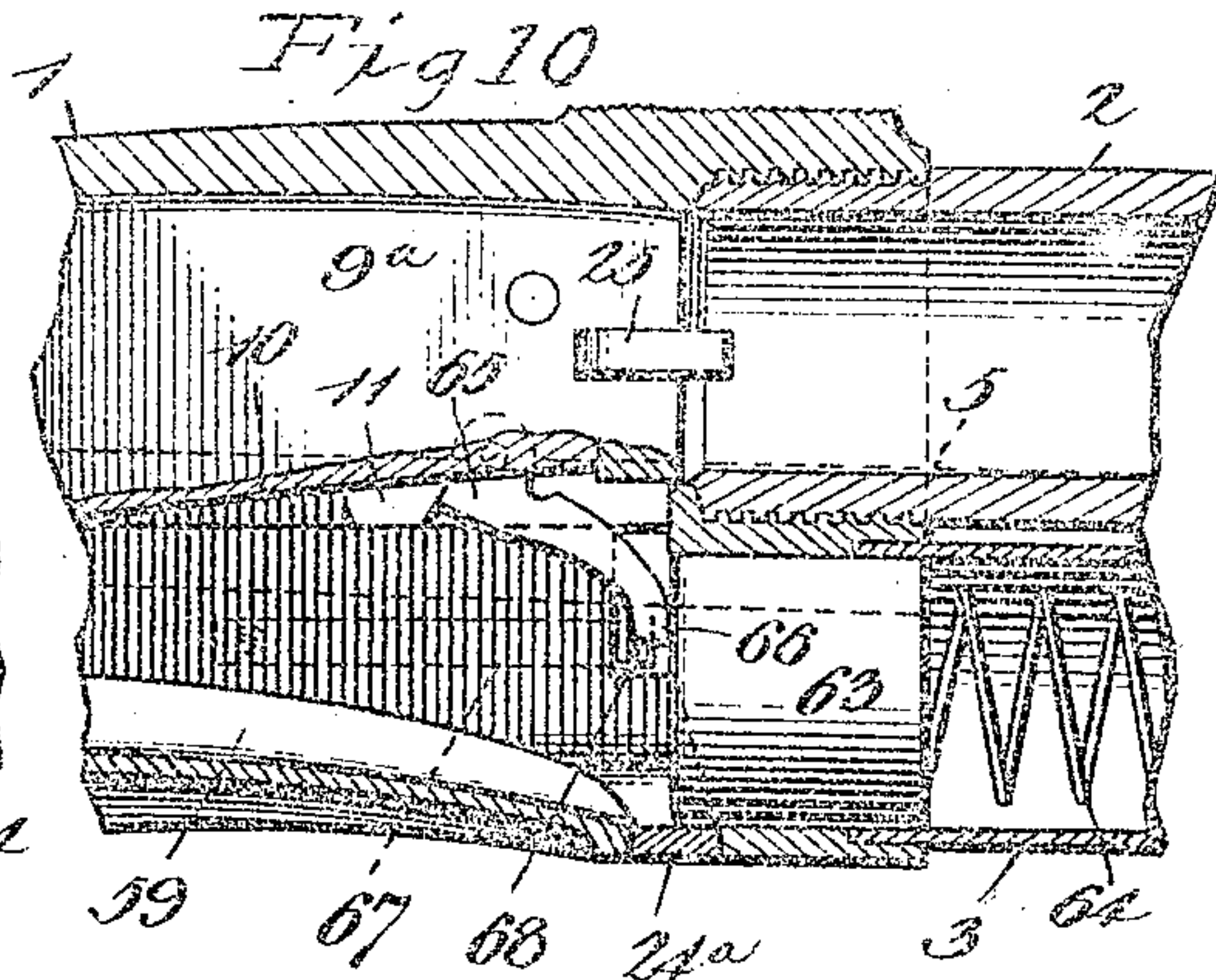
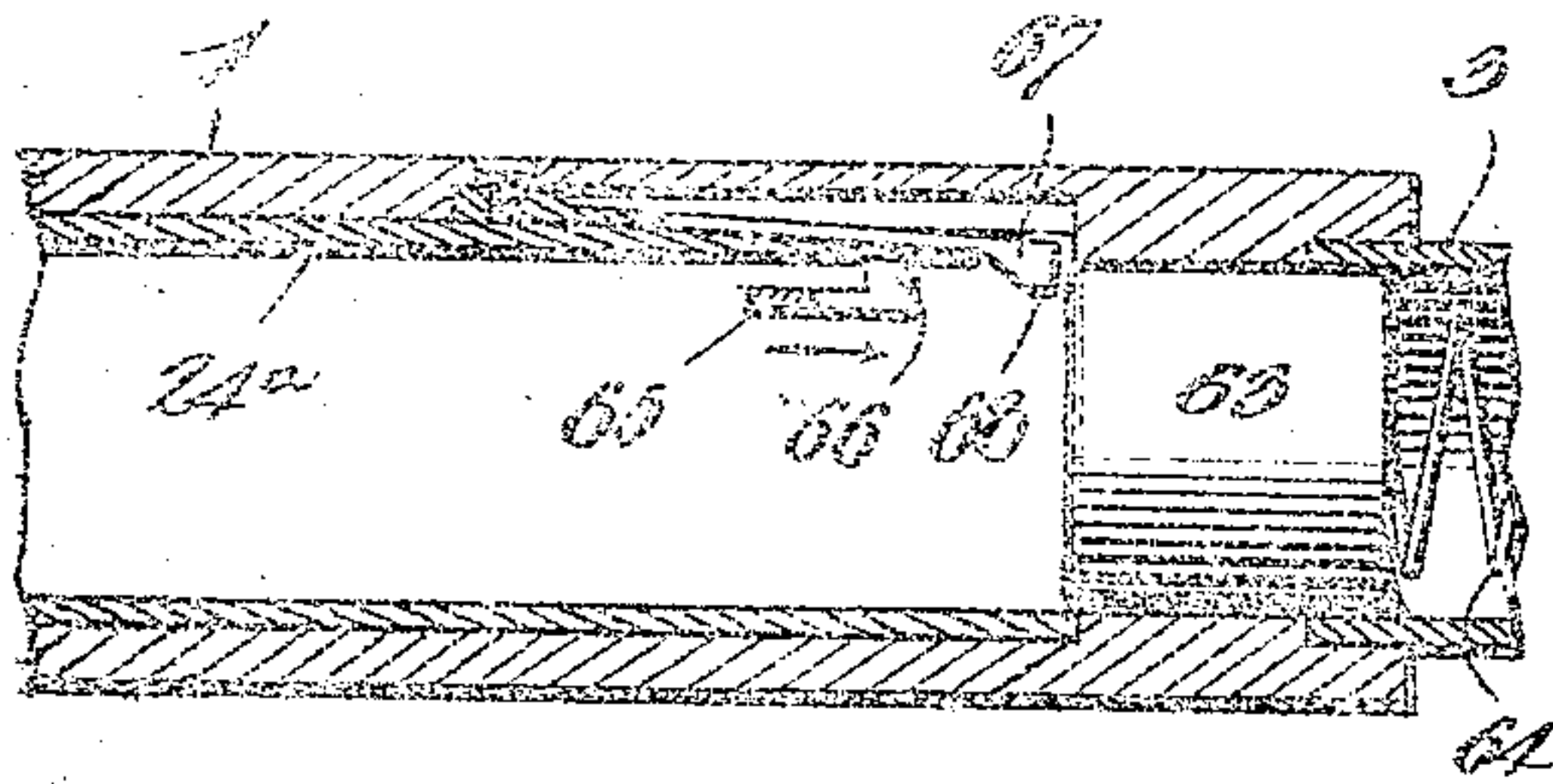


Fig. 12.

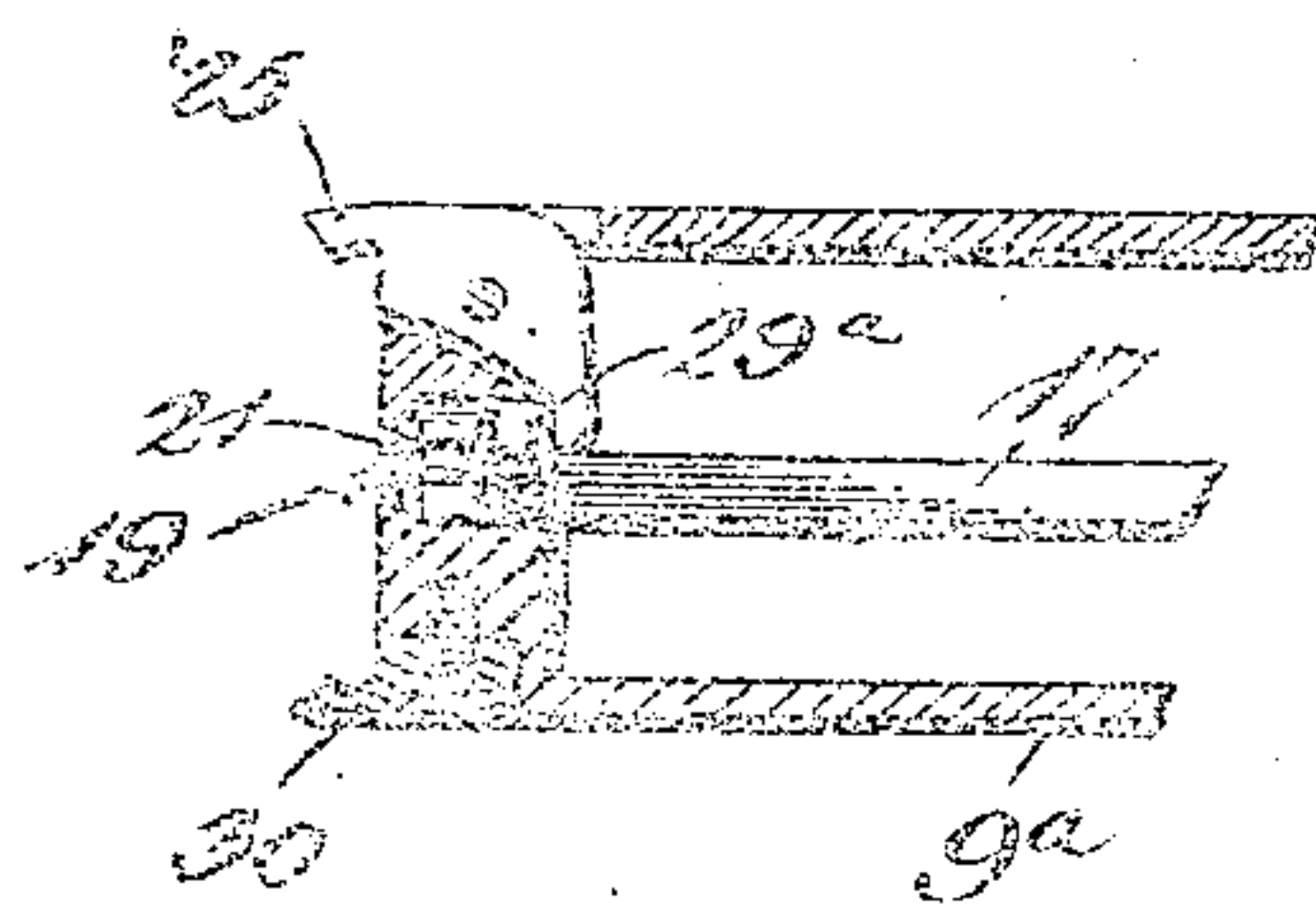
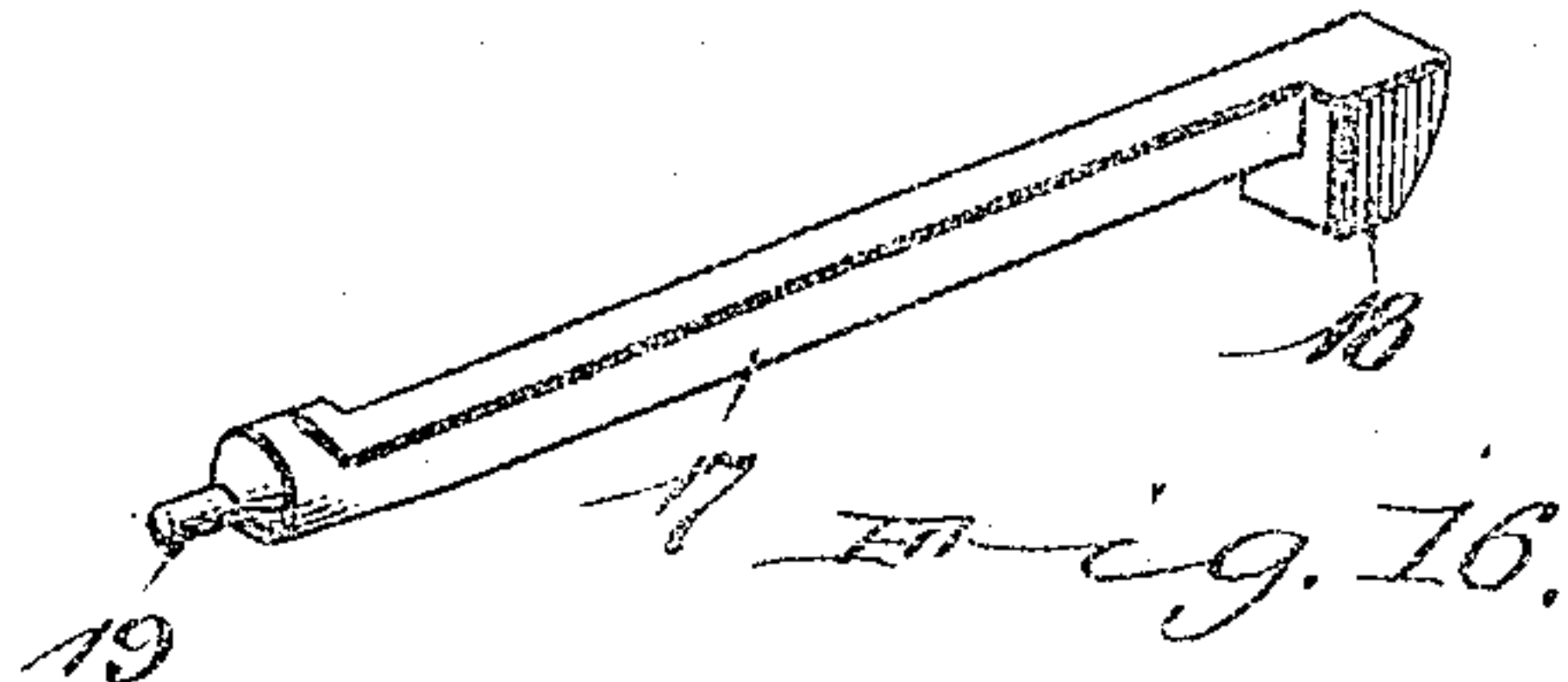
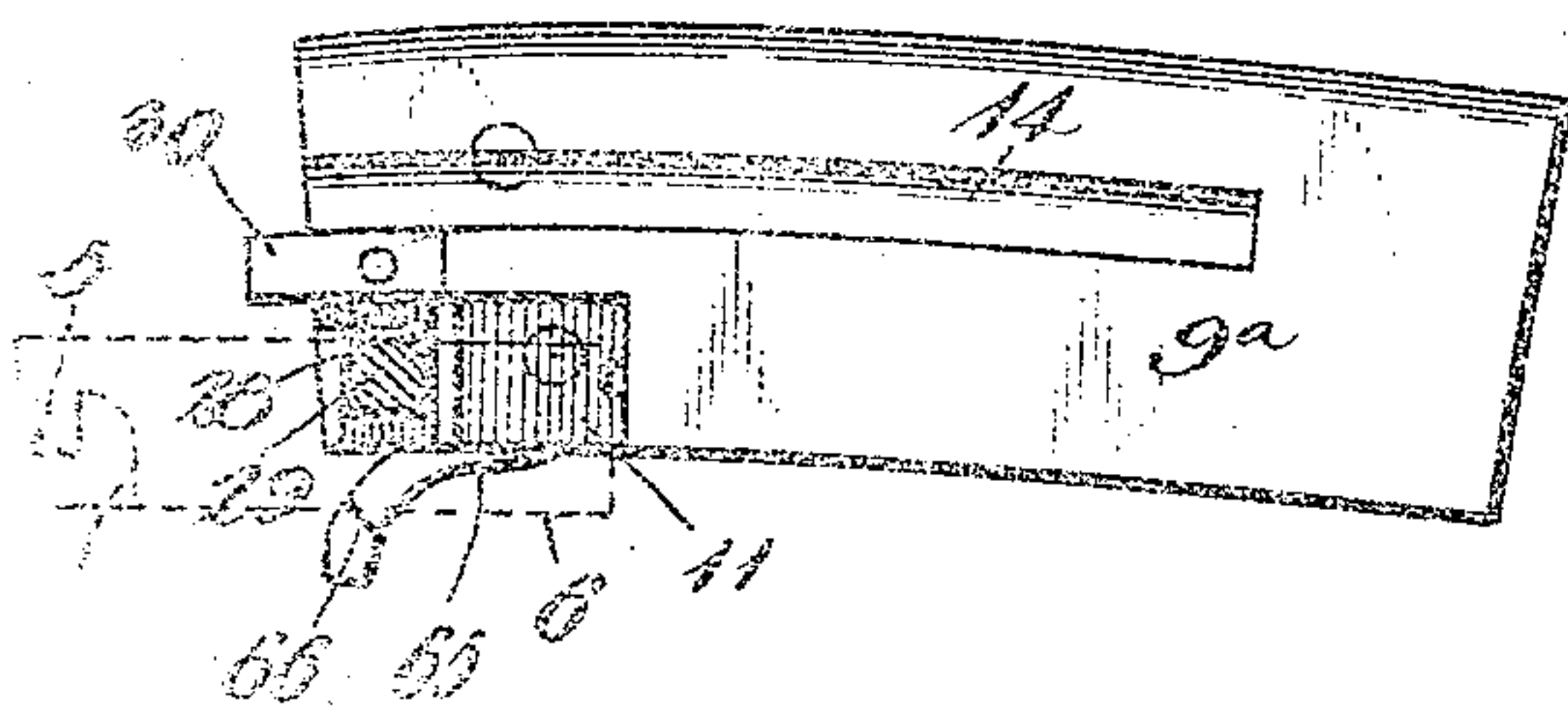


Fig. 15.

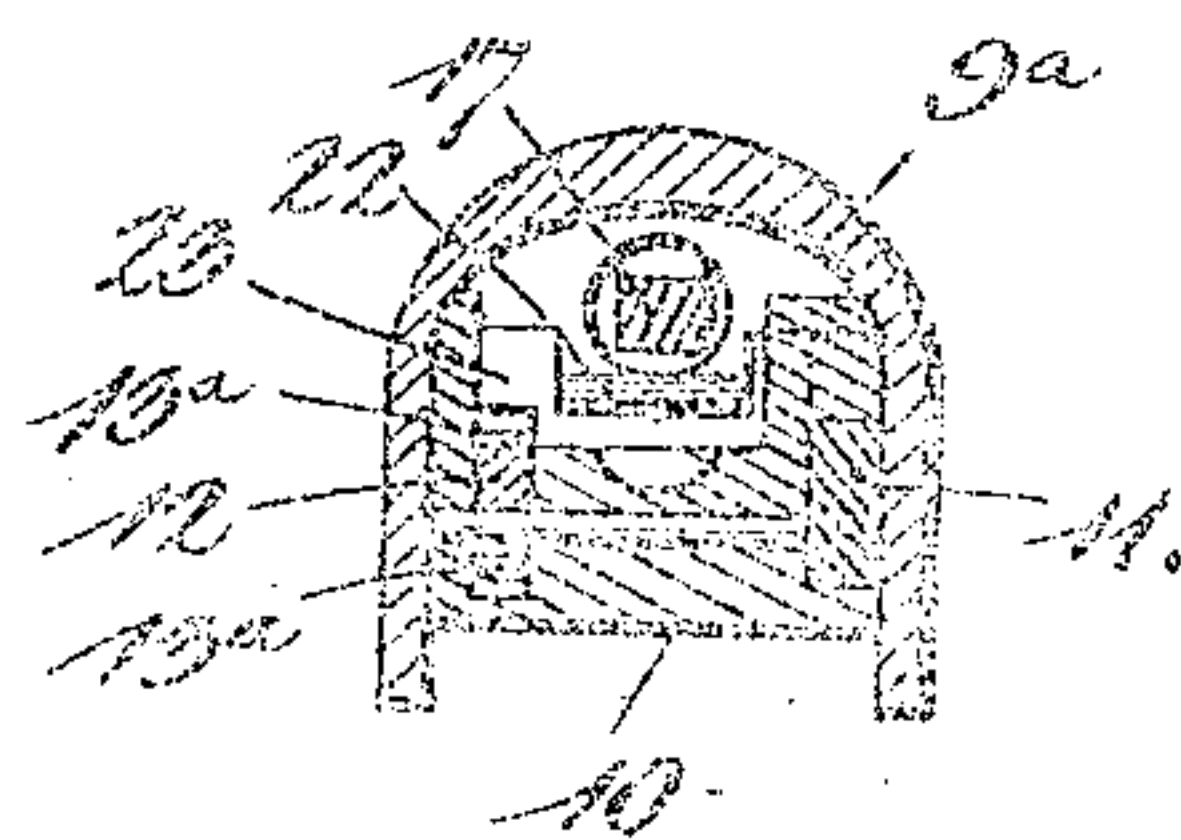
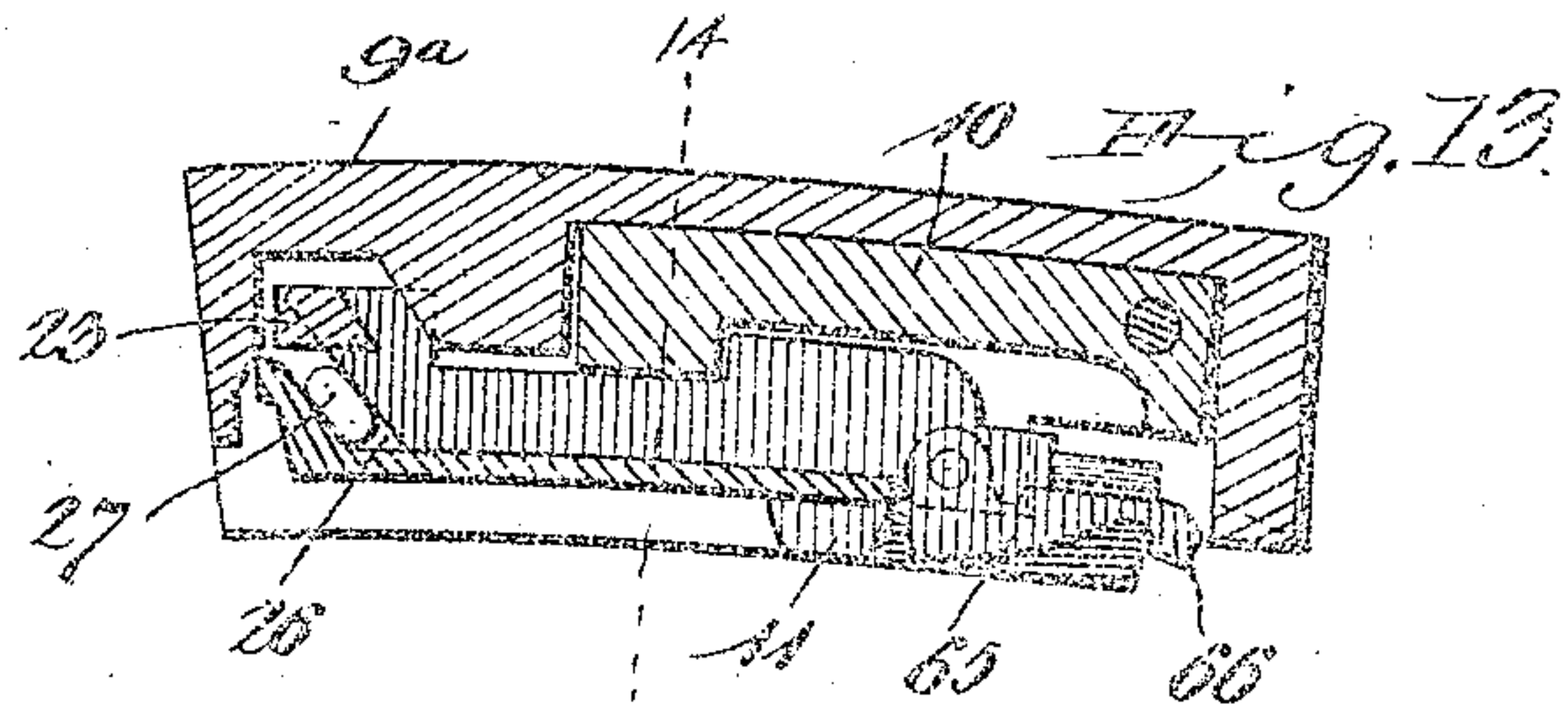


Fig. 14.

Witness
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UNITED STATES PATENT OFFICE.

WASHINGTON FRANK PLYMPTON, OF CLEARFIELD, PENNSYLVANIA,
ASSIGNOR OF ONE-HALF TO GEORGE F. GOSS, OF WALLACETON,
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MAGAZINE-FIREARM.

SPECIFICATION forming part of Letters Patent No. 756,889, dated April 12, 1904.

Application filed July 3, 1902. Serial No. 114,303. (No model.)

To all whom it may concern:

Be it known that I, WASHINGTON FRANK PLYMPTON, a citizen of the United States, residing at Clearfield, in the county of Clearfield and State of Pennsylvania, have invented a new and useful Magazine-Firearm, of which the following is a specification.

This invention relates to magazine-firearms.

The object of the invention is to render the firearm absolutely safe against premature discharge until the breech-block shall have been seated and locked in operative position, to effect positive extraction of a shell no matter how tightly it may be lodged within the barrel, to simplify the construction and render more efficient and durable the trigger and hammer mechanism, and generally to improve the breech mechanism of a gun.

With these and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a magazine-firearm, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like numerals of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof.

In the drawings, Figure 1 is a view in side elevation, partly in section, of the breech portion of a firearm equipped with the improvements of the present invention. Fig. 2 is a view in side elevation, taken from the opposite side of Fig. 1, showing more particularly the means by which the action-bar is associated with the hand-grip and also the means for keeping the action-bar in coöperative relation with the recoil-block actuator. Fig. 3 is a view, partly in elevation and partly in section, showing the breech-block retracted and the cartridge-carrier in position to effect

feeding of a fresh cartridge to the barrel. Fig. 4 is a view similar to Fig. 3, showing the breech-block in its locked position. Fig. 5 is a detached detail view of the frame. Fig. 6 is a perspective detail view of the breech-block, showing the recoil-block associated therewith. Fig. 7 is a perspective detail view of the tang-head. Fig. 8 is a similar view of the cartridge-carrier. Fig. 9 is a view in plan of the tang-head. Fig. 10 is a view, partly in elevation and partly in section, showing more particularly the means for checking escape of a cartridge from the magazine. Fig. 11 is a horizontal sectional view of the cartridge checking mechanism. Fig. 12 is a view in side elevation of a breech-block, taken from the side opposite that shown in Fig. 6. Fig. 13 is a vertical longitudinal section taken through the breech-block and recoil-check. Fig. 14 is a transverse sectional view taken on the line 14 14, Fig. 13, and looking in the direction of the arrow thereon. Fig. 15 is a horizontal section taken through the breech-block and showing more particularly the co-operative relation between the extractor and the firing-pin. Fig. 16 is a perspective detail view of the firing-pin. Fig. 17 is a view in top plan of the recoil-block. Fig. 18 is a view in vertical longitudinal section through the recoil-block. Fig. 19 is a view in side elevation of the recoil-block. Fig. 20 is a perspective detail view of the firing-pin retractor. Fig. 21 is a transverse section taken through the rear portion of the receiver. Fig. 22 is a detached detail view showing more particularly the mechanism for actuating the hammer safety-dog. Fig. 23 is a perspective detail view of the trigger. Fig. 24 is a similar view of the trigger safety-dog.

Referring to the drawings, 1 designates the receiver, with which is associated the barrel 2 and the magazine 3 in the usual manner. The magazine-tube has mounted on it the usual hand-grip 4, to which is secured one end of the action-bar 5, the other end of which is articulated to the slide 6, (shown in full lines in Fig. 6 and in dotted lines in Fig.

12 and which will presently be described,) the said grip and slide being disposed for movement in a groove 7 within the receiver, as shown in Figs. 1 and 5. The magazine-tube 5 is associated with the barrel by the usual collar or clip 8, which is provided with a slot for the reception of the action-bar, as usual, there being a guide 9 combined with the collar or clip to assist the action-bar in its reciprocations. 10

The receiver houses a breech-block 9^a, in which is pivoted a recoil-block 10, having combined with it a recoil-block actuator 11 for raising the rear portion of the recoil-block, 15 as hereinafter explained, a locking-dog 12 therefor, and a lifting-dog 13, actuated by the dog 12 for holding a safety-dog (presently to be described) out of the sear-notch of the hammer when the breech-block is in firing 20 position, the two dogs 12 and 13 being actuated to perform the function designed by a double-armed spring 13^a, housed in a recess in the recoil-block, the lower arm of the spring by pressing upward against the extension of the dog 13 operating normally to hold 25 the dog 12 raised and the upper arm of the spring operating to depress the dog 12 when the outer end of the dog 13 is lifted, thereby to permit the recoil-block actuator 11 to move 30 rearward and out of engagement with the toe of the dog 12 and to the position indicated by dotted lines in Fig. 3. The breech-block is provided in one side with a longitudinal groove 14, curved on an arc corresponding to that of 35 its movement within the receiver, and is designed to engage a pin or projection 15, Fig. 1, extending inward from one wall of the receiver. As will be seen by reference to Fig. 1 and as above pointed out, the breech-block 40 moves through the arc of a circle and the action-bar moves in a straight line, and for this reason it is necessary to provide the articulated joint 16 between the action-bar and the breech-block and slide 6 to permit a slight 45 rocking movement between the parts of the joint under reciprocation of the breech-block.

The recoil-block has disposed in it a firing-pin 17, having the usual rectangular striking-head 18 and cap-engaging point 19. The forward 50 portion of the firing-pin is mounted in a bore 20 in the recoil-block, Figs. 4 and 7, and the head 18 and point 19 project through openings 20 and 21, respectively, in the ends of the breech-block. The shank portion of the firing-pin adjacent to the head 18 engages 55 a recess 22, Fig. 20, in an offset 23 on the recoil-block actuator 11, so that as the actuator is retracted by mechanism presently to be described it will force the firing-pin backward, and thus move the point 19 back into 60 the forward end of the breech-block, and thus into safety position. As will be seen by reference to Fig. 4, the recoil-block is normally

locked against retraction by contact with an abutment 24 on the tang-head 24^a, and in order 6 to elevate the recoil-block to permit retraction of the breech-block, and thus at the same time actuation of the extractor 25, Figs. 6 and 15, the rear end of the recoil-block actuator is provided with a beveled face 26, 7 Figs. 13, 19, and 20, adapted to coact with a pin 27, carried by the inner side of the breech-block, said pin being oblong and pitched at an angle corresponding to the face 26. Upon rearward motion being imparted to the recoil- 7 block actuator through the medium of the action-bar 5 and slide 6 the face 26 of the actuator is forced against the pin 27, and the rear portion of the recoil-block, which rests upon the recoil-block actuator 11, as shown 8 in Fig. 19, is lifted, thus leaving the breech-block free for backward movement. As will be seen by reference to Figs. 17, 19, and 20, the forward end of the recoil-block actuator is provided on its outer side with a recessed 8 shoulder 28, in which fits a lug 29, Fig. 6, on the breech-block slide 6, and it is the coaction between the lug and shoulder that effects rearward movement of the recoil-block actuator. On the rearward movement of the actuator 9 the walls of the recess 22 of the offset 23 engage with the head of the firing-pin and force it backward, thereby bringing a shoulder 29^a, Fig. 15, adjacent to the point 19 into engagement with the inner end of the extractor, 9 thereby forcing its outer end into engagement with the rim of the cartridge and clamping the rim between the extractor 25 and a rigid extractor 30 opposite the extractor 25. It will be seen that the greater the rearward 1 thrust that is imparted to the action-bar the greater will be the force exerted by the extractor on the shell, so that no matter how tightly the shell may be jammed in the barrel it may be removed. 1

The hammer 31 instead of being pivoted in the ordinary manner is pivotally connected with a link 32, which latter is pivoted to the mainspring 33 by a pin 34, the spring being suitably associated with the tang-head by a 1 pin 35. The free end of the spring engages a recess 36 in the under side of the hammer adjacent to its point of pivotal connection with the link, and by this arrangement by a limited throw of the free arm of the spring the hammer is caused to perform its function. The spring being disposed beneath the hammer when the same is cocked, as clearly shown in Fig. 4, provision must be made to house the end of the spring, and this is effected by providing the trigger 37 with a loop or yoke 38, in which the bend of the spring is housed, as clearly shown in Fig. 4. The rear end of the hammer is provided with a sear-notch 39, to be engaged by the trigger to hold it cocked, and the trigger is actuated by a spring 40,

suitably secured to the tang-head. On the pivot 41 of the trigger is arranged a safety-dog 42, Fig. 24, the nose 43 of which is designed to be in alinement with the nose 44 of the trigger, so that both engage with the hammer at the same time. Both the trigger and the dog 42 are provided with a rearward-extending arm 45 and 46, respectively, the arm 45 of the trigger being disposed in the path of movement of a safety-bolt 47, with which is connected a lever 48, fulcrumed between ears 49 on the rear end of the receiver and having its upper free end in engagement with a sliding block 50, to which is connected a finger-piece 51, disposed on the upper side of the receiver. The block 50 has connected with it a pin 52, mounted in a bore 53 in the receiver, said pin being provided on its under side with two notches 54 and 55; which are adapted to be engaged by a spring-pressed catch 56. (Clearly shown in Fig. 4.) When the catch is in engagement with the recess 55, the bolt 47 is free from engagement with the arm of the trigger, so that when the breech-block is in position the trigger may be released. When the finger-piece 51 is moved to the rear, thus to bring the catch into engagement with the recess 54, the safety-bolt 47 will engage with the arm 45 of the trigger, and thus lock it against movement, thereby rendering the firearm positively safe.

The arm 46 of the safety-dog is arranged in the path of movement of a triangular lug 57, carried by the rear end of a lever 58, pivoted upon the trigger-pivot 41, the forward end of the lever being engaged by the rear end of the lifting-dog 13 when the breech-block is in locked position, as shown in Figs. 4 and 22. So long as the breech-block is locked the lever 58 will occupy the position shown in Fig. 22, and thus hold the nose of the safety-dog 42 out of engagement with the sear-notch 39 of the hammer, thus to leave the trigger free to be operated to release the hammer unless the safety-bolt 47 be in engagement with the arm of the trigger; but as soon as the recoil-block is released in the manner before described to permit retraction of the breech-block the lever 58, through the agency of the spring 40, (which has two members, one of which actuates the trigger and the other the safety-dog,) is forced downward, thus to bring the nose 43 of the safety-dog into engagement with the sear-notch, and thus positively lock the hammer against falling until the breech-block shall have been brought to locked position. The operation of the safety-dog will be clearly understood by reference to Fig. 22, wherein it will be seen that if its nose be in engagement with the sear-notch release of the nose of the trigger therefrom will have no effect whatever in releasing the hammer.

The cartridge-carrier 59 (shown in detail in Fig. 8) is pivotally associated with the tang-head by a pin 60 and carries at its rear end a pivoted dog 61, which is actuated by a spring 62 and is adapted normally to lie in the path of the under side of the recoil-block, this spring causing automatic return of the carrier to the position shown in Fig. 4 when the breech-block is in locked position, but will permit of the carrier being moved upward in a slot in the tang-head for the purpose of manually feeding a single cartridge to the magazine when desired, thereby rendering it unnecessary that the magazine be always charged before the firearm can be operated. When the breech-block is moved rearward by the action-bar, the pivoted dog 61 is depressed against the action of the spring 62, which when so depressed tends to raise the carrier 59 by forward pressure against the shoulder on the under side of the pivoted dog, which is then below the pivotal point of the carrier 59. Consequently as the breech-block continues to move rearward the carrier, with a loaded cartridge upon its upper surface, is gradually raised by the action of the spring 62 until the cartridge is brought into position to be forced into the barrel by the forward return movement of the breech-block. When the breech-block is moved far enough forward to permit the dog 61 to rise to its normal position under the action of the spring 62, the forward end of the spring will rise above the pivotal point of the carrier 59 and the spring will act to depress the carrier to its normal position.

The plunger 63 of the magazine-tube is actuated by a spring 64, as usual, this spring being made weak in order to obviate bruising of the ends of the shells by the plunger under the operation of the gun.

The recoil-block actuator 11 carries a pivoted dog 65, having a toe 66, which extends in front of the forward end of the actuator, as shown in Fig. 20. This dog is designed to coact with a cartridge-check 67, Fig. 11, secured to the inner side of the receiver adjacent to its front end, the said check being provided with a toe 68, which normally projects inward across the cartridge-opening of the magazine-tube a sufficient distance to catch on the rim of a shell, the coaction between the dog and the cartridge-check being clearly shown in Fig. 10. When the breech-block is moved backward, the rearmost cartridge in the magazine follows closely the toe of the dog 65 as it slips off the toe of the cartridge-check, the flange of the cartridge being thereby permitted to pass the cartridge-check, so that the cartridge may move rearwardly with the dog 65 and rest upon the carrier, by which it will be raised to a position in the receiver in the path of the forward movement of the breech-block, which will force the cartridge

forward and into the barrel upon its return movement. As the toe of the dog 65 slips off the toe of the cartridge-check the cartridge-check is returned by its spring to its normal position with the toe 68 across the cartridge-opening of the magazine-tube in such position that the escape of the rearmost cartridge remaining therein is prevented. When the hand-grip is thrown rearward to retract the breech-block, the exploded shell is withdrawn and ejected laterally through a cartridge-escape slot 69, and by the time the breech-block has reached the limit of its rearward movement the cartridge-carrier will have been lifted to the position shown in Fig. 3, and thus present a fresh cartridge opposite the barrel to be inserted therein on the forward movement of the breech-block.

In order to provide the proper movement of the breech-block upon the tang-head, the latter is provided at its rear portion with guides 70, formed by insetting that portion housing the hammer, trigger, &c., and on these guides the lower edges of the breech-block bear, the inner walls of the said block bearing against the vertical portions 71 of the tang-head adjacent to the guides.

In some instances it may be desired positively to lock the hand-grip against movement, thus to prevent accidental shifting of the breech-block, and this is effected by moving the finger-piece 51 backward to the limit of its stroke, thereby causing the bolt 47 to ride upon the lug 57 of the lever 58 and positively hold this from being rocked.

The operation of the mechanisms is as follows: Upon rearward movement being imparted to the hand-grip the recoil-block actuator 11 is moved backward, bringing the inclined face 26 thereof into engagement with the lifting-pin 27 on the breech-block and causing upward-tilting movement of the recoil-block and at the same time retraction of the firing-pin and inward movement of the extractor into engagement with the rim of the cartridge through the contact of the shoulder 29^a adjacent to the pin with the extractor. As the recoil-block lifts the lever 58 is freed from engagement with the lifting-dog 13 and the safety-dog 42 is depressed through the spring 40 and caused to engage with the sear-notch of the hammer, thereby rendering the trigger inoperative for releasing the hammer until the breech-block shall have again been brought to its normal or locked position. As the breech-block recedes cocking of the hammer is effected, and at the same time the cartridge-carrier is thrown up by contact between the under side of the recoil-block and the pivoted dog 61 of the carrier, thereby lifting a cartridge to position opposite the barrel to be inserted on the return of the breech-block. When the hand-grip is moved to re-

turn the breech-block, the initial movement forces the recoil-block actuator to its normal position and moves the offset 23 out of engagement with the head of the firing-pin, allowing the same to drop back to its firing position; but the said offset holds the firing-pin from forward projection until the breech-block shall have been seated, thereby to prevent the point 19 from contacting with the cap of the cartridge. During this period and up to the point of the seating of the breech-block the dog 42 is in engagement with the sear-notch, thus locking it against operation; but at the instant the breech-block is seated in its forward position the rear end of the recoil-block, which is beveled at 72 for the purpose, drops down over the abutment 24 of the tang-head and brings the lifting-dog 13 into engagement with the forward end of the lever 58, thereby lifting its rear end and forcing the safety-dog out of engagement with the sear-notch, thus leaving the trigger free to be operated. The operations of all of the parts are smooth, so that no jarring results, and no matter how rapidly the hand-grip may be manipulated the successive actions of the parts take place with certainty and thorough effectiveness.

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

1. In a firearm, a reciprocatory breech-block, a recoil-block pivotally mounted therein, a firing-pin slidably mounted in said breech-block and extending through said recoil-block, an extractor having a member disposed in the path of movement of the firing-pin, and a reciprocatory actuator for said recoil-block mounted in the breech-block and adapted to engage the firing-pin to operate the extractor.

2. In a firearm, the combination with the tang-head, of a breech-block, a recoil-block pivotally mounted therein and normally abutting against the tang-head, a slidable firing-pin extending through the recoil-block, an extractor carried by the breech-block and having a member disposed in the path of movement of the firing-pin, a member for lifting the recoil-block out of engagement with the tang-head and adapted to engage the firing-pin, and thereby to cause the latter to actuate the extractor.

3. In a firearm, a reciprocatory breech-block, a recoil-block housed within said breech-block and pivoted near the forward end thereof, a tang-head having an abutment with which the recoil-block engages, a reciprocatory recoil-block actuator housed within the breech-block which permits the engagement of said recoil-block with said abutment, and means for reciprocating the actuator to cause it on one movement to free the recoil-block from engagement with the abutment and on

the opposite movement to permit the recoil-block to be locked in engagement therewith.

4. In a firearm, a reciprocatory breech-block, a pivoted recoil-block carried thereby, a firing-pin extending through the recoil-block, a reciprocatory recoil-block actuator mounted in the breech-block and having a member to engage the firing-pin, an extractor having a member disposed in the path of movement of the firing-pin, and means for reciprocating the actuator to cause it to retract the firing-pin and thus actuate the extractor.

5. In a firearm, the combination with a breech-block and a pivoted extractor carried thereby, of a firing-pin having a shoulder disposed in the path of movement of the inner end of the extractor, a reciprocatory member carried by said breech-block and adapted to engage said firing-pin, and means for reciprocating said member to cause it to retract said firing-pin and thereby actuate said extractor.

6. In a firearm, the combination with the tang-head, of a breech-block disposed to slide thereon, a recoil-block carried by the breech-block and having its rear end normally locked against movement by coaction with a part of the tang-head, a recoil-block actuator slidably mounted in the breech-block, and mechanism, to reciprocate said recoil-block actuator to throw the recoil-block out of engagement with the abutment, and then to retract the breech-block.

7. In a firearm, a trigger carrying a safety-dog having its nose disposed in alinement with that of the trigger, a lever engaging the dog and having a normal tendency to hold the dog in engagement with the hammer thus to prevent operation of the trigger from releasing the hammer, a breech-block, and a recoil-block having a dog to engage the front end of the lever to hold it out of engagement with the dog when the breech-block is in locked position.

8. In a firearm, a trigger, a safety-dog carried thereby and having a normal tendency to engage the lip of the hammer, a breech-block, a recoil-block carried thereby, a lever having one end in engagement with the safety-dog, a spring-actuated lifting-dog in engagement with the other end of the lever and operating to hold the safety-dog out of engagement with the hammer when the breech-block is locked, and means for throwing the lifting-dog out of engagement with the lever, when the breech-block is retracted thus to lock the hammer against release by draft on the trigger.

9. In a firearm, a trigger, a safety-dog carried thereby and adapted normally to engage with the hammer, a lever having one end disposed to engage the dog to hold it in engagement with the hammer, a breech-block, a recoil-block carried thereby, a lifting-dog car-

ried by the recoil-block and engaging the free end of the lever when the breech-block is locked thus to hold the lever out of engagement with the safety-dog, a recoil-block actuator, a locking-dog carried by the recoil-block and operating normally to hold the actuator against retraction, and means for raising the lifting-dog thus to depress the locking-dog to permit rearward movement of the recoil-block actuator.

10. In a firearm, a mainspring, a link pivotally connected at one end thereto and a hammer pivotally connected to the other end of the link.

11. In a firearm, a mainspring, a link pivotally connected at one end thereto, a hammer pivotally connected to the other end of the link, and a trigger having a loop to house the bend of the mainspring.

12. In a firearm, the combination with a trigger having a rearwardly-extending projection, a safety-dog carried by the trigger, a lever co-acting with the safety-dog to hold the same in engagement with the hammer when the breech-block is retracted, means operating to hold the lever out of engagement with the safety-dog when the breech-block is in locked position, and safety means comprising a bolt and actuating mechanism therefor adapted to be moved into engagement with the arm of the trigger and with the rear end of the safety-dog, thus to lock the trigger and the breech-block against operation.

13. In a firearm, the combination with a reciprocatory breech-block carrying a pivoted recoil-block and means for locking and releasing the same, of a tang-head, a cartridge-carrier pivotally connected with the tang-head, a dog pivoted in the tail of the carrier and disposed in the path of movement of the recoil-block, and a spring engaging said dog slightly above the pivotal point to hold the dog normally upward and acting, when the dog is depressed, to raise the cartridge-carrier.

14. In a firearm, the combination with a breech-block provided on one side with a pin, of a pivoted recoil-block, a reciprocatory recoil-block actuator having a beveled face to engage the pin thereby to cause lifting of the recoil-block when the breech-block is retracted, and an action-bar for operating the said actuator.

15. In a firearm, the combination with the receiver, and a cartridge-check carried thereby, of a breech-block, a recoil-block carried thereby, and a recoil-block actuator carrying a pivoted dog adapted on rearward movement of the breech-block to ride over the cartridge-check, and on return movement of the breech-block to force the check laterally and thus release the cartridge.

16. In a firearm, the combination with the hand-grip having an action-bar connected

therewith, of a reciprocatory breech-block, a
pivoted recoil-block carried thereby, a recoil-
block actuator, and a breech-block slide con-
nected with the actuator and having an articu-
5 lated connection with the rear end of the ac-
tion-bar.

17. In a firearm, the combination with the re-
ceiver provided in its side with a longitudinal
groove, of a hand-grip carrying an action-bar
10 working in the groove, a reciprocatory breech-
block, a pivoted recoil-block carried thereby,

a recoil-block actuator, and a breech-block
slide coöperatively connected with the recoil-
block actuator and having an articulated con-
nection with the rear end of the action-bar. 15

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

WASHINGTON FRANK PLYMPTON.

Witnesses:

WILLIAM I. SWORPE,
BENJAMIN F. CHASER