

No. 713,623.

Patented Nov. 18, 1902.

S. J. EVANS.  
SMALL ARMS.

(Application filed June 20, 1900.)

(No Model.)

4 Sheets—Sheet 1.

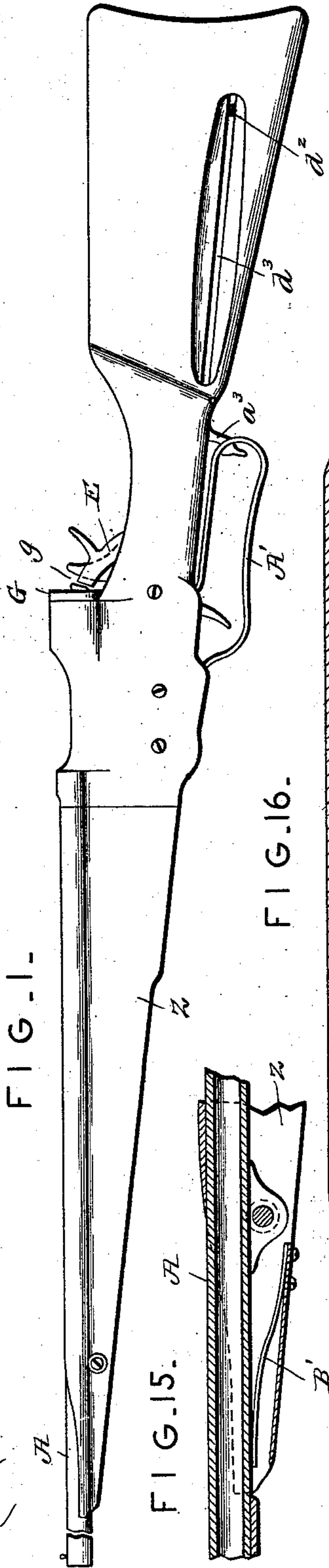
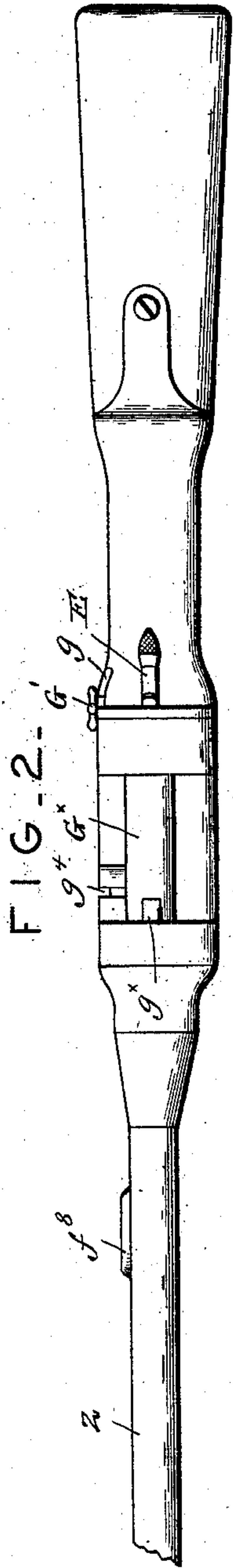
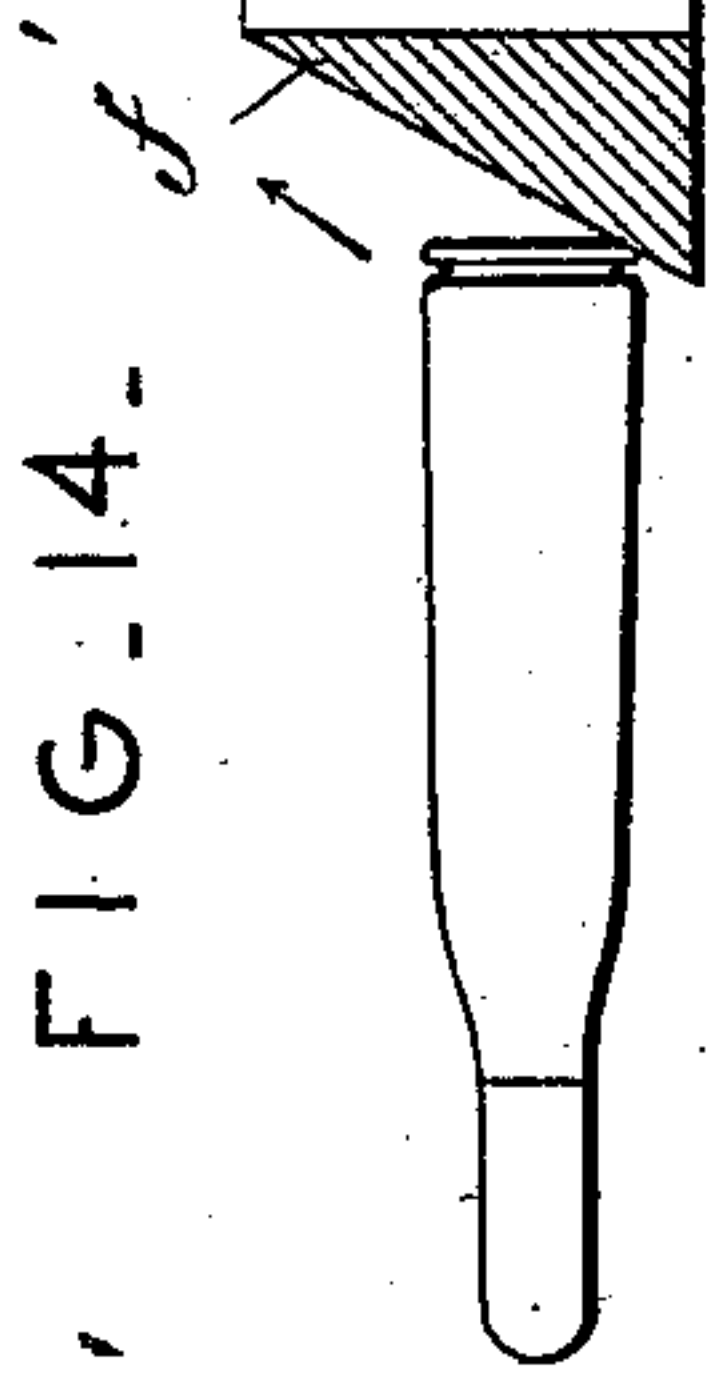
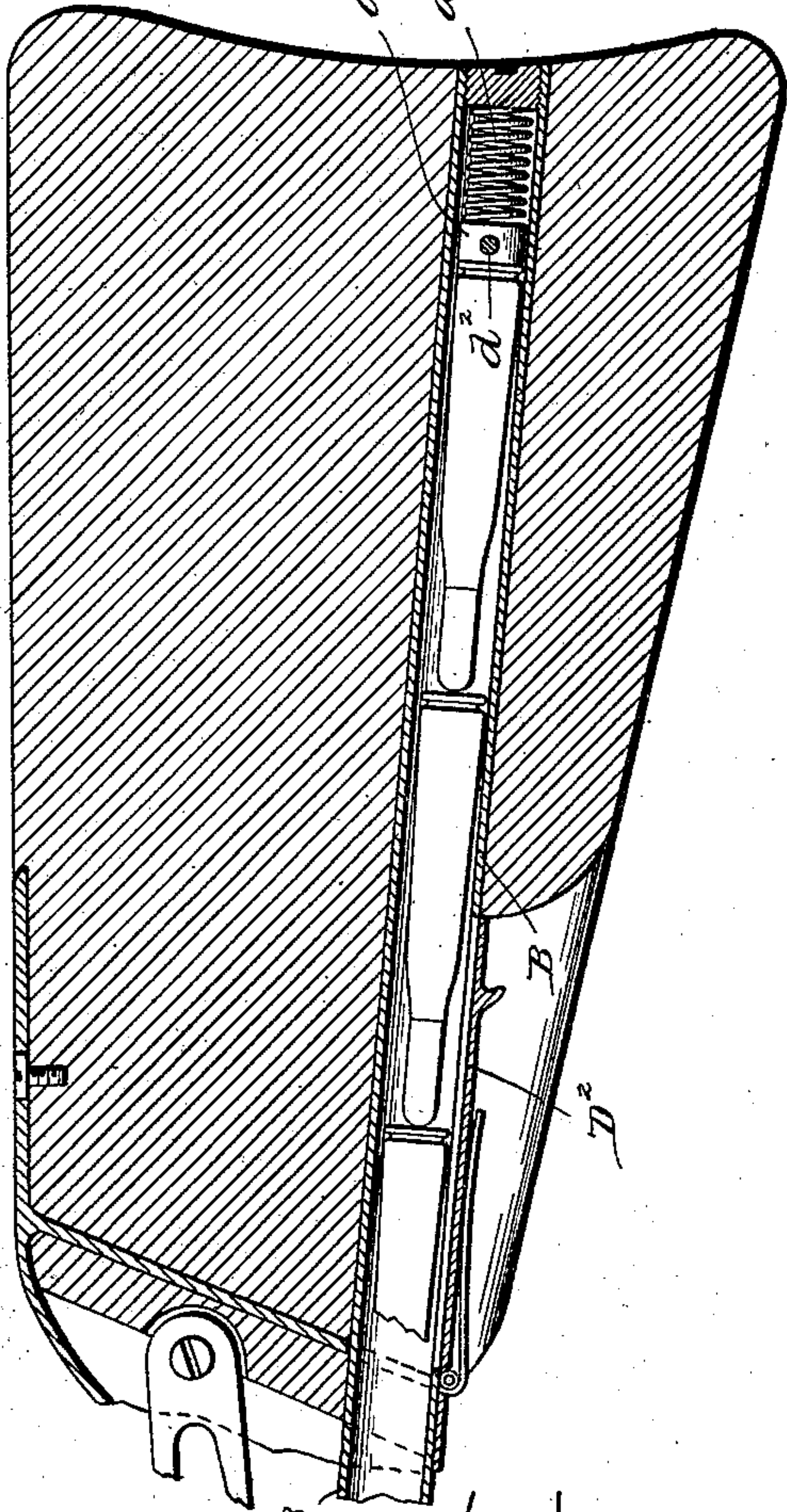


FIG. 16.



ATTEST-

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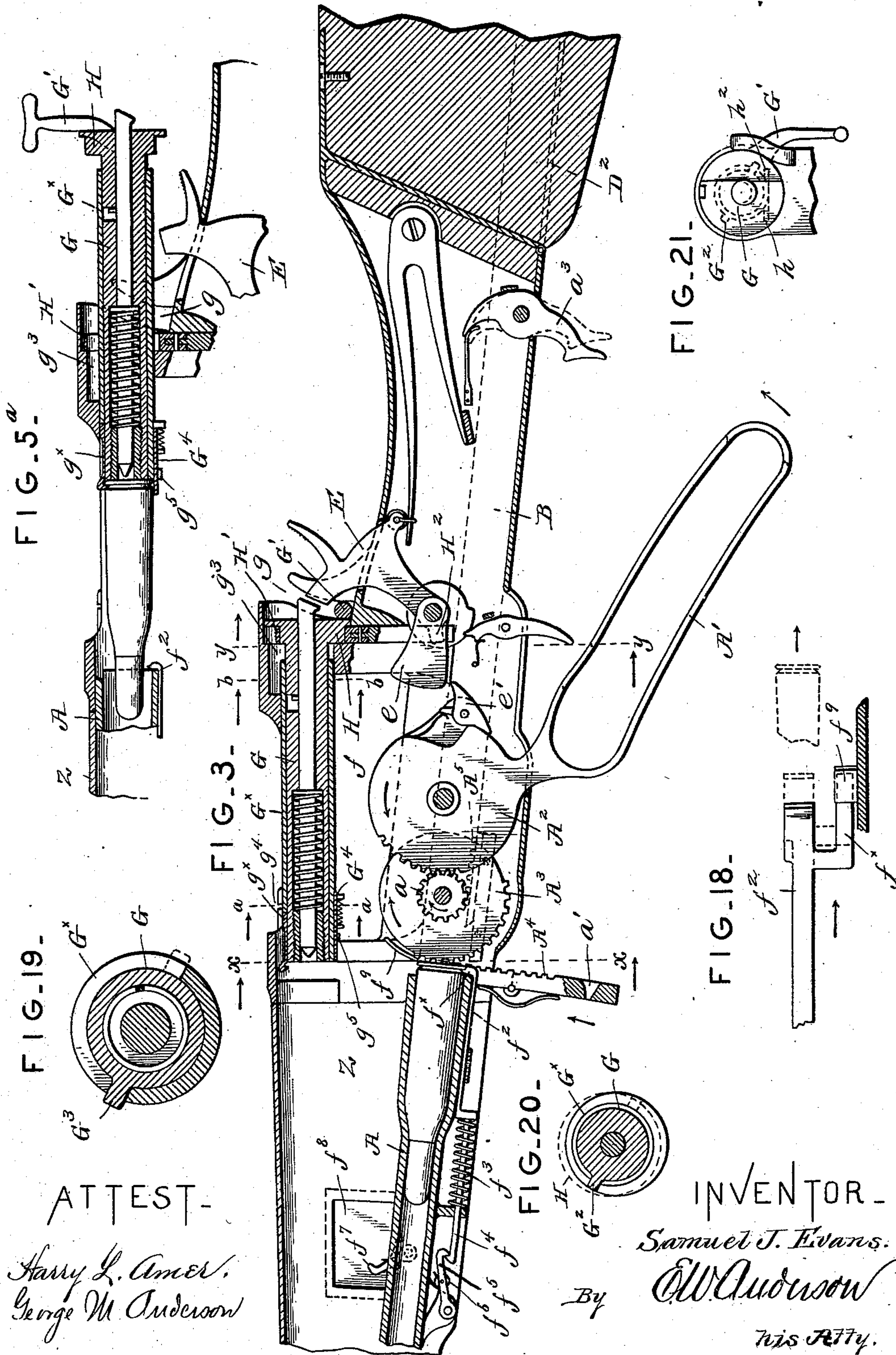
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4 Sheets—Sheet 2.



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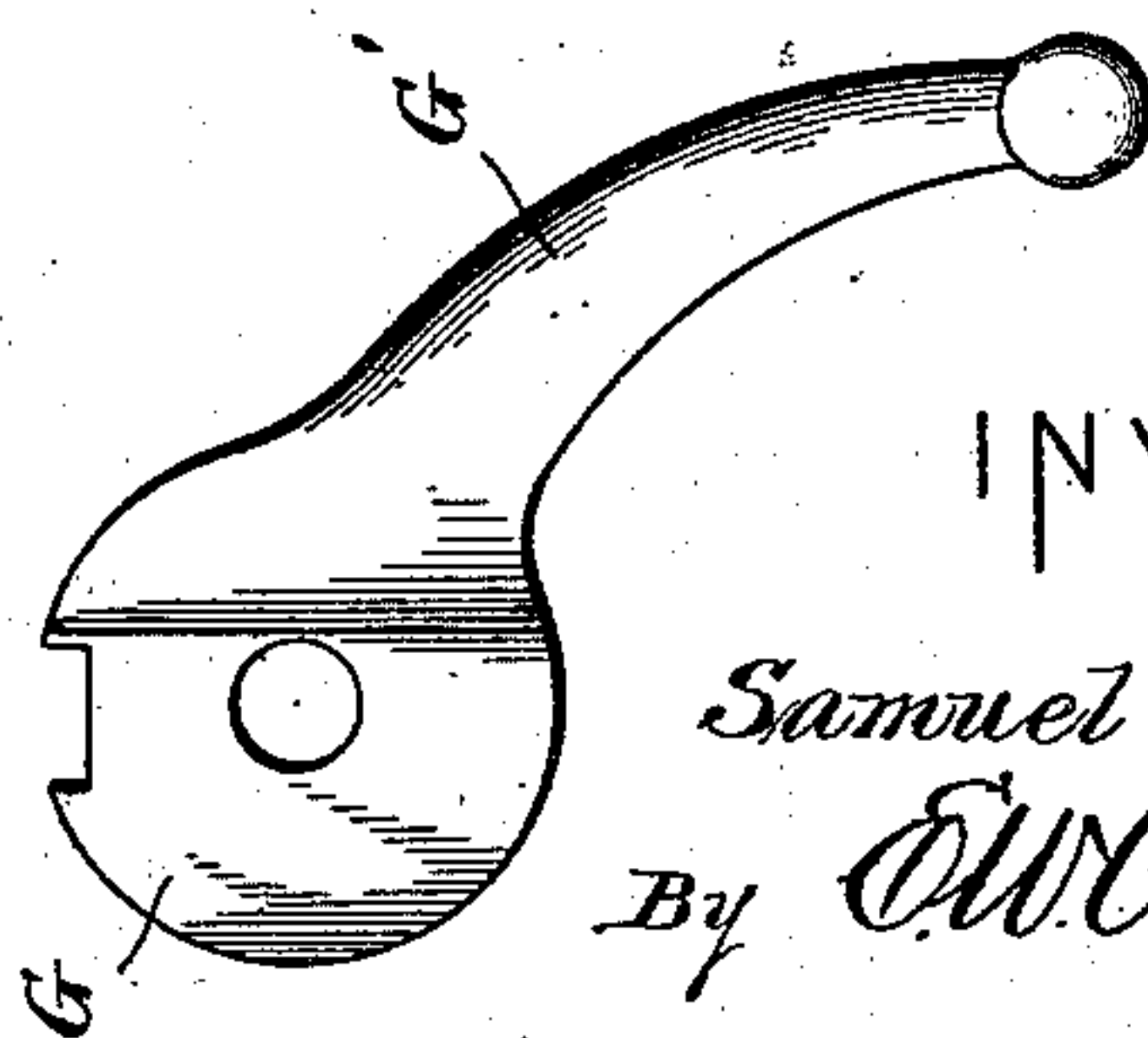
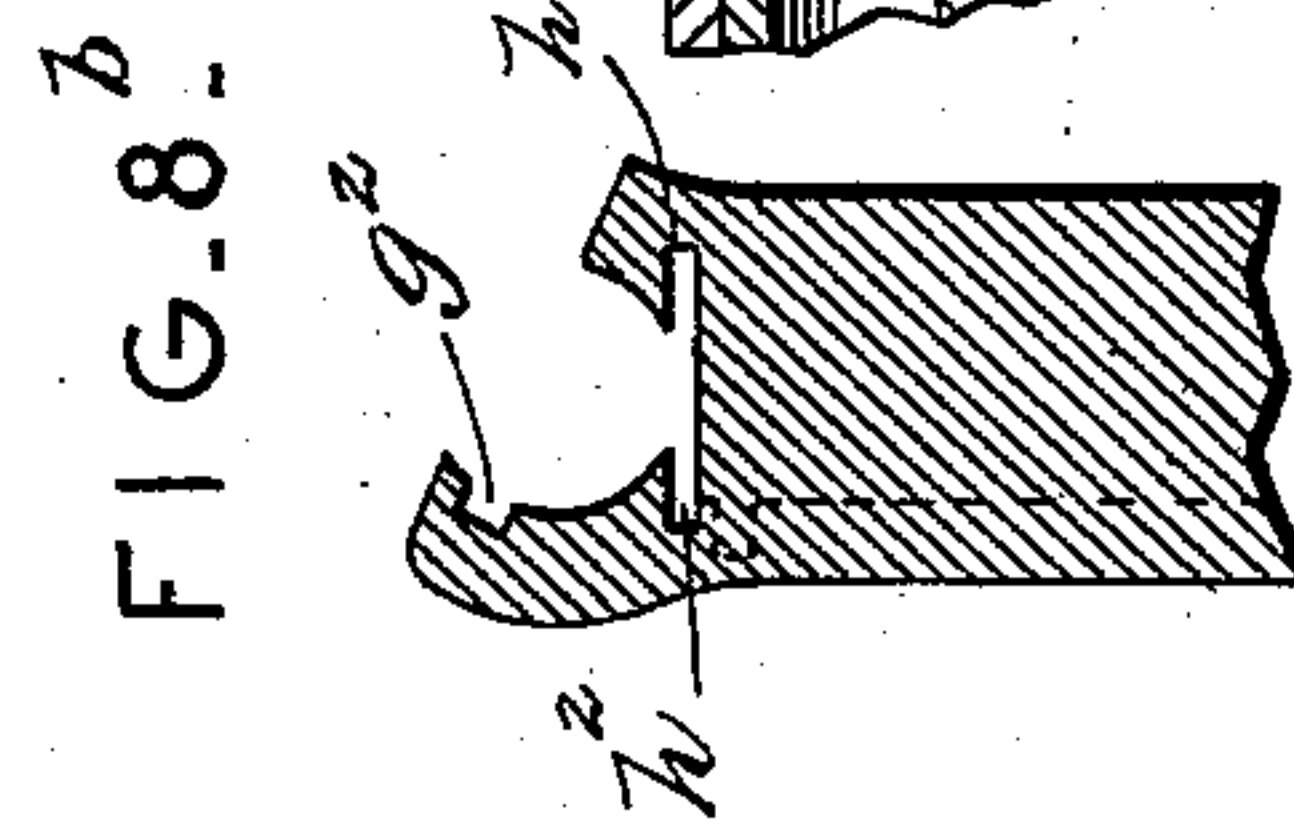
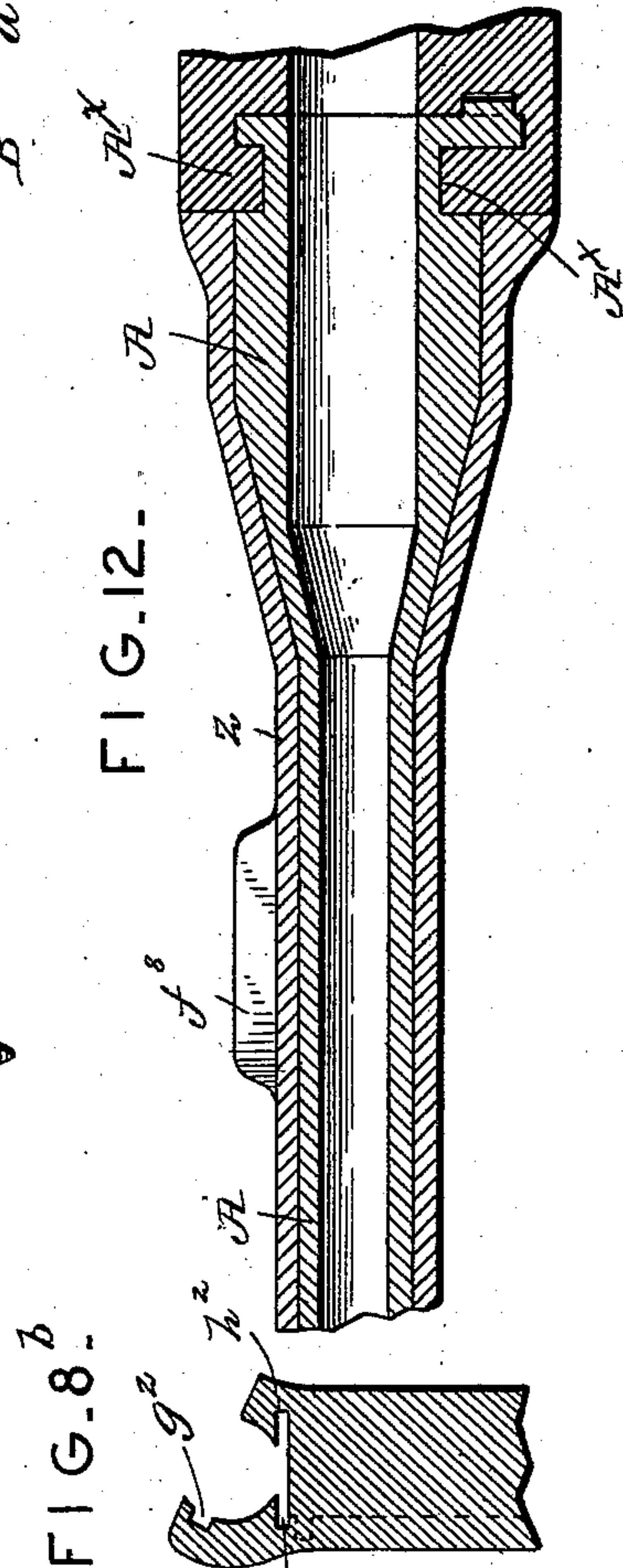
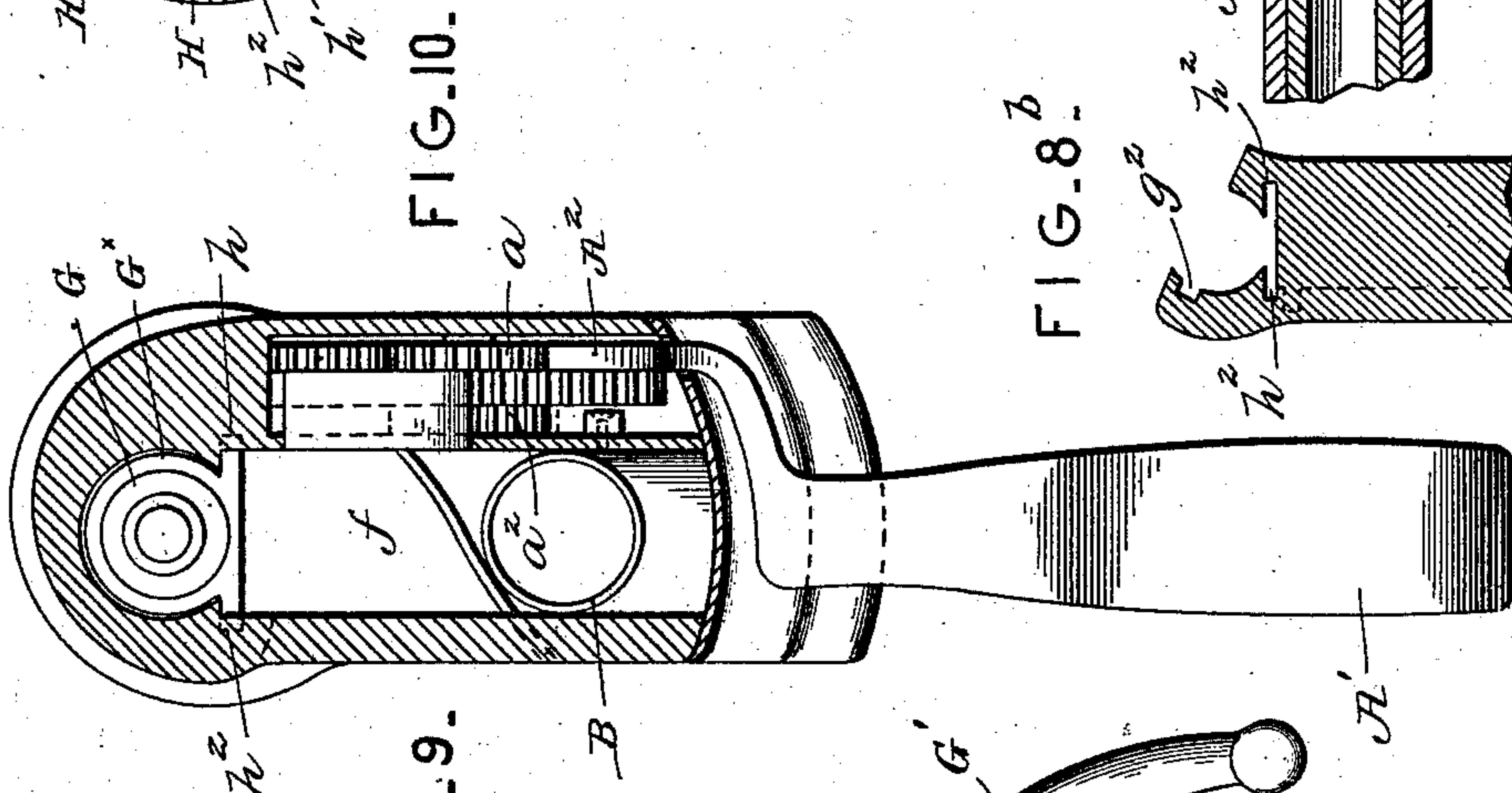
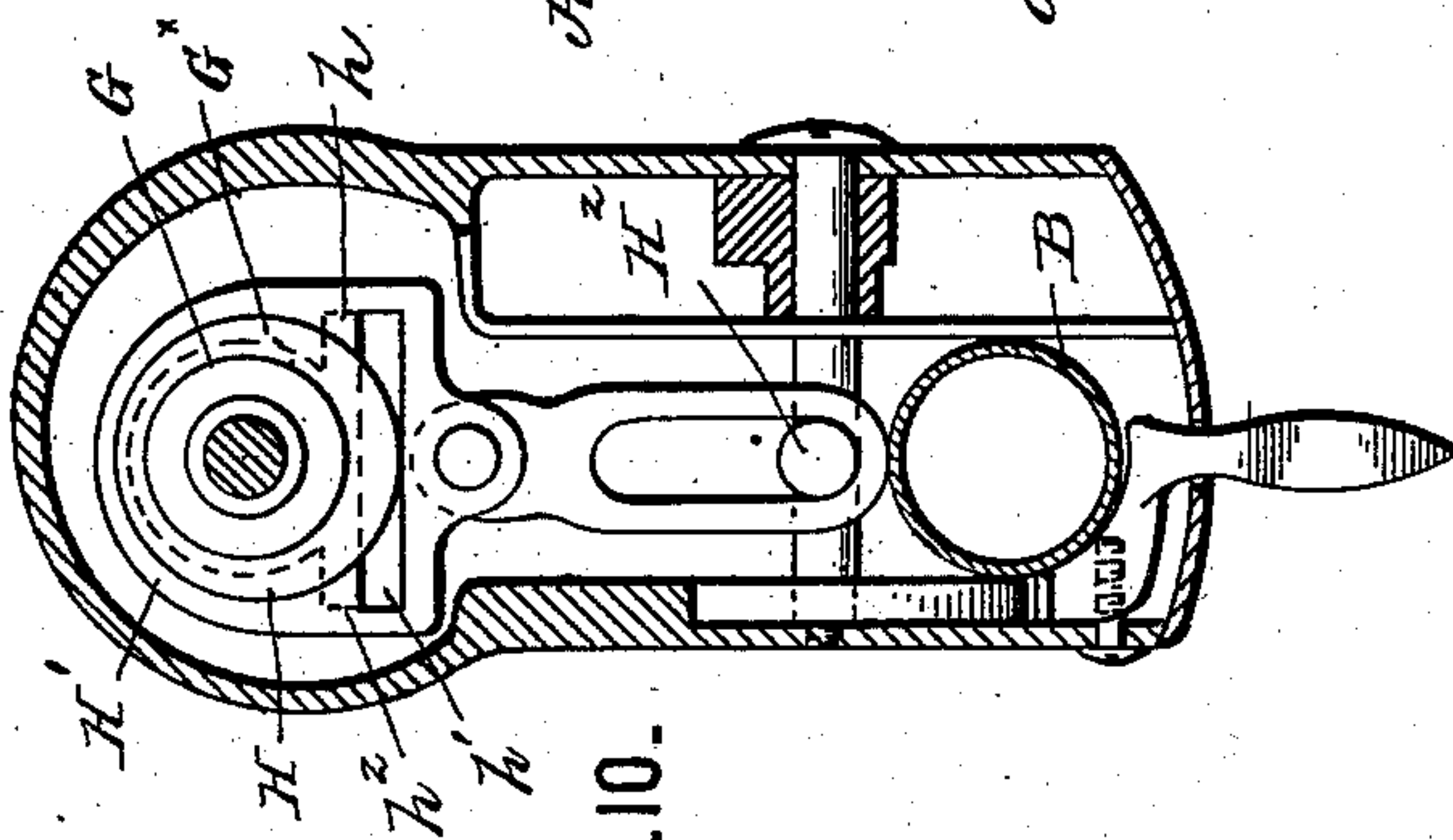
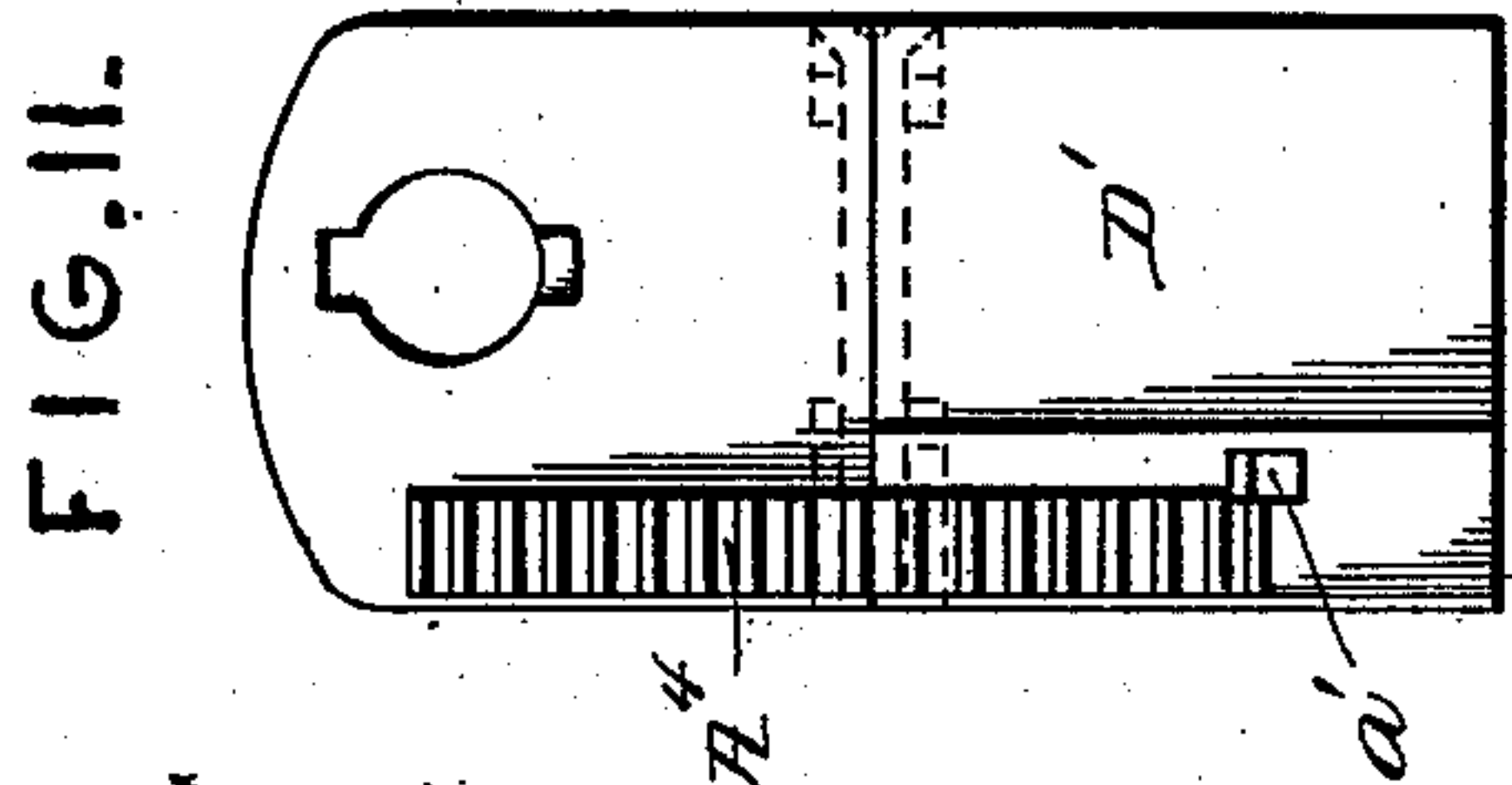
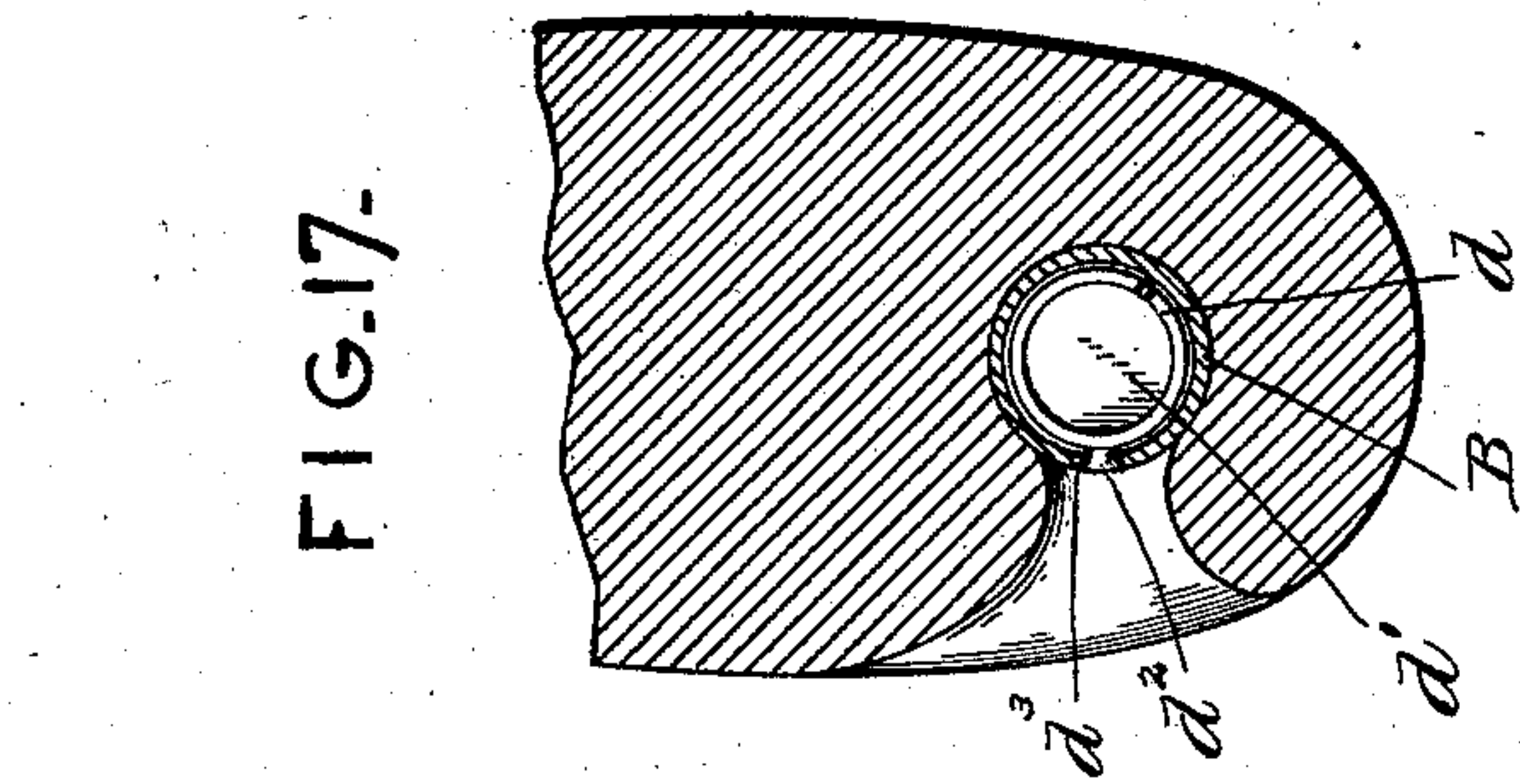


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4 Sheets—Sheet 4.



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# UNITED STATES PATENT OFFICE.

SAMUEL J. EVANS, OF ROANOKE, VIRGINIA.

## SMALL-ARMS.

SPECIFICATION forming part of Letters Patent No. 713,623, dated November 18, 1902.

Application filed June 20, 1900. Serial No. 20,990. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL J. EVANS, a citizen of the United States, and a resident of Roanoke, in the county of Roanoke and State of Virginia, have made a certain new and useful invention in Small-Arms; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of my gun, partly broken away. Fig. 2 is a plan view of the same. Fig. 3 is a central longitudinal vertical section of the same on a larger scale, the parts being in positions assumed after firing the piece and after the barrel is brought in line with the magazine. Fig. 4 is a view similar to Fig. 3 with parts in position for firing the piece. Fig. 5 is a view similar to Figs. 3 and 4 and showing parts in positions assumed after firing the piece and rotating the breech-bolt. Fig. 5<sup>a</sup> is a companion view to Fig. 5, showing breech-bolt retracted. Fig. 6 is a sectional detail view showing the shell partially retracted and adjacent parts. Fig. 7 is a detail view illustrating plate G<sup>4</sup> in its forwardly-projected position and adjacent parts. Fig. 8 is a detail view of the eccentric and its strap for cocking the piece. Fig. 8<sup>a</sup> is a detail view of the breech-bolt and its sleeve. Fig. 8<sup>b</sup> is a sectional detail view of the receiver to show guideways h<sup>2</sup> and g<sup>2</sup>. Fig. 9 is a section on the line x x, Fig. 3. Fig. 10 is a section on the line y y, Fig. 3. Fig. 11 shows door D' in front elevation. Fig. 12 is a detail sectional view showing the means for bracing the barrel against the force of the discharge. Fig. 13 is a detail view of the breech-bolt and its lever. Fig. 14 is a view illustrating the wall f' of the shell-exit and the manner of ejection of the shell. Fig. 15 is a sectional detail view showing the barrel and its actuating-spring. Fig. 16 is a longitudinal section through the stock, showing the magazine and adjacent parts. Fig. 17 is a transverse section of the stock through the magazine. Fig. 18 is a detail view of ejecting-finger f<sup>2</sup>, its lateral extension f<sup>x</sup>, and the inclined wall f<sup>9</sup>. Fig. 19 is a transverse sec-

tion of the breech-bolt and its sleeve on the line of the lug G<sup>3</sup>. Fig. 20 is a similar view on the line of the lug G<sup>2</sup>. Fig. 21 is a rear view of the breech-bolt and its handle-lever, showing such lever locked in its cam-slot. Fig. 22 is a detail fragmentary view showing the rack A<sup>5</sup> seated in rack A<sup>4</sup> in position to be released therefrom before the engagement of the teeth of gear-wheel A<sup>3</sup> with the teeth of rack A<sup>4</sup>.

This invention has relation to certain new and useful improvements in magazine small-arms, and has for its object the provision of such an arm which, first, will be susceptible of use as a single-loader with the magazine held in reserve and also well adapted for such use when the magazine is empty; second, in which the cut-off is entirely automatic and protected from inadvertent operation; third, in which the magazine may be readily loaded or replenished with single cartridges; fourth, in which the floor of the receiver is of such form that cartridges may be laid upon it and without assistance of the hand pushed by the bolt into the chamber, and this whether the magazine be empty or charged and held in reserve; fifth, in which the bolt is in one piece with its head and handle; sixth, in which the bolt is sustained under the force of discharge by lugs at its forward and rear ends engaging slots in the wall of the receiver and in which an auxiliary support is provided at the rear end thereof by the handle also engaging a slot in the receiver; seventh, in which the initial movement in unlocking the bolt and starting the empty shell is given by a movement of rotation by a cam-action and in which the final seating of the cartridge and locking of the bolt is accomplished in a similar manner; eighth, in which the bolt must be locked before the firing-pin can reach the primer; ninth, in which in case of misfire the piece may be recocked without moving the bolt; tenth, in which the extractor is strong and does not partake of the bolt's rotation; eleventh, in which the ejector will throw the empty shell clear of the gun and soldier and without excess of force; twelfth, in which the cocking of the piece is effected by return movement of the barrel in loading from the magazine and independently of the bolt; thirteenth, in which cocking of the piece is effected by a



simple rotation of the bolt when using as a single-loader; fourteenth, in which the mechanism is strong, light, and simple, composed of few parts, readily dismantled without the use of special tools, and readily assembled with few screws and pins, and, fifteenth, in which easy and smooth working of the mechanism, whether the gun be clean or foul, is not sacrificed for extreme rapidity of action.

With these objects in view the invention consists, broadly, in small-arms having a barrel adapted to move downwardly at the breech end thereof in line with the magazine, means for effecting such movement of the barrel, means for ejecting the empty shell in the course of such movement, means for impelling the cartridges from the magazine into the chamber, means for returning the barrel to normal position, and means for cocking the piece through such return movement of the barrel.

Referring to the accompanying drawings, the letter A designates the barrel of the gun, which is intermediately pivoted to swing downwardly at the breech end under the influence of the strong spring B' in line with the magazine B, which is located in the lower portion of the stock longitudinally thereof. The barrel is returned to normal position by upward movement of the main lever A', directly connected with the gear-wheel A<sup>2</sup>, in mesh with the pinion  $\alpha$  upon the shaft of gear-wheel A<sup>3</sup>, in mesh with the arcuate rack A<sup>4</sup>, depending from the rear extremity of the barrel, to which it is rigidly connected. The barrel is locked in normal position by a second rack A<sup>5</sup> at about right angles to said first-named rack, in a locking-recess  $\alpha'$  of which it enters just before the barrel has stopped moving and in which it is further forced after the barrel has ceased to move by engagement therewith of a second pinion  $\alpha^2$  upon the shaft of gear-wheel A<sup>3</sup>, the teeth of gear-wheel A<sup>3</sup> being at the same time—i. e., after the barrel has ceased to move—withdrawn from mesh with the teeth of rack A<sup>4</sup>.

The magazine-chamber B has a plug at its rear extremity which screws thereinto at the end of the stock. The cartridges are placed in line in this chamber and are pressed forwardly by a strong spiral spring  $\bar{d}$ . The forward opening of the magazine is guarded by a vertical door D', hinged to and moving with the rack A<sup>4</sup> and spring-pressed to resist the pressure of the spring  $\bar{d}$  upon the cartridges. It will thus be noted that when the piece is loaded from the magazine and the barrel starts to return to normal position this door D' immediately and automatically cuts off the cartridge next in line and is prevented from being inadvertently operated by the slotted shell Z, which incloses the barrel and in which it works at the breech end. This door D' may be pressed upwardly upon its hinges by hand and the magazine loaded at such point, or a second horizontal spring-pressed door D<sup>2</sup> at the lower forward portion of the stock may

be utilized for this purpose. A follower  $\bar{d}'$  is attached to the spring  $\bar{d}$  at its forward end and is provided with a push-button  $\bar{d}^2$ , extending through a slot  $\bar{d}^3$  in the stock, whereby the spring  $\bar{d}$  may be pressed to the rear or retracted in loading the magazine.

The hammer E of the piece has a forwardly-projecting lug  $e$  upon its pivot-pin, which lug is engaged by a spring-catch  $e'$ , carried by the gear A<sup>2</sup>, which is in direct connection with the main lever A' to cock the hammer upon rotation of said gear when the barrel is returning to normal position. This catch  $e'$  springs past the lug  $e$  upon reverse rotation of such gear. The lever A', which is of looped form, is slotted for the passage of the trigger and is provided with a retaining-catch  $\alpha^3$ . This catch  $\alpha^3$  acts as a safeguard to prevent accidental movement of lever A'.

At the side of the receiver, about intermediate of its height, is located the exit  $f$  for the empty shells, having an inclined rear wall  $f'$  and with which the barrel is brought in line when lowered at the breech end. At such time the ejecting-finger  $f^2$ , engaging the base-groove of the shell, is instantaneously thrust outwardly by its strong spring  $f^3$  to eject the shell. The rod  $f^4$ , carrying the ejecting-spring, has a catch projection in engagement with a pivoted spring-catch  $f^5$  to hold such spring retracted until the barrel is almost in line with the shell-exit, when the rear arm of said catch, through a laterally-extending roller  $f^6$  thereof, is brought against a second pivoted spring-catch  $f^7$ , located in an offset chamber  $f^8$  of the shell Z, and released from such engagement. Upon continued movement of the barrel a lateral extension  $f^x$  of the ejecting-finger is brought against an inclined wall  $f^9$  and retracted to compress its spring, the rod carrying the same being again caught and held by the catch  $f^5$ , which has sprung past the catch  $f^7$ . Upon reverse movement of the barrel the catch  $f^7$  gives way to allow passage of the catch  $f^5$ .

I will now proceed to describe the means whereby the piece is susceptible of use as a single-loader with the magazine held in reserve.

The breech-bolt G, which when the piece is loaded from the magazine remains stationary and untouched, is arranged to have both a rotary and a sliding movement in the receiver under the influence of power exerted upon the handle-lever G' thereof, which works under rotation in a cam-slot  $g$  in the wall of such receiver to unlock and slightly retract the bolt to give the initial movement in retracting the empty shell, which is gripped at its base-groove by an extractor  $g^x$  upon a sleeve G<sup>x</sup>, surrounding and carried by the bolt and having bearings in the receiver. The handle-lever of the bolt is thus locked in its cam-slot to support the bolt against the force of the discharge, an auxiliary support being provided in a radial lug G<sup>2</sup> of the bolt, which lug has a sliding movement in a guide-



way  $g^2$  in the wall of the receiver when the bolt is pulled back to loading position, but which when the bolt is pushed forward and rotated by pressing down upon the handle-lever, which turns in its cam-slot, enters an arcuate slot  $g^3$  in the wall of the receiver. A second auxiliary support is provided by a lug  $G^3$  at the forward end of the bolt and which under rotation of the bolt enters a second arcuate slot  $g^4$  in the wall of the receiver. The lug  $G^2$  when the bolt is pulled back to load slides throughout such movement in the guideway  $g^2$ , a suitable stop in which groove limits the backward movement of the bolt. This way  $g^2$  also prevents any rotation of the bolt throughout such movement. An additional stop to limit backward movement of the bolt is provided at  $g$ . The bolt when thus pulled back to loading position drags the shell with it by its extractor aforesaid, which shell when entirely out of the chamber drops from said extractor through the shell-exit  $f$ , which has an inclined lower wall. Acting in connection with the extractor  $g'$  is a spring-pressed plate  $G^4$ , carried by the sleeve  $G^x$  and with which said plate has a sliding engagement. When the rearmost part of the shell is retracted from the chamber, plate  $G$  slides forwardly thereunder to hold the shell in engagement with such extractor and remains thereunder until the time when the forwardmost part of the shell is being retracted from the chamber, when such plate is retracted underneath the breech-bolt and sleeve thereof to allow the shell to escape. This retraction is accomplished by a lever  $g^5$ , fulcrumed intermediately thereof to sleeve  $G^x$  and pivoted at one end portion thereof to the plate and having its opposite end portion working in a slot  $g^6$  of the receiver and abutting against the rear wall of such slot to effect the retraction at the proper time. In loading, the cartridge is slid back upon the plate into engagement at its base-groove with the extractor and is so held and forced into the chamber in moving the bolt forwardly, the plate moving back under the bolt and its sleeve through abutment of the lug  $g^7$  of the plate against the forward wall of the slot  $g^6$ . The receiver is open at the bottom, and the sleeve  $G^x$  is provided, therefore, with bearings in the side walls of such receiver. The shell-exit communicates with the open bottom of the receiver.

In order to cock the piece, I provide the eccentric  $H$  upon the bolt, forming the head thereof, which under rotation of the bolt actuates the strap  $H'$ , having a connection with the lug  $H^2$  upon the hammer-shaft. In order to keep this strap in raised position when the piece is cocked and the bolt and eccentric drawn back to load, the longitudinal ribs  $h$  upon the sleeve  $G^x$  (having bearings in the receiver-walls at  $h^2$ ) as the strap is being raised by rotation of the bolt (which also slightly retracts the bolt and its sleeve, as

aforesaid) enter ways  $h'$  in said strap upon one side thereof, while the eccentric  $H$  is just ready to disengage from the strap upon the opposite side thereof. These ribs and ways remain in engagement in rearward and back movement of the bolt and only part company when the bolt is rotated to give it the final movement forward to seat the cartridge in the chamber.

In operation with the magazine in use the main lever  $A'$  is pulled down a short distance to disengage the rack  $A^5$  from its seat in the rack  $A^4$  to release the barrel, such movement of lever  $A'$  also establishing the engagement of the teeth of gear-wheel  $A^3$  and rack  $A^4$ , the barrel immediately dropping at the breech end under the influence of its spring  $B'$  into line with the magazine, the empty shell being in the meantime ejected, and a new cartridge is shot into place. This movement of the barrel under the influence of its spring fully lowers the lever  $A'$  through engagement of rack  $A^4$  with gear-wheel  $A^3$ . The main lever  $A'$  is then pulled upwardly to return the barrel to normal position, where it is locked by the rack  $A^5$ , and to automatically cock the piece ready for use.

In operation as a single-loader the bolt is first rotated a semirevolution, being at the same time drawn back a short distance by the action of the cam-slot upon its lever to start the empty shell. This rotation of the bolt also unlocks it, bringing it in position for backward movement to leave space for the insertion of the cartridge and likewise cocks the piece through the cam-head of the bolt in connection with the hammer.

The barrel is braced against the force of the discharge by the extensions  $A^x$  of the frame working in the arcuate grooves  $A^x$  of the barrel, Fig. 12.

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

1. In small-arms, the magazine, the barrel adapted to move downwardly at the breech end in line with such magazine, means for automatically effecting such movement of the barrel, and means for returning the barrel to normal position, substantially as specified.

2. In small-arms, the magazine, the barrel adapted to move downwardly at the breech end in line with such magazine, means for automatically ejecting the empty shell in the course of such movement, means for automatically effecting such movement of the barrel, and means for returning the barrel to normal position, substantially as specified.

3. In small-arms, the magazine, the barrel adapted to move downwardly at the breech end in line with such magazine, means for automatically effecting such movement, means for returning the barrel to normal position, and means for automatically cocking the piece through such return movement of the barrel, substantially as specified.

4. In small-arms, the magazine, the barrel



adapted to move downwardly at the breech end in line with such magazine, means for automatically effecting such movement of the barrel, means for returning the barrel to normal position, and means for automatically locking the barrel in normal position, substantially as specified.

5. In small-arms, the magazine, the barrel, adapted to move downwardly at the breech end in line with such magazine, and having a rack, a spring for effecting such movement of the barrel, a train of gear-wheels in engagement with such rack, and a lever actuating said gear-train to return the barrel to normal position, substantially as specified.

6. In small-arms, the magazine, the barrel adapted to move downwardly at the breech end in line with such magazine, and having a rack, a spring for effecting such movement of the barrel, a train of gear-wheels in engagement with such rack, a lever engaging said train of gear to return the barrel to normal position, and a second rack in engagement with such train of gear, and arranged to lock said barrel in normal position, substantially as specified.

7. In small-arms, the magazine, the barrel adapted to move downwardly at the breech end in line with such magazine, and having a rack, a spring for effecting such movement of the barrel, a train of gear-wheels in engagement with such rack, a lever engaging said gear-train to return the barrel to normal position, and means for cocking the piece through movement of said gear-train, substantially as specified.

8. In small-arms, the magazine, the barrel adapted to move downwardly at the breech end in line with such magazine, and having a rack, a spring for effecting such movement of the barrel, means for ejecting the empty shell in the course of such movement, a train of gear-wheels in engagement with such a rack, and a lever engaging said gear-train to return the barrel to normal position, substantially as specified.

9. In small-arms, the magazine, the barrel adapted to move downwardly at the breech end in line with such magazine, a spring for effecting such movement of the barrel, means for returning the barrel to normal position, a shell-exit with which said barrel is brought in line in the course of its movement, a spring-finger gripping the shell, a catch engaging said finger to hold it back, and means for automatically releasing and for automatically reengaging such catch, substantially as specified.

10. In small-arms, the magazine, the barrel adapted to swing downwardly at the breech end in line with such magazine, and having a rack, a spring for effecting such movement of the barrel, a train of gear in engagement with such rack, a lever engaging said gear-train to return the barrel to normal position, a shell-exit with which the barrel is brought in line in the course of its movement, a spring-finger

gripping the shell, a catch engaging said finger to hold it back, and means for automatically releasing and for automatically reengaging such catch through such movement of the barrel, substantially as specified.

11. In small-arms, the magazine, the barrel arranged to swing downwardly at the breech end in line with such magazine, a spring for effecting such movement of the barrel, means for returning the barrel to normal position, and a gate arranged to automatically cut off said magazine as the barrel returns to normal position, substantially as specified.

12. In small-arms, the magazine, the barrel, arranged to swing downwardly at the breech end in line with such magazine, a spring for effecting such movement of the barrel, means for returning the barrel to normal position, and a gate attached to and moving with the barrel to automatically cut off said magazine, substantially as specified.

13. In small-arms, the magazine, the spiral spring at the rear of said magazine, the barrel arranged to swing downwardly at the breech end in line with such magazine, and having a rack, a spring for effecting such movement of the barrel, a train of gear-wheels in engagement with such rack, a lever engaging said gear-train to return the barrel to normal position, and a spring-pressed gate hinged to said rack to automatically cut off said cartridges, substantially as specified.

14. In small-arms, the magazine, the barrel arranged to swing downwardly at the breech end in line with such magazine, and having a rack, a spring for effecting such movement of the barrel, a train of gear-wheels in engagement with such rack, a lever engaging said gear-train to return the barrel to normal position, a gate attached to, and moving with the barrel to automatically cut off such magazine upon such return movement of the barrel, and a spring-pressed charging-door at the lower forward portion of such magazine, substantially as specified.

15. In small-arms, the magazine, the barrel arranged to swing downwardly at the breech end in line with such magazine, a spring for effecting such movement of the barrel, means for returning the barrel to normal position, a gate arranged to automatically cut off such magazine as the barrel returns to normal position, and a charging-door at the lower forward portion of such magazine, substantially as specified.

16. In small-arms, the magazine, the barrel arranged to move downwardly at the breech end in line with such magazine, and having a rack, a spring for effecting such movement of the barrel, a train of gear-wheels in engagement with such rack, a lever engaging such gear-train to return the barrel to normal position, a spring-pressed gate hinged to said rack to automatically cut off said magazine, and a charging-gate at the lower forward portion of the magazine, substantially as specified.



17. In small-arms, the magazine, a barrel arranged to move downwardly at the breech end in line with such magazine, and means attached to the barrel and moving therewith for automatically cutting off such magazine through movement of such barrel, substantially as specified.

18. In small-arms, the magazine, a movable barrel, means for automatically cutting off such magazine through movement of such barrel, the longitudinally-movable breech-bolt, and means for automatically cocking the piece through such movement of the breech-bolt, substantially as specified.

19. In small-arms, the magazine, the breech-bolt arranged to have a rotary and a longitudinal movement in the receiver, which is open at the bottom thereof, the sleeve having bearings in the side walls of the receiver, moving longitudinally with such bolt and in which the bolt rotates, the extractor carried by said sleeve, means carried by said sleeve, and acting in connection with such extractor to support the shell, means for starting the retraction of such bolt and shell through rotary movement of the bolt, said receiver having a shell-exit communicating with its open bottom, and means for releasing the shell from its support when in line with such exit, substantially as specified.

20. In small-arms, the magazine, means for cutting off such magazine, the rotatable breech-bolt, and means for automatically cocking the piece through rotation of the breech-bolt, substantially as specified.

21. In small-arms, the magazine, means for cutting off such magazine, the breech-bolt arranged to have a rotary and a longitudinal movement in the receiver which is open at the bottom thereof, the sleeve having bearings in the side walls of the receiver, moving longitudinally with such bolt, and in which it rotates, the extractor carried by said sleeve, means carried by said sleeve, and acting in connection with such extractor to support the shell as it is withdrawn, the handle-lever upon such bolt, the cam-slot in the receiver in which said lever locks, and in which it works to start the retraction of bolt and shell, a lug upon said bolt working in an arcuate slot in the wall of the receiver to lock the bolt, and guided under longitudinal movement thereof in a straight slot in the wall of the receiver, said receiver having a shell-exit communicating with its open bottom, and means for releasing the shell from its support when in line with such exit, substantially as specified.

22. In small-arms, the magazine, means for cutting off the magazine, the breech-bolt arranged to have a rotary and a longitudinal movement in the receiver, which is open at the bottom thereof, the sleeve having bearings in the side walls of the receiver, moving longitudinally with such bolt, and in which it rotates, the extractor carried by said sleeve, means carried by said sleeve and

acting in connection with such extractor to support the shell as it is withdrawn, the handle-lever upon the bolt, the cam-slot in the breech-casing in which said lever locks, and in which it works to start the retraction of the bolt and shell, lugs upon said bolt working in arcuate slots of the receiver, one of said lugs being guided under longitudinal movement thereof in a straight slot of said receiver, said receiver having a shell-exit communicating with its open bottom, and means whereby the shell is released from its support when in line with such exit, substantially as specified.

23. In small-arms, the magazine, means for cutting off such magazine, a breech-bolt having a longitudinal and a rotary movement in the receiver, which is provided with an open bottom, a sleeve having bearings in the side wall of said receiver, moving longitudinally therewith, and in which it rotates, the extractor carried by said sleeve, means carried by said sleeve and acting in connection with such extractor to support the shell, said receiver having a shell-exit communicating with its open bottom, and means whereby the shell is released from its support when in line with such exit, substantially as specified.

24. In small-arms, the magazine, means for cutting off said magazine, the longitudinally-movable breech-bolt, the sleeve having bearings in the frame moving longitudinally with such bolt, and in which the bolt rotates, an extractor carried by said sleeve and engaging the upper portion of the shell, a shelf carried by said sleeve, and arranged to slide under the shell as it is retracted and hold it in engagement with such extractor, the exit with which the shell is brought in line under movement of the bolt and sleeve, and means for retracting such shelf at the proper time to allow the shell to escape through such exit, substantially as specified.

25. In small-arms, the magazine, means for cutting off such magazine, the breech-bolt arranged to have a longitudinal and a rotary movement, the sleeve having bearings in the frame, moving longitudinally with such bolt, and in which the bolt rotates, an extractor carried by said sleeve and engaging the upper portion of the shell, a shelf carried by said sleeve and arranged to slide under the shell as it is retracted and hold it in engagement with such extractor, means for slightly retracting the bolt and shell through such rotary movement of the bolt, the exit with which said shell is brought in line under longitudinal movement of said bolt and sleeve, and means for retracting said shelf at the proper time to allow the shell to escape through such exit, substantially as specified.

26. In small-arms, the magazine, means for cutting off such magazine, the breech-bolt arranged to have a longitudinal and a rotary movement, the sleeve having bearings in the frame moving longitudinally with the bolt, and in which it rotates, an extractor carried



by said sleeve, and engaging the upper portion of the shell, a shelf carried by said sleeve, and arranged to slide under the shell as it is retracted, the handle-lever upon the bolt, the 5 cam-slot in the frame, in which said lever locks, and in which it works to partly retract the bolt and shell, a lug upon said bolt working in an arcuate slot of the frame to lock the bolt, and having a movement in a straight 10 slot of such frame to prevent any rotation of the bolt throughout the longitudinal movement thereof, the exit with which said shell is brought in line under longitudinal movement of the bolt and sleeve, and means for 15 retracting such shelf at the proper time to allow the shell to escape through such exit, substantially as specified.

27. In small-arms, the magazine, means for cutting off the magazine, the breech-bolt arranged to have a longitudinal and a rotary 20 movement, the sleeve having longitudinal ribs provided with bearings in the frame, moving longitudinally with such bolt, in which the bolt rotates, and gripping the shell, 25 the exit with which the shell is brought in line under longitudinal movement of the bolt and sleeve, means whereby the shell is released from such grip to escape through such

exit when in line therewith, the eccentric upon the bolt, and the eccentric-strap connected with the shaft of the hammer of the 30 piece, and having guide-grooves therein engaged by the ribs of said sleeve, substantially as specified.

28. In small-arms, the magazine, and the barrel 35 arranged to move downwardly at the breech end in register with such magazine, substantially as specified.

29. In small-arms, the magazine, the barrel 40 arranged to move downwardly at the breech end in register with such magazine, and means for automatically impelling the cartridges from the magazine into the chamber, substantially as specified.

30. In small-arms, the magazine, the barrel 45 arranged to move downwardly at the breech end in register with such magazine, means for effecting such movement of the barrel, and means for returning the barrel to normal 50 position, substantially as specified.

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

SAMUEL J. EVANS.

Witnesses:

GEORGE M. ANDERSON,  
HARRY L. AMER.