No. 889,243. PATENTED JUNE 2, 1908.

B. F. LANGDON.

FIREARM.

APPLICATION FILED MAY 26, 1906.

3 SHEETS—SHEET 1.

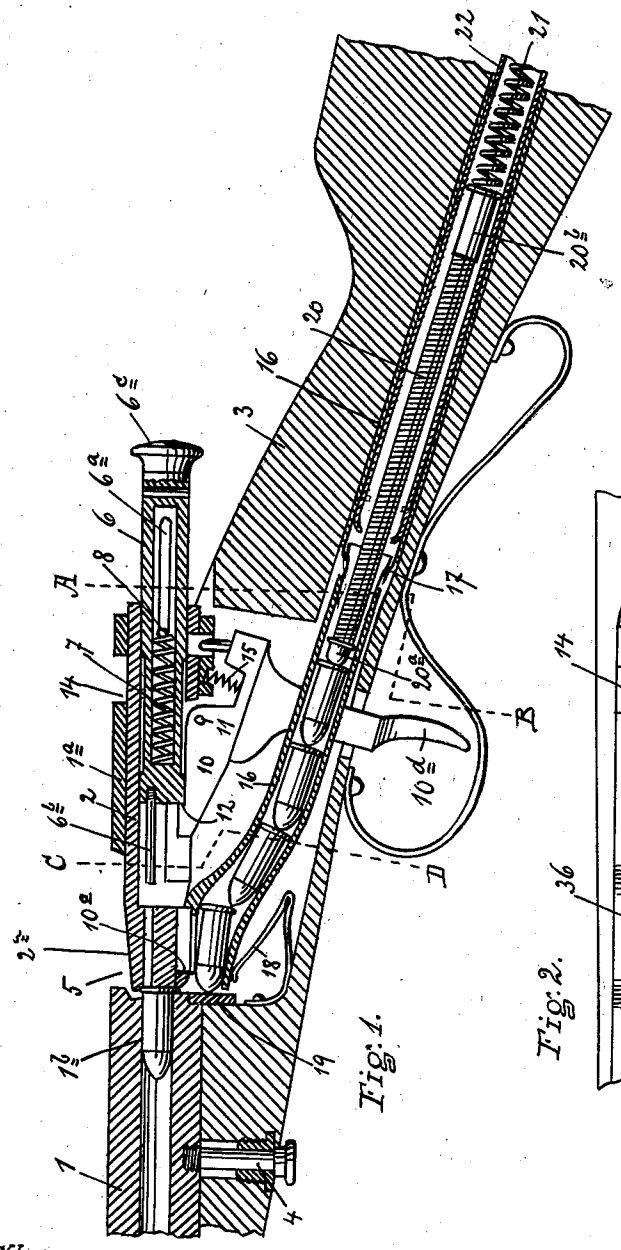


Fig. 1.

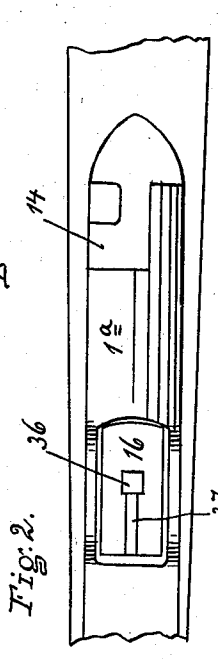


Fig. 2.

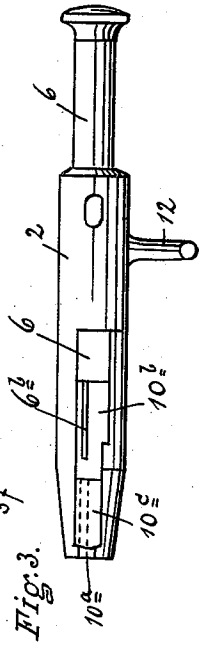


Fig. 3.

WITNESSES

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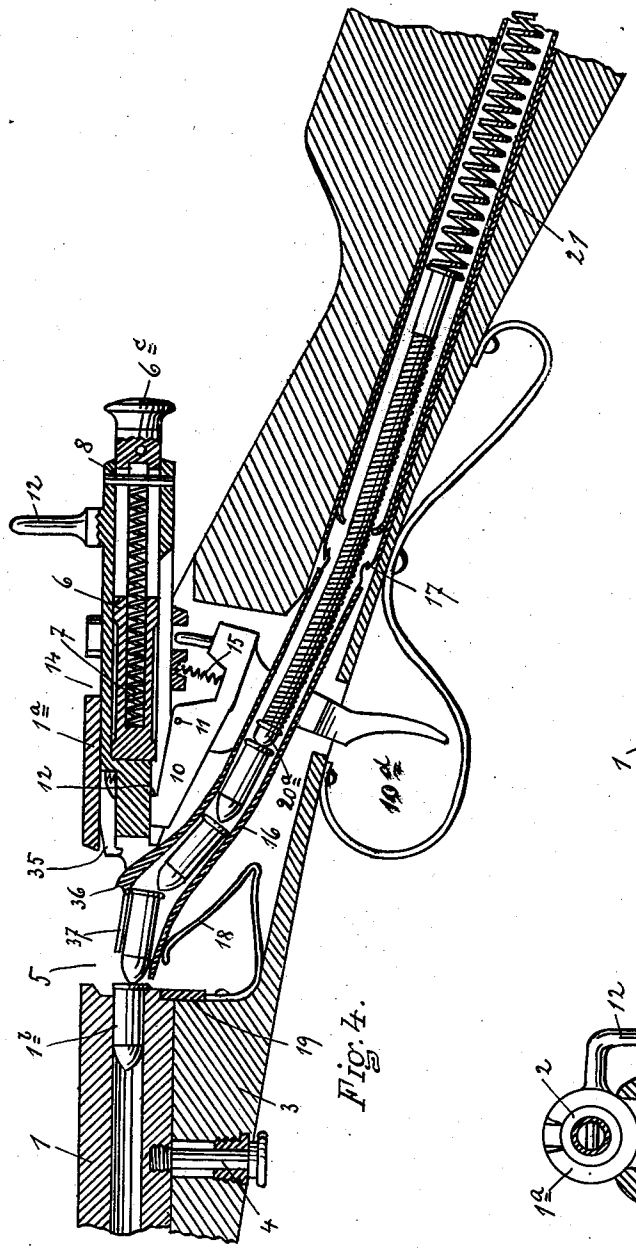


Fig. 4.

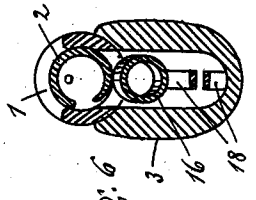


Fig. 6.

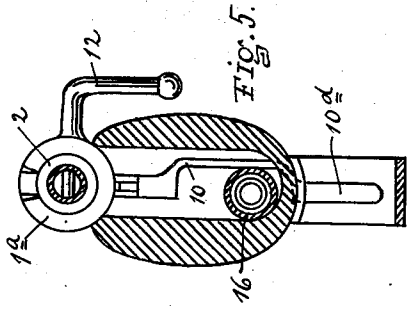


Fig. 5.

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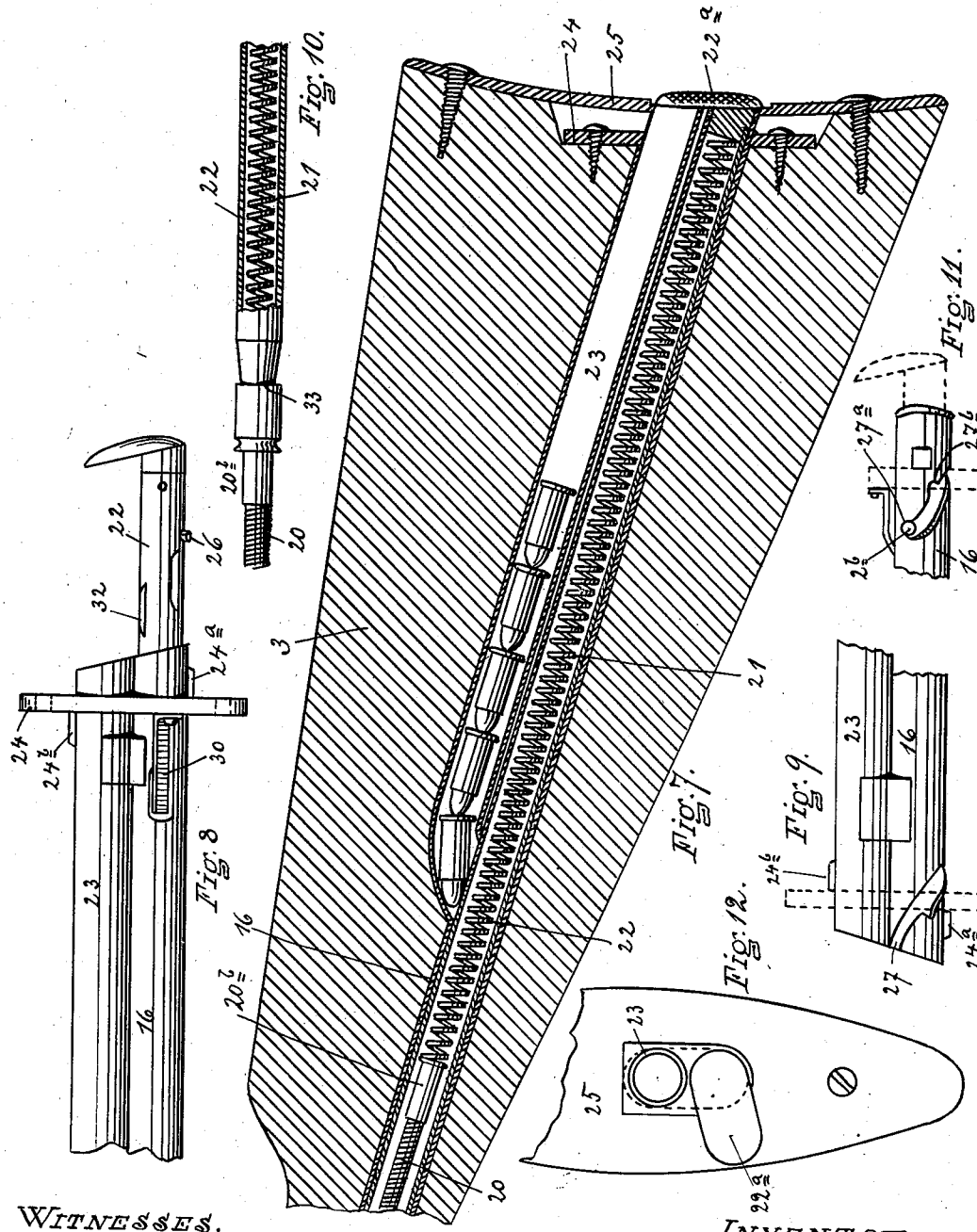
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3 SHEETS—SHEET 3.



WITNESSES.
Rich. A. George
S. E. Clark.

INVENTOR
BENJAMIN F. LANGDON
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ATTORNEYS.

UNITED STATES PATENT OFFICE.

BENJAMIN F. LANGDON, OF UTICA, NEW YORK, ASSIGNOR TO SAVAGE ARMS COMPANY, OF FRANKFORT, NEW YORK.

FIREARM.

No. 889,243. Specification of Letters Patent. Patented June 2, 1908

Application filed May 26, 1906. Serial No. 318,868.

To all whom it may concern:

Be it known that I, BENJAMIN F. LANGDON, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Firearms; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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 the letters of reference marked thereon, which form part of this specification.

My invention relates to improvements in firearms, and more particularly to the magazine and the manner in which it is arranged to handle cartridges and to coöperate with the barrel and working parts in performing its function.

This invention is more particularly adapted for firearms handling small cartridges and has numerous points of utility as will hereinafter more fully appear.

Figure 1 shows a partial vertical section of parts of my improved firearm, the parts being shown in the position which they assume when the gun is ready to fire. Fig. 2 shows a top or plan view of the rear end of the barrel with the bolt removed. Fig. 3 is a bottom view of the breech bolt with the firing pin in position therein. Fig. 4 is a similar sectional view to that shown in Fig. 1 with the breech bolt in open position. Fig. 5 is a section taken on line A—B of Fig. 1. Fig. 6 is a section taken on line C—D of Fig. 1. Fig. 7 is a longitudinal section of the rear portion of the stock and magazine. Fig. 8 is a detailed view of a portion of the magazine and its mechanism removed from the stock. Fig. 9 is a partial side elevation of the same as seen from the opposite side to that shown in Fig. 8. Fig. 10 shows details partially in section of the magazine follower. Fig. 11 is a partial bottom view of the rear end of the magazine tube. Fig. 12 is a partial view of the rear end of the stock with the magazine closure or cover in open position.

Referring to the reference letters and figures in a more particular description, 1 indicates the barrel which is extended rearwardly and chambered to a larger diameter in the part 1^a which constitutes practically the frame or receiver of the gun which receives the breech bolt 2. The barrel 1 is provided with the usual cartridge chamber 1^b at the rear end. The stock 3 is extended forwardly under the barrel and is secured thereto by a screw or bolt, the barrel and receiver portion 1^a thereof lying in a groove cut in the upper side of the forward end of the stock. The receiver portion is provided on top with an opening 5 through which the empty shells are ejected and through which access may be had for other purposes, as will hereinafter appear. This opening is made by a cross cut across the top of the barrel sufficiently deep to enter well into the enlarged opening which receives the bolt 2. The breech bolt is of a tubular form as shown except the front end, which is provided with a section 2^a of truncated cone form.

The tubular portion of the breech bolt receives the firing pin 6, which is itself hollow or tubular in the main part, and receives the firing pin spring 7 interposed between the head end thereof and a transverse pin 8 passing through slotted openings 6^a in the walls of the firing pin and supported in the rear end of the breech bolt. The forward end of the firing pin (otherwise hammer) is provided with a projecting pin 6^b which is adapted to be projected through an opening in the forward end of the bolt and is the part which strikes the cartridge to explode the same. The rear end of the firing pin may be provided with a knob 6^c, which will afford means for manually operating the firing pin and close the rear end thereof and give a finished appearance thereto.

The combined trigger and bolt stop 10 is pivoted at 11 in the frame part and is provided at its forward end with a catch shoulder 12 adapted to catch the forward end of the firing pin and hold it against the tension of the spring 7 when not disengaged therefrom. The forward end of the trigger and bolt stop 10 is adapted to strike on a shoulder 10^a of the breech bolt and limit the opening movement of the bolt. The bolt is cut out on the underside, as indicated at 10^b, to permit its rotation in locking and unlocking without interfering with the forward end of the trigger 10 and to enable the trigger to engage with the forward end of the firing pin. It is also slotted, as indicated at 10^c, to allow the bolt to be withdrawn to a sufficient extent to open the breech before the forward end of the trigger engages with the shoulder 10^a and limits the opening movement.

The breech bolt is provided with a handle

12 by means of which it is manipulated, the shank or base portion of the handle adjacent to the bolt being adapted to enter an L-shaped recess 14 in the rear end of the frame, and, when turned into proper position, lock the bolt in closed position and so as to resist the shock of the explosion. The trigger and bolt stop 10 is operated into securing position by the spring 15 and is provided with the usual projecting lever portion 10^d to receive the finger of the operator to actuate the same.

The magazine consists in the main of a tube 16 which passes through an opening in the stock 3 from the butt plate to the rear end of the barrel and is jointed at 17 so that the forward end is flexible and may be moved into and out of line with the rear end of the barrel. For moving the forward end of the magazine into line with the barrel, there is provided a spring 18 which tends at all times to throw the forward end of the magazine up into line with the barrel. The forward end of the bolt 2 is adapted to ride the forward end of the magazine down against the tension of the spring 18 and move it out of line with the barrel and occupy that position itself. The joint 17 is arranged well back from the rear end of the barrel, whereby relatively sharp turns for the cartridges are avoided, particularly when the delivery end of the magazine is in register with the barrel. The forward end of the magazine occupies a position in an opening in the underside of the frame immediately below the opening 5 before mentioned, and at the rear end of the barrel proper; and when the breech bolt is in open position the forward end of the magazine rises up into said opening; and when the breech bolt is closed, it is forced down and more or less out of said opening and into a suitable recess in the stock immediately below the opening. The rear end of the barrel is provided with a downwardly projecting tang or plate 19, which is adapted to practically close the front end of the magazine when in its lower or depressed position. The magazine 16 is provided with a flexible follower 20 in the nature of a close coil spring, the same being provided on one end with a head 20^a adapted to engage the cartridge and secured at the other end in a flanged or headed socket 20^b. The follower 20 is impelled toward the delivery end of the magazine by a spring 21. The spring 21 with the socket 20^b is received within the magazine follower tube 22, the forward end of which is slightly closed in so that the flange of the socket 20^b will engage therewith and prevent the socket 20 with the spring 21 from escaping through the forward end of the magazine follower tube. The magazine follower tube is received in and fits in the magazine tube 16 and is provided at its rear end with a plate piece 22^a firmly secured thereto.

In connection with the tubular magazine 16, which, for the purposes of description, may be termed the primary magazine, there is provided also an auxiliary magazine 23 which is of tubular form and lies side by side with and extends parallel along the primary magazine for a sufficient distance where it communicates at its delivery end through an opening with and into the primary magazine. The length of the magazine tube 22 is such that when in position in the magazine 16 it will close the passage from the auxiliary to the primary magazine. Both the primary and auxiliary magazines may be supported at the rear by a plate 24 provided in a recess in the butt end of the stock, through which plate 24 the rear end of the primary and auxiliary tubes pass and also register with an opening in the butt plate 25.

In order to prevent longitudinal movement of the primary and auxiliary magazines in the plate 24 these two parts will preferably be provided with stops 24^a and 24^b engaging with the plate 24. In order to secure the magazine follower tube 22 in position in the primary magazine while the follower is pressing on the cartridges which may be contained in the forward end of the magazine tube, the follower tube 22 is provided with a pin or projection 26 adapted to be received in a spiral groove 27 in the rear end of the magazine tube, which projection 26 is particularly adapted to engage with shoulders 27^a and 27^b in one wall of the spiral groove.

Mounted on the plate 24 is a spring 30, the forward free end of which operates through an opening in the side of the tube 16 and is adapted to engage with the depressions or shoulders 31 and 32 in the magazine follower tube 22. When engaged with the depression 31, the spring 30 is adapted to maintain the tube 22 against other than forcible rotation while the projection 26 is in engagement with the shoulder 27^a. When engaged with the depression or shoulder 32, the spring 30 is adapted to maintain the follower tube 22 against other than forcible rotation while the projection 26 is engaged with the shoulder 27^b. The spring 30 is also adapted to engage with a shoulder 33 provided on the forward end of the follower tube 22 and prevent the entire withdrawal of this tube from the magazine tube 16. The shoulder 33 will preferably be provided so as to not entirely encircle the tube 22, whereby at one point by rotating the tube 22 into suitable position the spring 30 can be forced back and the follower tube entirely withdrawn.

The plate 22^a on the rear end of the follower tube not only serves as a handle to manipulate the follower tube by, but also as a closure for the rear end of the auxiliary magazine when turned into a vertical position.

To load the magazine the follower tube 22 will be rotated and partially withdrawn, so that it occupies the position shown in dotted lines in Fig. 11 and in full lines in Fig. 12. At this time the projection 26 will be engaged with the shoulder 27^b and the magazine follower tube held against being forced out of the rear end of the magazine. When so arranged access is had to the open rear end of the auxiliary magazine, which may be filled with cartridges, the same occupying an end to end position. In case these cartridges introduced in the auxiliary magazine are desired in the primary magazine, the follower tube 22 is rotated sufficiently to disengage the projection 26 from the shoulder 27^b and drawn out until stopped by the spring 30 engaging on the shoulder 33. When so drawn out, the passage from the auxiliary magazine into the primary magazine will be unobstructed and the cartridges in the auxiliary magazine will readily pass by gravity into the primary one. When this has occurred, the magazine follower tube 22 will be forced back until it is caught and secured on the shoulder 27^b. This closes the passage from the auxiliary to the primary magazine and a second lot of cartridges can then be introduced into the auxiliary magazine and confined therein by turning the plate 22^a into proper position. The cartridges in the primary magazine may not only fill the portion of the same which is in advance of the forward end of the follower tube, but they may also extend back into the follower tube, the opening in the forward end of the follower tube being sufficient to allow free passage of the cartridges in or out therethrough.

When the breech bolt is in open position, the forward end of the magazine will be raised by the spring 18 in line with the cartridge chamber, and in case the cartridge chamber is empty a cartridge will be pushed into the chamber. When the breech bolt is closed the forward end of the magazine will be forced down into the position shown in Fig. 1. The breech bolt will be provided with an extractor 35, which, as the breech bolt is opened, engages with the cartridge shell and withdraws the same. The shell will be flipped out by the forward end of the magazine as it rises, or a projection 36 may be provided on the top of the forward end of the magazine which will engage the lower edge of the cartridge head, and, coöperating with the extractor 35, eject the cartridge shell.

The forward delivery end of the magazine will preferably be curved and formed so that the forwardmost cartridge in the magazine will occupy a position substantially parallel with the cartridge chamber, and so as to form also what is practically a movable bottom for the opening 5 in the frame of the firearm. The delivery end of the magazine may also be slotted, as indicated at 37, at its forward end whereby a pointed instrument may be inserted, if necessary, to move the cartridges in case of their becoming jammed or their passage interfered with by dirt or other obstruction.

The gun can be operated as a single loader without using the magazine by the operator placing the cartridge on the top of the end of the magazine and forcing the magazine down against the tension of the spring 18, and then slipping the shell forward into the barrel chamber. It will also be noted that cartridges of sundry lengths may be promiscuously used in this magazine, such, for instance, as 22 caliber short, 22 caliber long and 22 caliber long rifle when the gun is arranged for 22 caliber.

The joint 17 in the magazine tube may be omitted and the magazine tube hinged at its rear end at or adjacent to the plate 24. This construction, however, is deemed inferior to the one illustrated, in that the recess in the stock to provide therefor materially cuts the way and weakens the stock, and the size and weight of the movable parts are much increased.

What I claim as new and desire to secure by Letters Patent is:

1. The combination in and with a firearm of a tubular primary magazine and a tubular auxiliary magazine substantially parallel with and arranged to discharge into the primary magazine, means for retaining cartridges in the auxiliary magazine and means for feeding the cartridges to the firing mechanism provided in the primary magazine, substantially as set forth.

2. In a firearm, a tubular primary magazine, a tubular auxiliary magazine opening into the side of the primary magazine and a follower tube serving to close the passage from the auxiliary into the primary magazine, substantially as set forth.

3. The combination in a firearm of a barrel, a frame part, a breech bolt mounted in the frame part, an ejecting opening, through the top of the frame part, a magazine opening through the bottom of the frame part, a movable spring supported magazine arranged in said magazine opening, a platform on top of the movable magazine, substantially closing the said magazine opening and adapted to serve as a loading platform when operating the firearm as a single loader, substantially as set forth.

4. In a magazine for firearms, the combination of the primary and auxiliary magazine tubes, a spring actuated follower in the primary magazine tube, a follower tube adapted to be received in and close the rear end of the primary magazine, and having a plate or cap adapted to serve as a closure for the auxiliary magazine tube, substantially as set forth.

5. The combination with a firearm having a barrel, frame part, stock, breech bolt, trigger and other firing mechanism, of a tubular magazine arranged in the stock and jointed at a point to the rear of the trigger, the section of magazine next to the barrel being movable at its delivery end into and out of registering position with the barrel, a spring for moving said delivery end into registering position with the barrel and the same being arranged to be displaced from said registering position by the breech bolt in closed position, substantially as set forth.

6. The combination with a firearm having a barrel, frame part, stock, breech bolt, trigger and other firing mechanism, of a tubular magazine arranged in the stock and movable at the forward delivery end into and out of registering position with the barrel, said delivery end being curved so as to bring the cartridge substantially into alinement with the barrel when in delivering position, means for moving said delivery end into and out of registering position with the barrel and a spring in the magazine for forcing the cartridges toward the barrel, substantially as set forth.

7. The combination in a firearm having a stock and a barrel, of a tubular magazine arranged in the stock and jointed to provide for the section next adjacent the barrel to move into position to register with the rear end of the barrel, and to move out of said position, a flexible follower arranged in the magazine, a stop adjacent to the joint in the magazine to limit the movement of the follower towards the barrel, and a spring for moving the follower, substantially as set forth.

In witness whereof, I have affixed my signature, in presence of two witnesses, this 19th day of May 1906.

BENJAMIN F. LANGDON.

Witnesses:

C. G. CUNNINGHAM,

H. A. MOREHOUSE.