

No. 855,589.

PATENTED JUNE 4, 1907.

B. W. PUNCHES.
MAGAZINE RIFLE.

APPLICATION FILED JUNE 13, 1906.

2 SHEETS—SHEET 1.

FIG. 1.

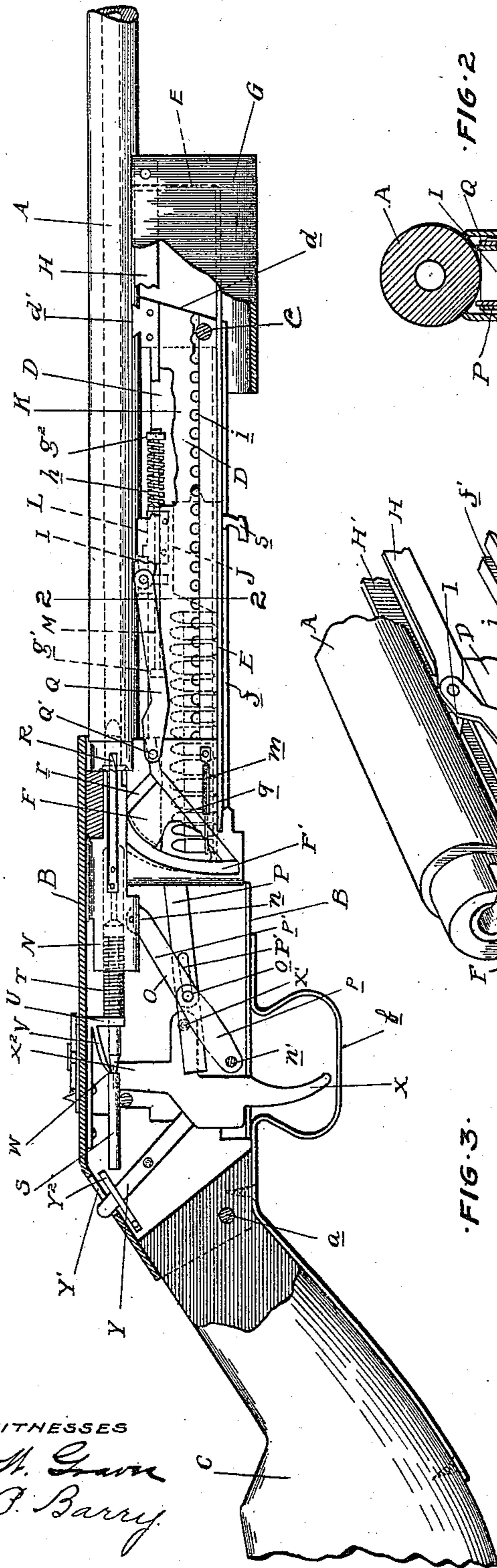


FIG. 3.

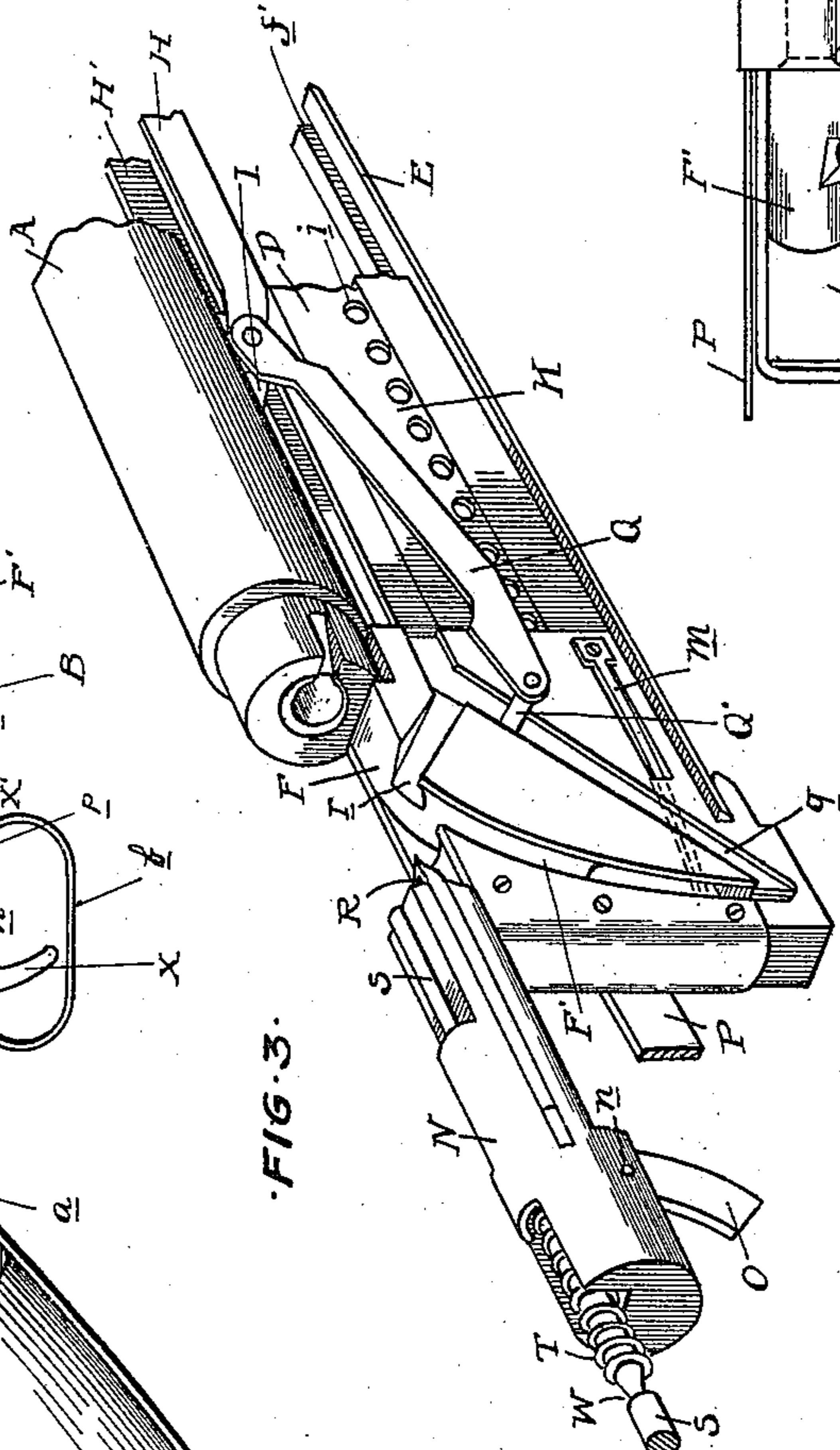


FIG. 2.

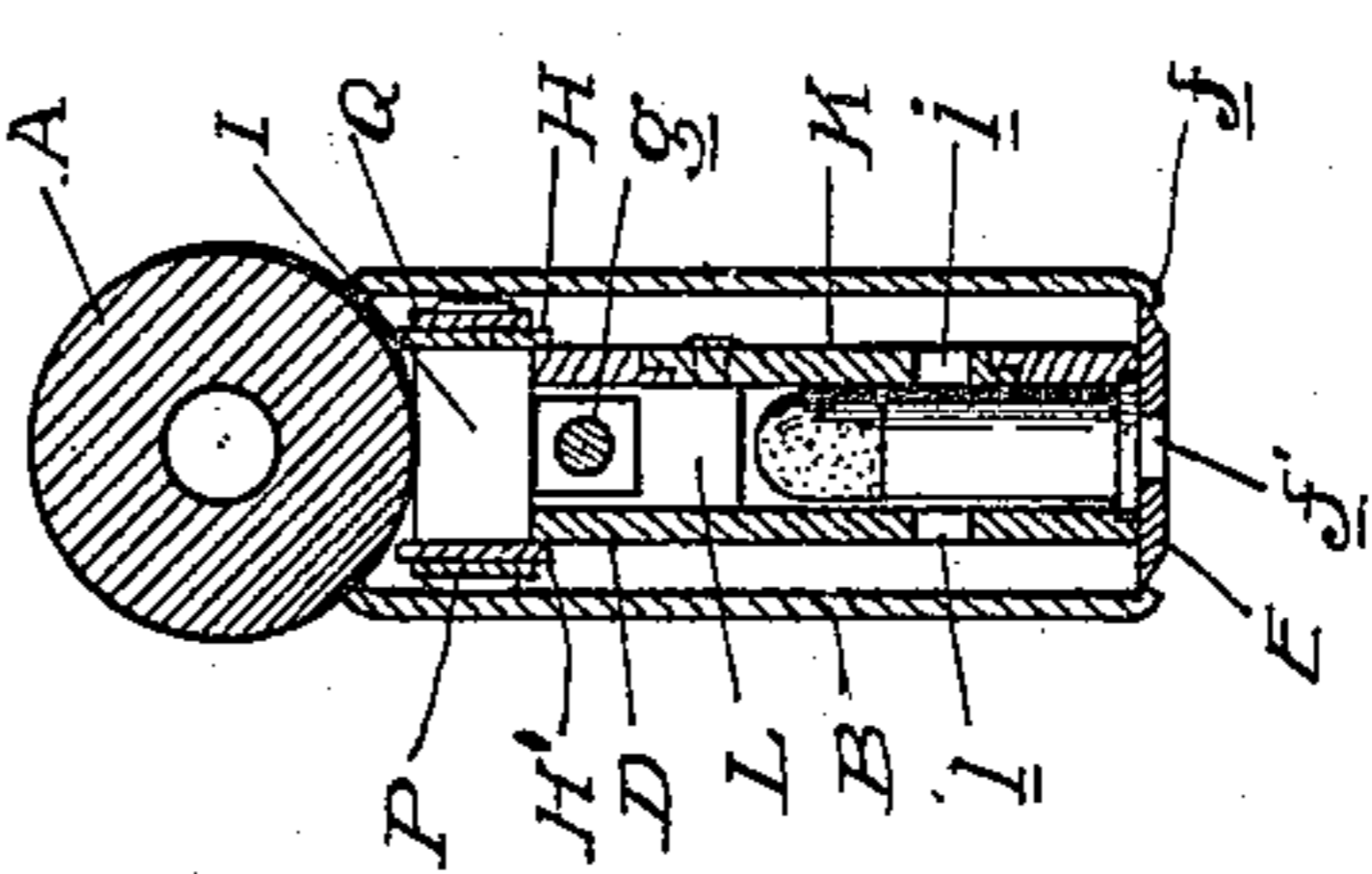
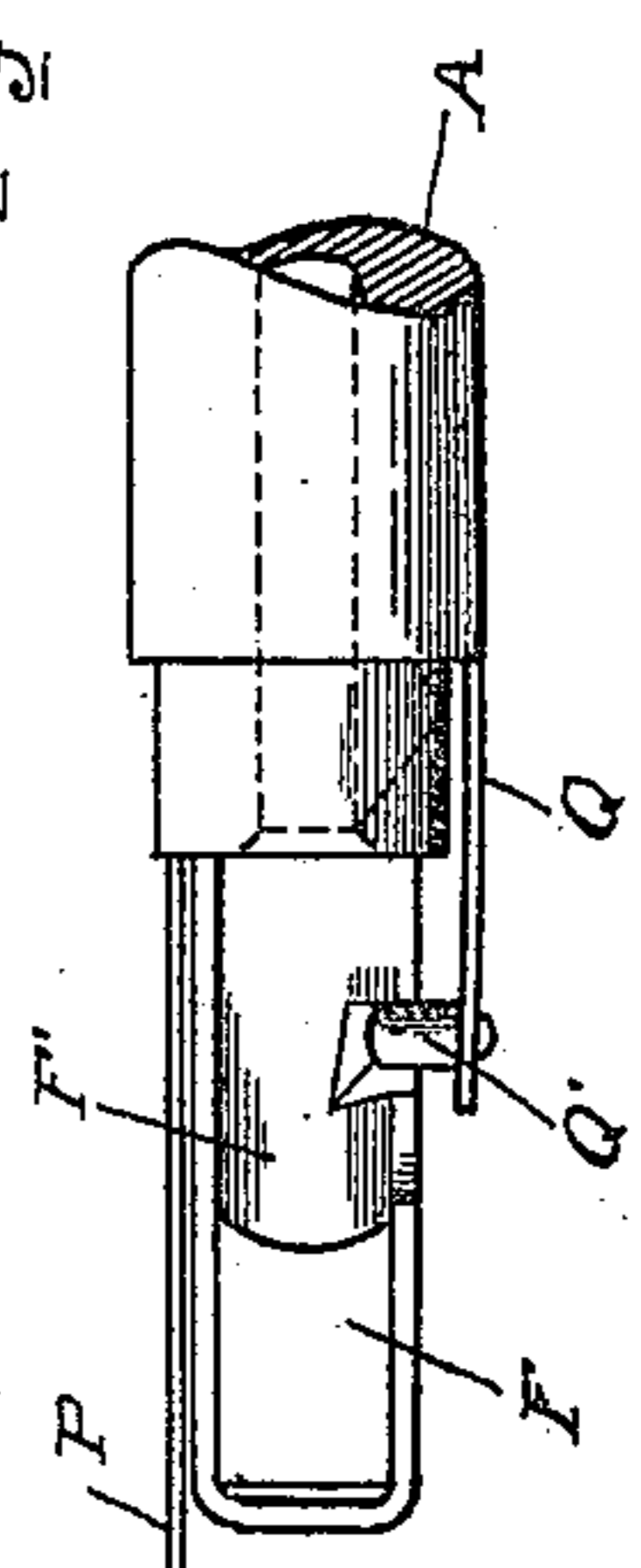


FIG. 4.



WITNESSES
Geo. H. Green
Jas. P. Barry

INVENTOR
BERT W. PUNCHES.

BY James Whittmore
ATTY

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2 SHEETS—SHEET 2.

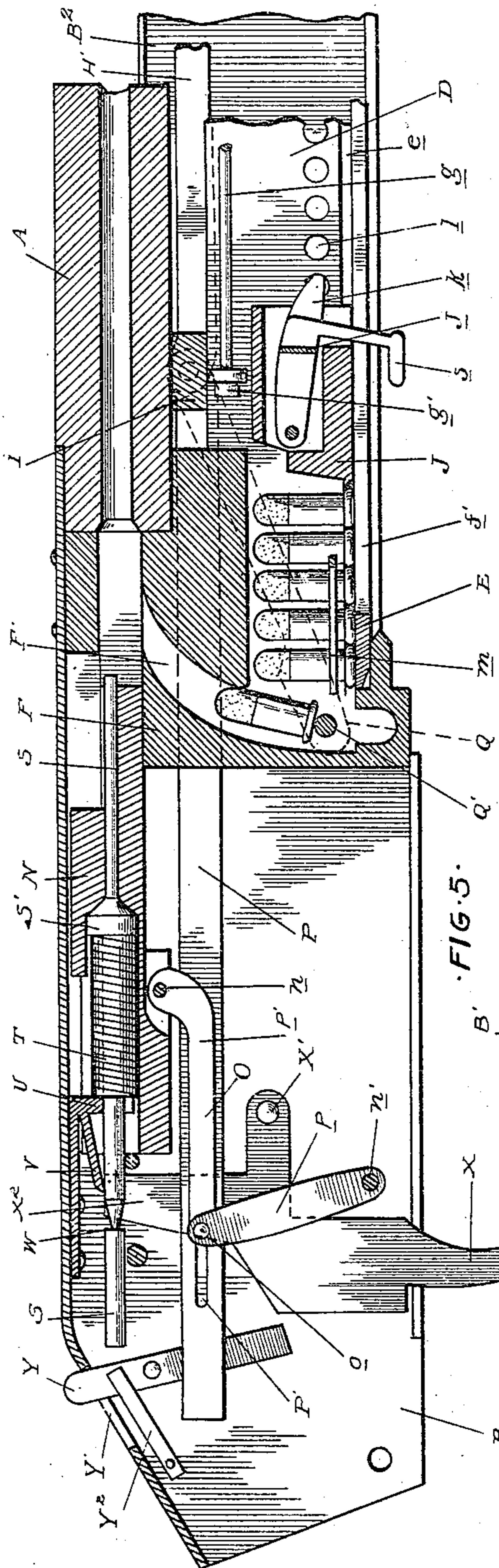


FIG. 5.

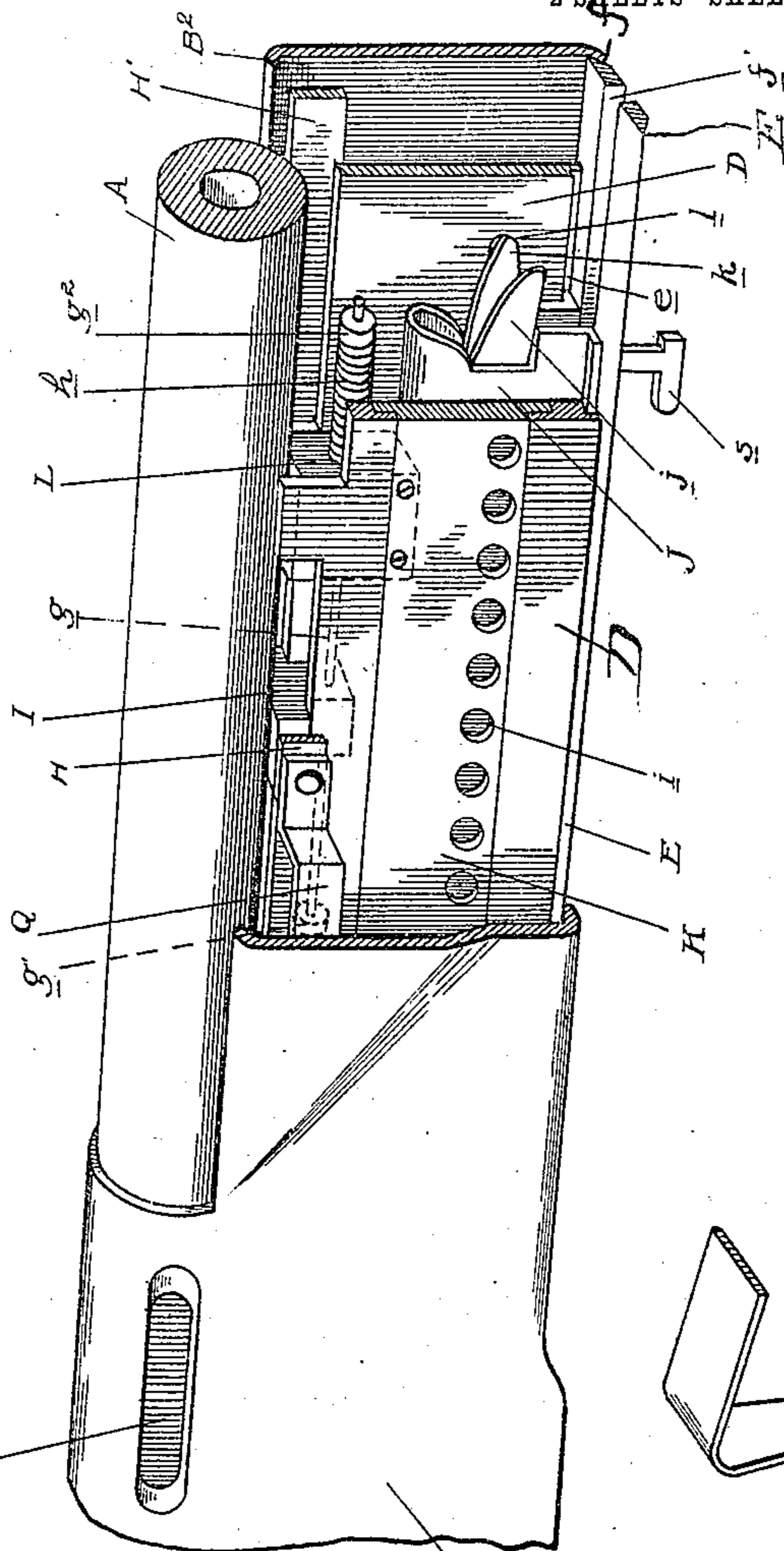
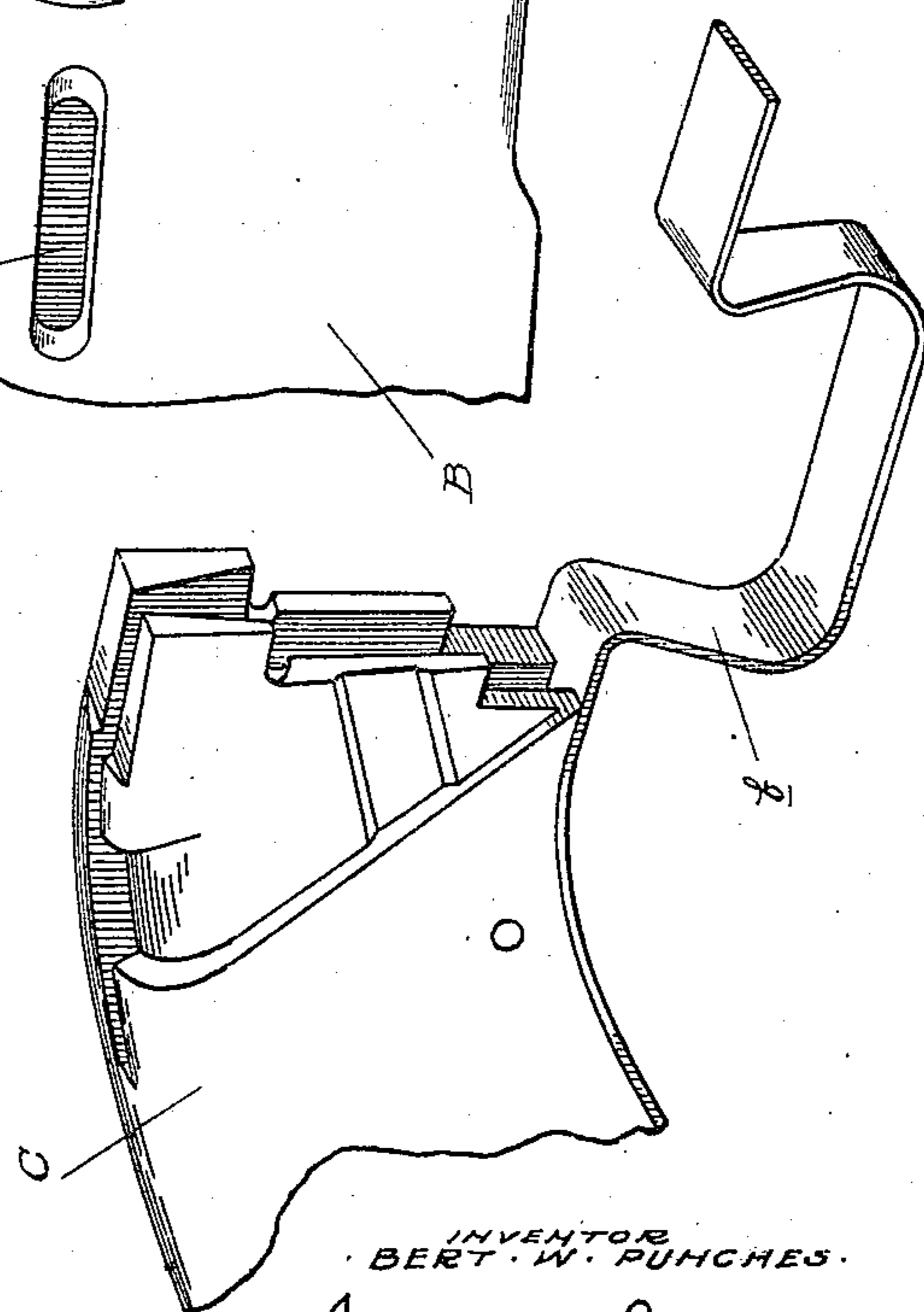


FIG. 6.

FIG. 7.



WITNESSES
Geo. H. Brown
Jas. O. Barry.

BY

INVENTOR
BERT. W. PUNCHES.
James Whitmore
ATTY

UNITED STATES PATENT OFFICE.

BERT W. PUNCHES, OF PLYMOUTH, MICHIGAN.

MAGAZINE-RIFLE.

No. 855,589.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed June 13, 1905. Serial No. 265,070.

To all whom it may concern:

Be it known that I, BERT W. PUNCHES, residing at Plymouth, in the county of Wayne and State of Michigan, a citizen of the United States, have invented certain new and useful Improvements in Magazine-Rifles, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to magazine guns and consists in certain novel features of construction as hereinafter set forth.

In the drawings, Figure 1 is a longitudinal section partly in elevation. Fig. 2 is a cross section on line 2—2 of Fig. 1; Fig. 3 is a perspective view of a transfer mechanism, the casing being removed; Fig. 4 is a plan view of the breech end of the barrel and transfer mechanism; Fig. 5 is a longitudinal section through the magazine, barrel and firing mechanism; Fig. 6 is a perspective view of a portion of the slot member; and Fig. 7 is a perspective view of the magazine portion of the gun, being partly in section.

It is one of the objects of the invention to provide a storage magazine for the cartridges capable of receiving cartridges of different length, together with mechanism for successively transferring the cartridges of various length to the breech of the barrel.

It is a further object to economize space in the magazine by arranging the cartridges to extend transverse to the axis of the barrel, so that a large number may be stored in a short length.

Still another object is to provide a simple construction of mechanism for transferring the cartridge from the magazine to the barrel and for ejecting the empty shell, locking the breech and performing other functions as hereinafter set forth.

As illustrated, A is the barrel of the rifle; B the casing which forms the frame and receiver and incloses the magazine B² which is arranged beneath the barrel, and C is the stock. For convenience in shipment, the stock is separable from the frame and is secured in position by a single pin or screw *a*. The trigger guard *b* is preferably attached to the stock and is removable therewith from the frame. The casing B is preferably formed, as shown, of a sheet metal stamping having a U-shaped cross section, the rear end of which embraces the end of the stock, and in addition to inclosing the magazine this casing in-

closes the firing mechanism. The barrel A is secured to the casing B by having its breech end inserted within the "U" of the casing and forward of the breech by a screw or pin *c* which passes through a depending lug *d* on the barrel and the opposite sides of the magazine. This lug *d* may be secured to the barrel by the dovetail engagement *d'*, as illustrated in Fig. 1.

The magazine B² is located within the casing B and extends beneath the barrel A and for a short distance in rear of the breech. It consists of parallel side members D which are spaced to receive the cartridges therebetween, and at their lower edges are provided with grooves *e* for receiving the base of the cartridge. The magazine is closed at its bottom by a slide E which engages with inwardly turned flanges *f* on the opposite sides of the casing B and may be moved longitudinally thereof to open or close the magazine. This slide E is preferably provided with a longitudinal slot *f'* through which cartridges within the magazine may be viewed so that the user can at any time ascertain the number remaining in the magazine. At the rear end of the magazine is the channeled block F, the channel thereof opening into the magazine and extending in a curve into alinement with the breech of the barrel. Through this channel the cartridges are successively carried from the magazine and inserted in the barrel by mechanism of the following construction:—G is a reciprocating actuating member for the mechanism. This is preferably formed of a sheet metal stamping of U-shaped cross section embracing the sides of the casing B and longitudinally slidably thereon. H, H' are links secured to the member G and arranged within the casing B on opposite sides of the magazine. These links are cross-connected at their rearward ends by a block I which is within the magazine but out of the path of the cartridges therein. J is a follower block which is longitudinally slidable within the magazine and serves to move the cartridges toward the rear end thereof. K is a sliding bar which is secured in ways in one side D of the magazine and is connected to a block L within the magazine. M is a lost motion connection between the block L and the block I which, as shown, comprises the rod *g* passing through aligned apertures in the blocks I and L and having the collars or shoulders *g'*, *g''* at opposite ends thereof. Between the

collar g^2 and the block L is a spring h sleeved upon the rod, which yieldingly presses against the block L when the block I is actuated rearwardly. The follower J is actuated by the slide K through the medium of a ratchet, preferably formed by a series of apertures or recesses i in the slide, with which a spring dog j on the follower engages. k is a second spring dog which engages with corresponding ratchet notches l in the opposite side wall D of the magazine.

The construction of the mechanism just described is such that when the member G is moved rearwardly, it will actuate the block I through the medium of the links H and H'. This movement will not however directly actuate the follower for the reason that considerable lost motion is provided in the sliding of the rod g through the aperture in the block L before the spring h is brought to bear on said block. When this lost motion is taken up, the block L will be actuated but the resiliency of the spring h will prevent any sudden shock. The block L will in turn actuate the slide K and the latter, through the ratchet i will move the follower, the amount of movement being equal to the diameter of one cartridge.

The movement of the follower J will actuate the entire series of cartridges within the magazine and will eject the rearmost cartridge from the magazine into the channel F' of the block F. The cartridges are held from falling into this channel by a spring m which presses against the sides thereof, but under the actuation of the follower, the friction of this spring is overcome. When the cartridge is in the channel F', it is transferred to the breech of the barrel by mechanism of the following construction:—N is a breech block which in normal position closes the breech end of the barrel. This block is guided within the frame B to slide longitudinally in axial alinement with the barrel. O is a break jointed rod which is pivotally connected at one end n to the breech block N, and at its opposite end to a stationary pivot n' in the frame B. In normal position the pivotal connection o between the link members p, p' which constitute the rod O, is in alinement or substantial alinement with the pivots n, n' , and the direction of this line is at an angle to the axis of the barrel, the pivot n' being located near the lower part of the frame B. Thus the breech block N is locked in position against recoil from the firing of a cartridge in the barrel. The rod O is however connected to the sliding block I by a link P which is pivotally connected to said block at one end and to a pivot pin o at its opposite end. The direction of movement of this link under the actuation of the member G is substantially parallel to the axis of the barrel A, and as this is at an angle to the line connecting the pivots n, n', o , it is evident that the pivot o may be moved rearward. This will cause

the folding of the links p, p' and consequently will draw the breech block N rearward and uncover the breech of the barrel.

Pivotally connected with the sliding block I is link Q which carries at its free end a lug or pin Q' which normally engages a guide slot q in the side of the block F. This guide slot q is so directed that in the rearward movement of the block I, the pin Q' will be carried downward until it enters the lower end of the channel F', and this movement is accomplished simultaneously with the ejection of one of the cartridges from the magazine into the channel F'. The channel q is at one side of the magazine, but the pin Q' is yieldingly pressed toward the magazine preferably by forming the link Q of resilient material, so that the instant the pin comes into registration with the channel F', it will be pressed inward into a position where it is directly beneath the cartridge ejected from the magazine. In the return movement of the actuating member G, the links H, H' will draw the block I and the link Q pivotally attached thereto so as to cause the pin Q' to travel through the channel F', the direction of which is sufficiently inclined to the direction of the link to operate as a cam. Thus the cartridge is turned upward and forward through the channel F' until it enters the breech end of the barrel.

After the point of the cartridge has entered the barrel, the pin Q' is withdrawn from its contact with the cartridge and out of the path of the breech block N which is returned by the forward movement of the member G and which presses the cartridge to its seat. The withdrawal of the pin Q' is effected by a cam slot r in the block F which is inclined downward to intersect with the slot q and it is also inclined outward to press out the pin Q' and place the link Q under a lateral tension.

From the description above given the operation of the loading mechanism will be understood but in brief is as follows: The operator first draws the member G rearward and in so doing will feed the series of cartridges rearward in the magazine, ejecting the rearmost cartridge into the channel F'. Simultaneously the breech block N is withdrawn and this ejects the empty cartridge as will be hereinafter described. When the limit of the rearward movement of the member G is reached, the operator presses said member forward again which will draw the pin Q' up the channel F' propelling the cartridge until its point has entered the barrel, and then continuing the movement of the pin until the initial position is reached. The forward movement of the member G also draws forward the breech block N until it abuts against the end of the barrel and in this position the pivots n, n', o of the break jointed rod are in alinement and will lock the breech

block from recoil. To permit the cartridge to enter the barrel in advance of the return of the breech block, a slot P' is formed in the link P which provides lost motion sufficient to delay the return movement of the block.

For ejecting the empty shell, an opening B' is provided in the side of the frame B and the breech block is provided with an extractor R. This extractor is in engagement with the rim of the shell and thus in its rearward movement will withdraw the cartridge from the barrel to a position where it is in registration with the discharge opening in the frame B, where it will be disengaged from the extractor and ejected from said frame by any suitable means (not shown) of the various types well known to those skilled in the art, such as a shoulder on the frame or an ordinary spring ejector.

The feeding of the follower J rearward is automatically effected with each movement of the member G in the manner described, but if the operator desires to dispense with the automatic feed this may be done by disengaging the dogs j and k from the ratchets i and l in the slide K and side D. To this end, the dogs j and k are preferably pivotally mounted in the block J and have connected thereto an actuating finger s which projects outward through the slot f' in the slide E. By pressing upon this finger s, both of the dogs j and k may be simultaneously withdrawn from their respective ratchets so that the movement of the slide K will produce no feeding of the cartridges. Thus the operator may feed by hand by placing the cartridge in the opening through which the empty shell is ejected.

For discharging the gun, a firing pin S is slidably secured in the breech block N. This pin is provided with a collar S' against which a spring T sleeved upon the pin abuts, while the opposite end of said spring is anchored by a lug U on the frame.

V is a sear preferably formed integral with the lug U which is adapted to engage with a notch W in the pin S so as to hold said pin in its retracted position with the spring T placed under tension.

X is the trigger pivotally connected at X' to the frame and having a projecting arm X² which when the trigger is drawn will press against the sear V and withdraw the same from the notch W. This will release the pin and permit the tension of the spring T to propel it against the cartridge and fire the same. To lock the trigger from movement, a lever Y is pivotally connected within the frame B, one end of said lever projecting out through a slot Y' in said frame and the other end being arranged so that when the lever is in one position it will form a stop, preventing the movement of the trigger. Thus by a suitable adjustment of the lever Y, the gun may be

locked from firing. A spring Y² holds the lever Y from accidental movement.

What I claim as my invention is:—

1. A magazine gun comprising a barrel, a magazine adapted to receive a series of cartridges in an upright position arranged side by side shell end downward transversely of the barrel, means for feeding the series longitudinally and rearwardly of the barrel and for transferring the end cartridge into the barrel.

2. A magazine gun comprising a barrel, a magazine adapted to receive a series of cartridges extending longitudinally of the barrel, the individual cartridges being arranged side by side shell end downward and extending transversely to the barrel, means for feeding the entire series longitudinally rearwardly of the barrel, co-operating means for transferring the end cartridge and inserting the same in the barrel, a breech block, and co-operating mechanism for removing and replacing said breech block respectively in advance and subsequent to the transfer of said cartridge.

3. A magazine gun comprising a barrel, a magazine arranged adjacent to and extending from the breech end of to an intermediate point on said barrel and adapted to receive a series of cartridges in an upright position arranged side by side shell end downward, the series extending longitudinally of the barrel, and a removable closure for said magazine permitting, when removed, the insertion of the cartridges.

4. A magazine gun comprising a barrel, an adjacent magazine adapted to receive a series of cartridges extending longitudinally of the barrel, the individual cartridges being arranged side by side shell end downward and extending transversely of the barrel, means for feeding the entire series rearwardly of the barrel, a guide for the series engaging the cartridge flanges, and means for transferring the end cartridge and inserting the same in the barrel.

5. A magazine gun comprising a barrel, a magazine adjacent thereto and parallel therewith, and having an opening in the side opposite to said barrel for the insertion of cartridges transversely of the barrel in a series longitudinally of the barrel with their points toward the barrel, of means for feeding said series rearwardly, a grooved guide in the magazine in the side opposite to the barrel arranged to engage the base flanges of the cartridges, and means for engaging the base of the end cartridge of the series and transferring the same to the barrel.

6. A magazine gun comprising a barrel, an adjacent magazine in which cartridges are arranged extending transversely of the barrel side by side in a series longitudinally of the barrel, a reciprocatory hand actuated member adapted to move the entire series rearwardly of the barrel, a guide channel at the

end of the magazine leading to the breech of the barrel and into which the cartridge is inserted by the movement of the series, and a member actuated by said reciprocatory member adapted in the return movement of the latter to propel the cartridge in said channel into engagement with the breech of the barrel.

7. A magazine gun comprising a barrel, an adjacent magazine containing a longitudinal series of cartridges individually extending transversely of the barrel, a reciprocatory hand actuated member, a follower in said magazine propelled by said member to feed the entire series of cartridges, a guide channel connecting the end of the magazine with the breech of the barrel into which the end cartridge of the series is fed, a transfer member actuated by the return movement of said reciprocatory member for engaging a cartridge in said guide channel and propelling the same into the barrel, a breech block reciprocated by said reciprocatory hand member to be withdrawn and replaced respectively before and after the transfer of the cartridge into the barrel, and means for withdrawing said transfer member from the path of said breech block after the engagement of the cartridge with the barrel.

8. A magazine gun comprising a barrel, an adjacent magazine containing a series of cartridges individually extending transversely of the barrel, a guide channel at the end of the magazine leading to the breech of the barrel, means for feeding the series of cartridges to insert the end cartridge in said channel, a reciprocatory hand actuated member, a transfer member operated thereby adapted to engage the cartridge in said channel and propel the same into engagement with the

barrel, and a guide for returning said transfer member through a different path to a position for engaging a succeeding cartridge.

9. In a gun the combination with a barrel, of a reciprocatory breech block therefor, a firing pin slidably mounted in said breech block, a spring sleeved upon said pin and bearing against a shoulder thereon, a stationary abutment against which the opposite end of said spring bears, apertured for the passage of said pin, a laterally yielding sear integral with said abutment, a shoulder on said pin adapted to engage with said sear when said breech block is retracted, and to hold said spring under tension, and a trigger for disengaging said sear from said shoulder to release said pin.

10. In a gun the combination with a barrel, of a reciprocatory breech block therefor, a firing pin slidable within said breech block, a spring sleeved upon said pin and bearing against a shoulder thereon, and an integral abutment and sear for said spring and said pin.

11. A magazine gun comprising a barrel, a magazine parallel therewith and adjacent thereto and having an opening in the under side for the insertion of the cartridges transversely of the axis of the barrel, a slide for substantially closing said opening, and means for transferring said cartridges from the magazine to the breech of said barrel.

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

BERT W. PUNCHES.

Witnesses:

JAMES P. BARRY,
EDWARD D. AULT.