

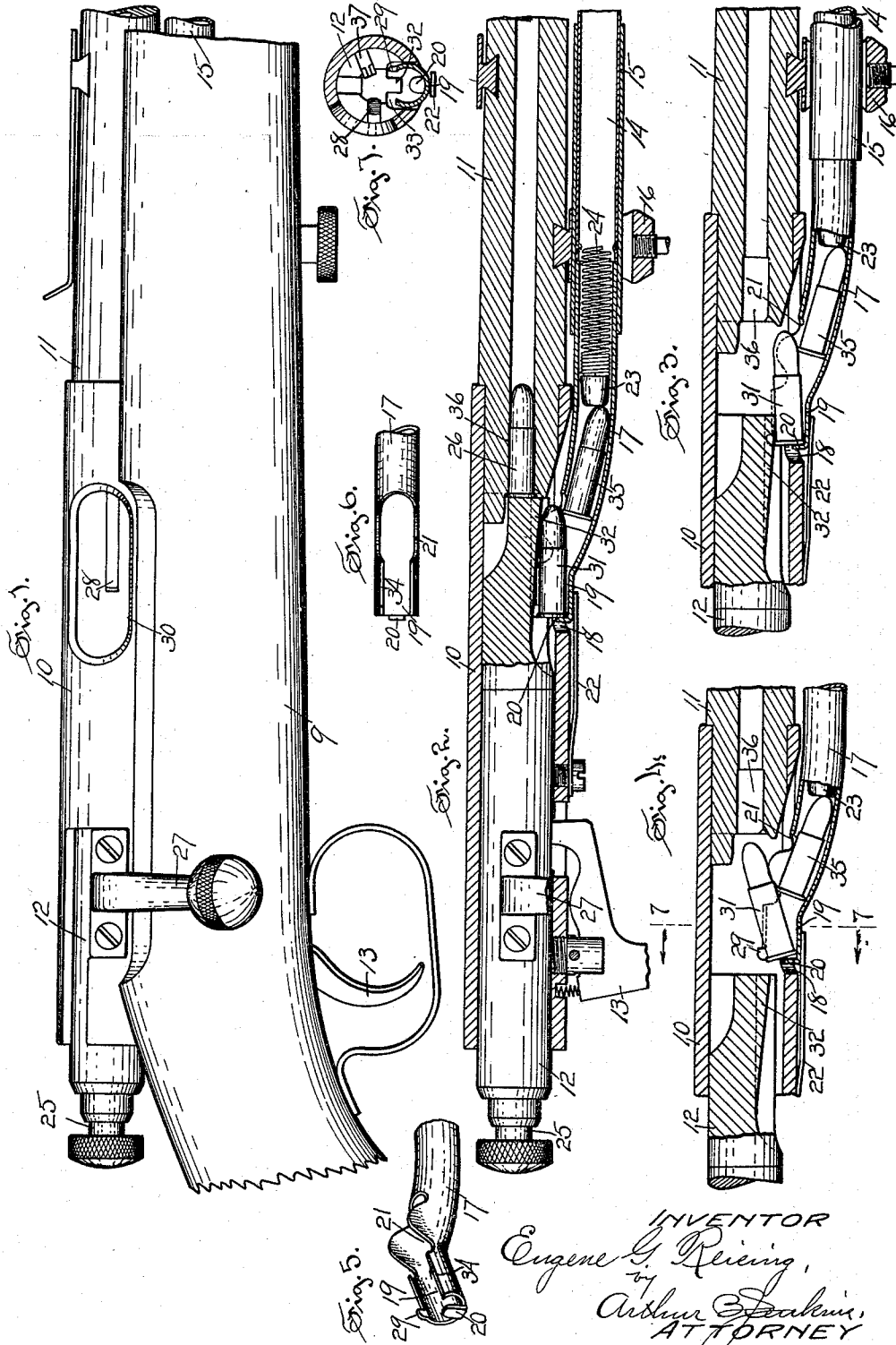
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FIREARM

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FIREARM

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My invention relates to that class of firearms having a stock the end of which is commonly held against the shoulder of a person when the piece is discharged, such firearms being frequently referred to as rifles, and an object of my invention, among others, is the production of a firearm of this class that shall be simple in construction and particularly efficient in operation.

One form of a firearm embodying my invention and in the construction and use of which the objects herein set out, as well as others, may be attained is illustrated in the accompanying drawing, in which—

Figure 1 is a side view of a portion of the stock of my improved firearm together with the receiver and rear end of the barrel supported in said stock.

Figure 2 is a view in lengthwise central section through the receiver, rear end of the barrel, and the rear end of the magazine tube embodying my invention.

Figure 3 is a similar view of the forward end of the receiver and the rear end of the barrel with the breech bolt moved a short distance away from the rear end of the barrel.

Figure 4 is a view similar to Figure 3, but illustrating the breech bolt located further away from the rear end of the barrel and at the extreme rearward limit of its movement.

Figure 5 is an isometric view of the rear end of the cartridge feed or magazine tube.

Figure 6 is a top view of the same.

Figure 7 is a view in section on a plane denoted by the dotted line 7—7 of Figure 4.

In the accompanying drawing the numeral 9 denotes the stock of my improved firearm that may be of any desired form and having a receiver 10 mounted therein in any suitable manner, with a barrel 11 secured to the forward end of the receiver and a breech bolt 12 slidably mounted in a breech bolt chamber in the receiver. A trigger 13 is pivotally mounted in the receiver to control the operations of the breech bolt, all of the parts thus far described, except as to the forward end of the breech bolt, being of any well-known form and arrangement and for which reason a further and detailed illustration and description are omitted herein except in so far

as they may have to do with the devices for supplying cartridges in position to be forced into the barrel such devices forming the subject matter of my present invention.

This my improved feeding and loading mechanism comprises a magazine tube 14 enclosed within a casing 15 mounted underneath the barrel 11. The rear end of the casing extends into an opening in a support 16 secured to the underside of the barrel the opening in said support being somewhat larger than the diameter of the casing in order to permit the latter to have a lateral movement. The front end of the casing is secured to the barrel near its forward end in a manner common to firearms of this class, and the tube 14 is removably secured within the casing in a manner common to small caliber rifles, this arrangement of the casing 15 and the magazine tube constituting no part of my present invention except in connection with the parts now to be described.

A loading tube 17 is rigidly secured to the rear end of the casing 15 said loading tube having a lengthwise opening therethrough communicating with the openings in the tube 14 and casing 15. This loading tube is curved upwardly at its rear end and projects into an opening 18 in the forward underside of the receiver 10. Said loading tube is formed with a cartridge support 19 in the form of a shelf that terminates in a cartridge stop 20 in the form of a lip projecting upwardly from the rear end of the shelf and as shown in Figures 2 to 5 of the drawing. A releasing opening 21 is formed in the upper side of the loading tube at its rear end through which cartridges are released for entry into the opening in the breech of the barrel.

The loading tube is arranged to have a limited yielding movement laterally, as herein shown, a tube supporting spring 22 being secured to the underside of the receiver and supporting at its forward front end the rear end of said loading tube, and as shown in Figures 2, 3 and 4 of the drawing. A feed plunger 23 is secured to a feed spring 24 within the magazine tube 14, said spring extending substantially to the forward end of

said tube at which point it is secured to the tube in a manner that will be readily understood and which, therefore, does not require a showing herein.

5 In the operation of the firearm thus far described, after the casing 15 has been filled with cartridges through a lateral opening at its front end in a manner common to structures of this class, the magazine tube 14,
10 which has been pulled outwardly to the forward end of the casing, is pushed inwardly over the cartridges, the plunger 23 moving backwardly by contact with the end cartridge, thereby compressing the spring 24.
15 A pressure is thus exerted upon the line of cartridges in the magazine tube with a result that the cartridges will assume the position shown in Figure 2, the breech bolt being closed.

20 When the cartridge 26 in the barrel breech has been fired after release of the hammer 25 by the trigger 13, in a manner that will be readily understood, the breech bolt handle 27 is rocked upwardly to unlock the breech bolt
25 and the latter is then pulled rearwardly by the operation of said handle. In this operation a lip on an extractor 28 engages the rim of the cartridge shell and withdraws it from the breech in the barrel in a manner that will be readily understood. As the cartridge
30 shell moves backwardly, it encounters an ejector 29 in the form of a lug on one side at the rear end of the loading tube 17, and as shown in Figure 5 of the drawing, which
35 causes the cartridge shell to be quickly tipped to one side and thrown outwardly through the opening 30 in the side of the receiver 10, as shown in Figure 1 of the drawing.

40 After the breech bolt has been moved rearwardly to uncover the leading cartridge 31 in the loading tube the latter is tipped upwardly into the position shown in Figure 4. To effect this purpose a rib 32 is formed on the under side of the breech bolt between grooves
45 33 extending lengthwise of the breech bolt. The rib is tapered so that it is thicker at its outer than at its inner end. Consequently as the breech bolt moves back this rib exerts
50 more and more pressure upon the rim of the cartridge 31 thereby depressing the rear end of the loading tube against the pressure of the spring 22.

When the breech bolt frees the cartridge 31 in the manner just described the rim of the
55 cartridge shell is held by retaining lips 34 forming opposite edges of the opening 21 in the loading tube, and as shown in Figure 5 of the drawing, the rim not being able to pass through the opening between said lips.

60 The pressure of the next cartridge 35 in the loading tube against the nose of the cartridge 31 aids in tipping the cartridge into the position shown in Figure 4, such nose now being in position for entry into the breech opening
65 36 in the barrel.

When the cartridge 31 is released, as herein described, the spring 22 forces the loading tube upwardly so that the rim of the cartridge is now in front and in the path of movement
70 of the rib 32, and as the breech bolt is now forced home by operation of the handle 27, said rib engaging the rim of the cartridge, forces it into the breech opening 36 in the barrel into the position shown in Figure 2,
75 and the loading is thus effected ready for a repeated firing operation.

It will be understood that the hammer 25 is engaged by the trigger in the forward movement of the breech bolt in a manner common to small caliber rifles of this class,
80 and that when the hammer is released and thrown forward it strikes a firing pin 37 forcing the latter against the cartridge to explode it. Owing to the usual construction of these parts a specific showing and description
85 have been omitted herein.

In accordance with the provisions of the patent statutes I have described the principles of operation of my invention together
90 with the device which I now consider to represent the best embodiment thereof; but I desire to have it understood that the device shown is only illustrative and that the invention may be carried out by other means
95 and applied to uses other than those above set out.

I claim:

1. A firearm including a barrel, a magazine tube extending lengthwise along one side of the barrel and opening to the rear thereof,
100 means for exerting pressure at the forward end of a line of cartridges in said tube, a cartridge support for the leading cartridge in said line, means for placing said leading cartridge normally resting on said support
105 with its nose in position to receive on the under side thereof pressure of the next cartridge in the line, a stop to limit backward movement of said leading cartridge, and means for forcing said leading cartridge into
110 said barrel.

2. A firearm including a barrel, a magazine tube extending lengthwise along one side of the barrel and opening to the rear thereof,
115 means for effecting limited yielding lateral movement of said tube to place a cartridge in the path of movement of a breech bolt, means for exerting pressure at the forward end of a line of cartridges in said tube, a cartridge support for the leading cartridge
120 in said line, a stop to limit backward movement of said leading cartridge on said support, and a slidably mounted breech bolt against which said leading cartridge is pressed in said tube.
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3. A firearm including a barrel, a magazine tube extending lengthwise along one side of the barrel and opening to the rear thereof,
130 means for effecting a limited yielding lateral movement of said tube to place a car-

tridge in the path of movement of a breech bolt, means for exerting a pressure at the forward end of a line of cartridges in said tube, a cartridge support for the leading cartridge
 5 in said line, a stop to limit backward movement of said leading cartridge on said support, a slidably mounted breech bolt against which the leading cartridge is pressed in
 10 said tube, and means on said bolt to increase the pressure of said cartridge thereagainst as the bolt is moved backwardly.

4. A firearm including a barrel, a magazine tube extending lengthwise along one side of the barrel and opening to the rear
 15 thereof, a spring against which said tube rests to raise the tube and place a cartridge in the path of a breech bolt, means for exerting pressure at the forward end of a line of cartridges in said tube, a cartridge sup-
 20 port for the leading cartridge in said line, a stop to limit backward movement of said leading cartridge on said support, and a slidably mounted breech bolt against which said leading cartridge is pressed by the action of
 25 said spring against said tube.

5. A firearm including a barrel, a magazine tube extending lengthwise along one side of the barrel and curved upwardly in rear of said barrel, means for exerting pressure
 30 at the forward end of a line of cartridges in said tube, a support formed as a part of said tube to receive the leading cartridge in said line, said support being arranged to permit self tipping movement of said cartridge
 35 out of said line, and means for forcing said leading cartridge into said barrel.

6. A firearm including a barrel, a magazine tube extending lengthwise along said barrel and curved upwardly in rear of said barrel,
 40 means for exerting pressure at the forward end of a line of cartridges in said tube, a support angularly disposed with respect to the curved portion of said tube to receive the leading cartridge in said line and permit
 45 said leading cartridge to normally tip out of line to receive upward pressure of said line, and means for forcing said leading cartridge into said barrel.

7. A firearm including a barrel, a magazine tube extending lengthwise along one side of the barrel and curved upwardly in rear of said barrel, means for exerting pressure
 50 at the forward end of a line of cartridges in said tube, a support arranged substantially parallel with the axis of the barrel to receive the leading cartridge in said line, said support being of a length to permit said leading cartridge to normally tip out of line
 55 and to rest on said support thereby to receive pressure of said line on the under side of said leading cartridge, and means for forcing said leading cartridge into the barrel.

8. A firearm including a receiver having an opening in its under surface, a barrel
 60 secured to the forward end of said receiver,

a magazine tube extending lengthwise along the underside of said barrel and curved upwardly into said opening in the receiver, means for exerting pressure at the forward
 70 end of a line of cartridges in said tube, a support at the end of and integral with the upwardly curved part of said tube for the leading cartridge in said line, a stop to receive said leading cartridge to limit its backward movement,
 75 and means for forcing said leading cartridge into said barrel.

9. A firearm including a barrel, a magazine tube extending lengthwise along one side of the barrel and curved upwardly in rear of said barrel, means for exerting pressure
 80 at the forward end of a line of cartridges in said tube, a support at the outlet end of said tube for the leading cartridge in said line, lips formed on said tube to overlie said support to prevent rising movement of the rear
 85 end of said leading cartridge, a stop to receive said leading cartridge and limit its backward movement, and means for forcing said leading cartridge into said barrel.

10. A firearm including a receiver having an opening in its under surface, a barrel secured to the forward end of said receiver, a magazine tube extending lengthwise along
 90 the under side of the barrel and curved upwardly into said opening in the receiver, means for yieldingly forcing said tube upwardly into said opening in the receiver, means for exerting pressure at the forward
 95 end of a line of cartridges in said tube, a support at the end of said tube to receive the leading cartridge in said line to permit tipping movement thereof on to said support, lips at the end of said tube to prevent rising movement of the rear end of the cartridge,
 100 and a breech bolt slidably mounted in said receiver to engage said cartridge and force it into said barrel.

11. A firearm including a receiver having an opening in its under surface, a barrel secured to the forward end of the receiver, a magazine tube extending lengthwise along
 110 the under side of the barrel and curved upwardly into the opening in the receiver, said tube terminating in an integrally formed support for a cartridge, means for exerting pressure on a line of cartridges located in said tube, a spring upon which the end of said tube rests, a breech bolt slidably mounted in said receiver, and a rib tapered to receive the
 115 leading cartridge in said line and to increase the pressure of said spring against said cartridge to ensure lifting of the cartridge into the path of the breech bolt.

12. A firearm including a receiver having an opening in its under side, a barrel secured
 125 to the forward end of the receiver, a magazine tube extending lengthwise along the under side of the barrel and curved upwardly into said opening in the receiver, means for exerting pressure on the forward end of a
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line of cartridges in said tube, a cartridge support at the end of said tube arranged at an angle to the curved portion thereof and to receive the leading cartridge in said line, a stop for said leading cartridge at the end of said tube, lips formed on the upper side of said tube to prevent rising movement of the rear end of said cartridge, and a breech bolt slidably mounted in said receiver to engage said leading cartridge and force it into said barrel.

13. A firearm including a receiver having an opening in its under surface, a barrel secured to the forward end of the receiver, a breech bolt movably mounted in the receiver, a magazine tube extending lengthwise along the under side of the barrel and curved upwardly and terminating with its free end within a chamber in the receiver, a rest integrally formed in the rear end of the receiver to receive a cartridge and permit it to normally tip out of line with the following cartridges in the tube so that its point will be raised above the next succeeding cartridge, and means for raising the tube to place said cartridge in the path of the breech bolt.

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