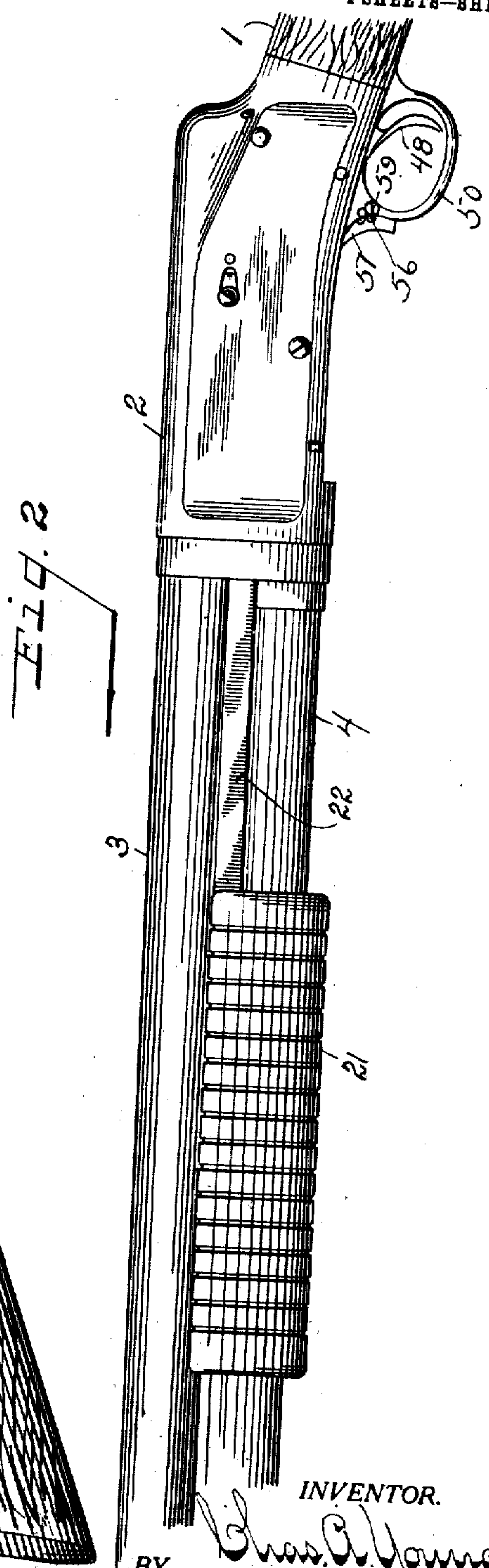
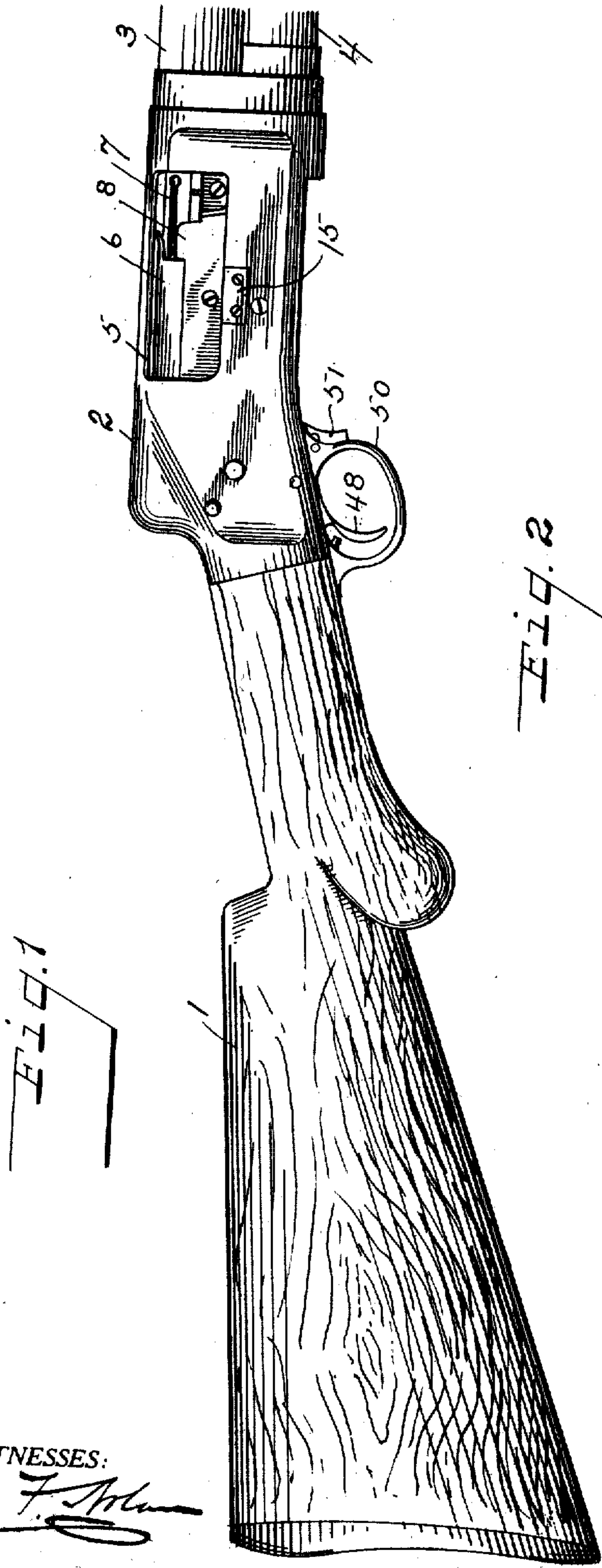


954,663.

C. A. YOUNG.
FIREARM.
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4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

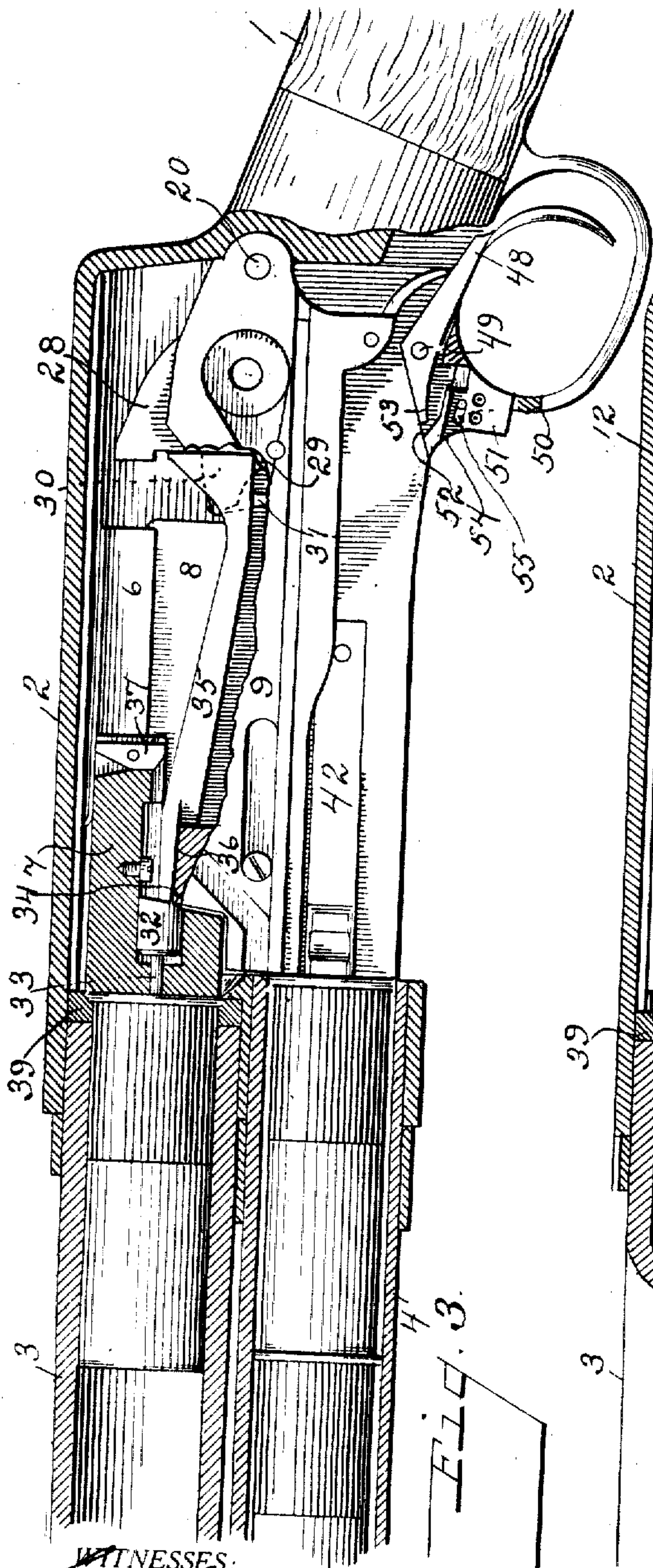


Fig. 3.

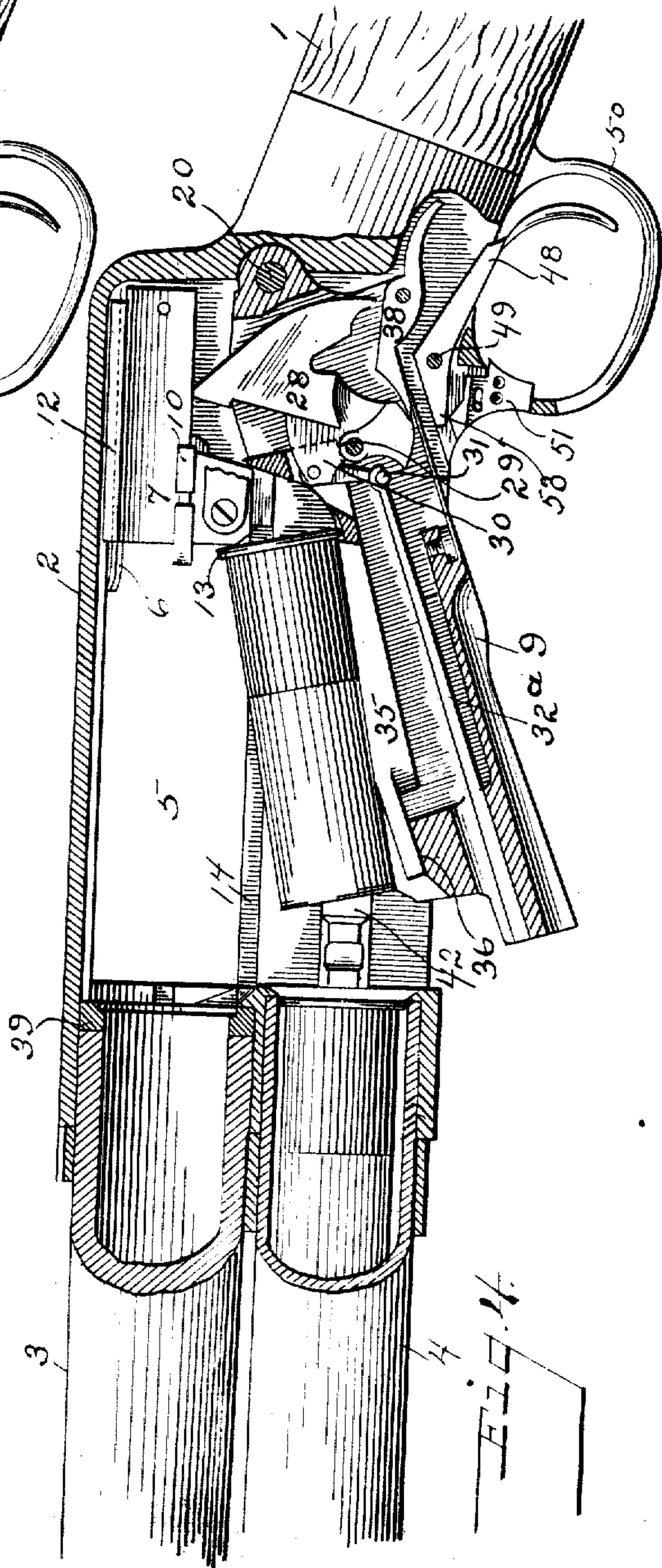


Fig. 4.

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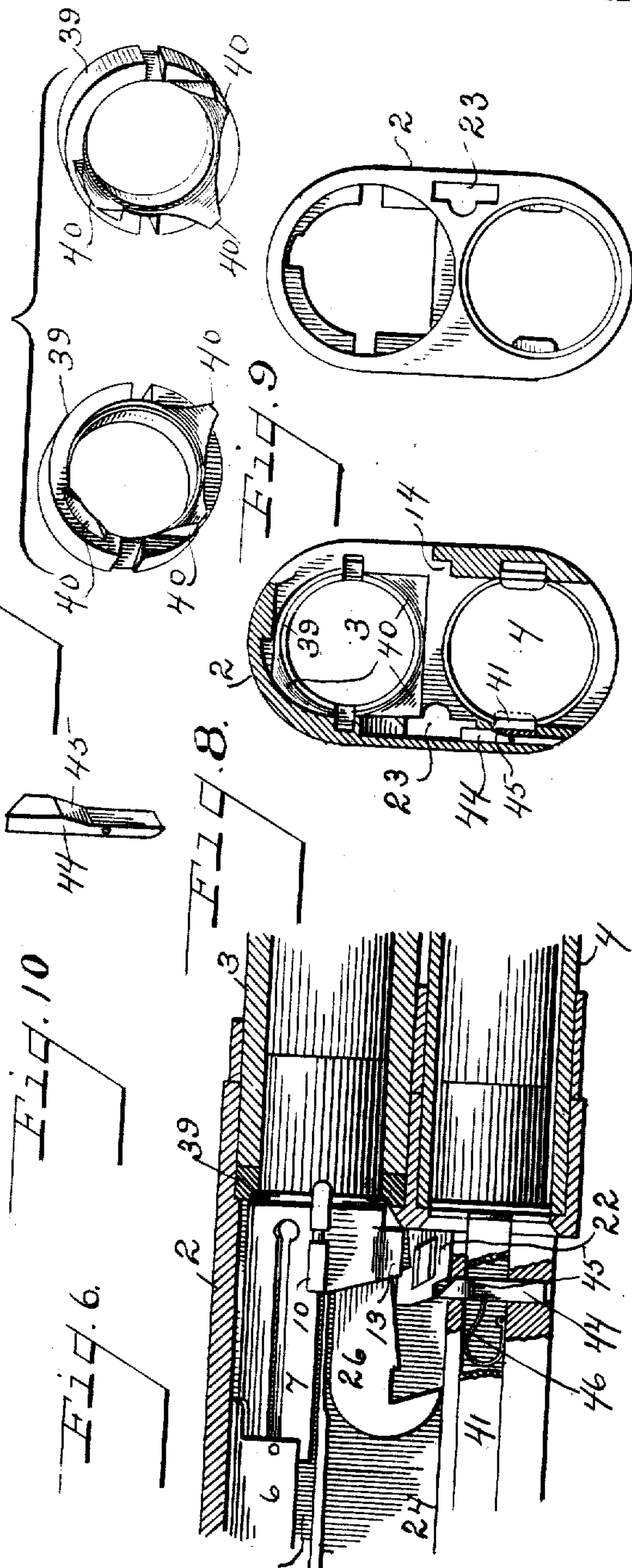
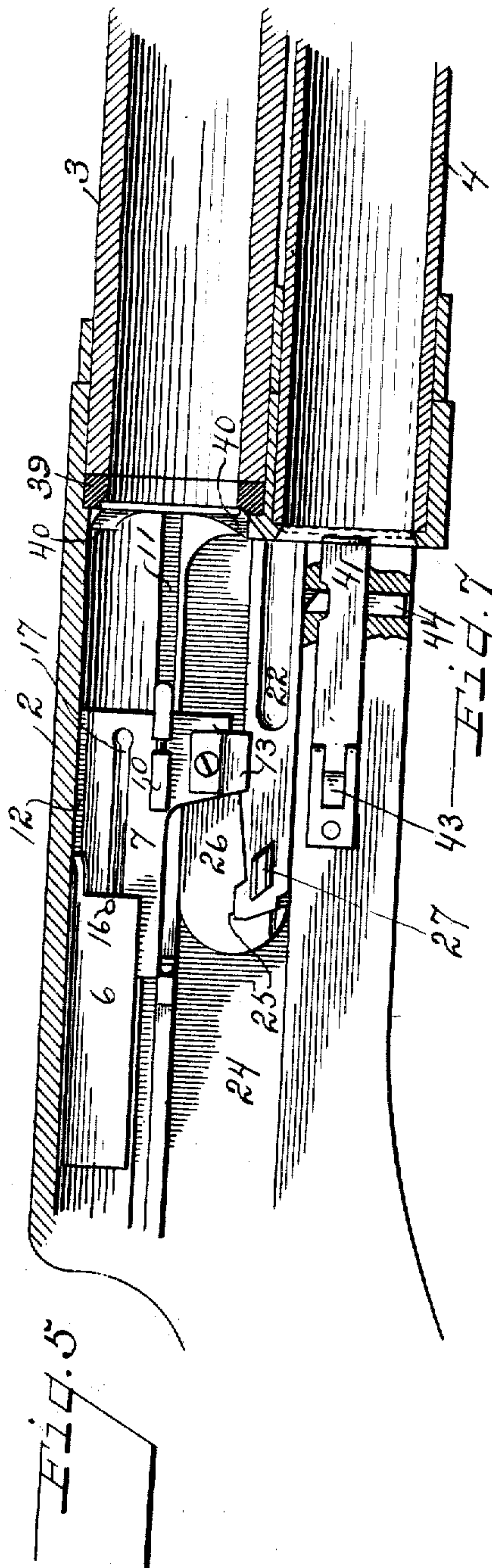
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4 SHEETS—SHEET 3.



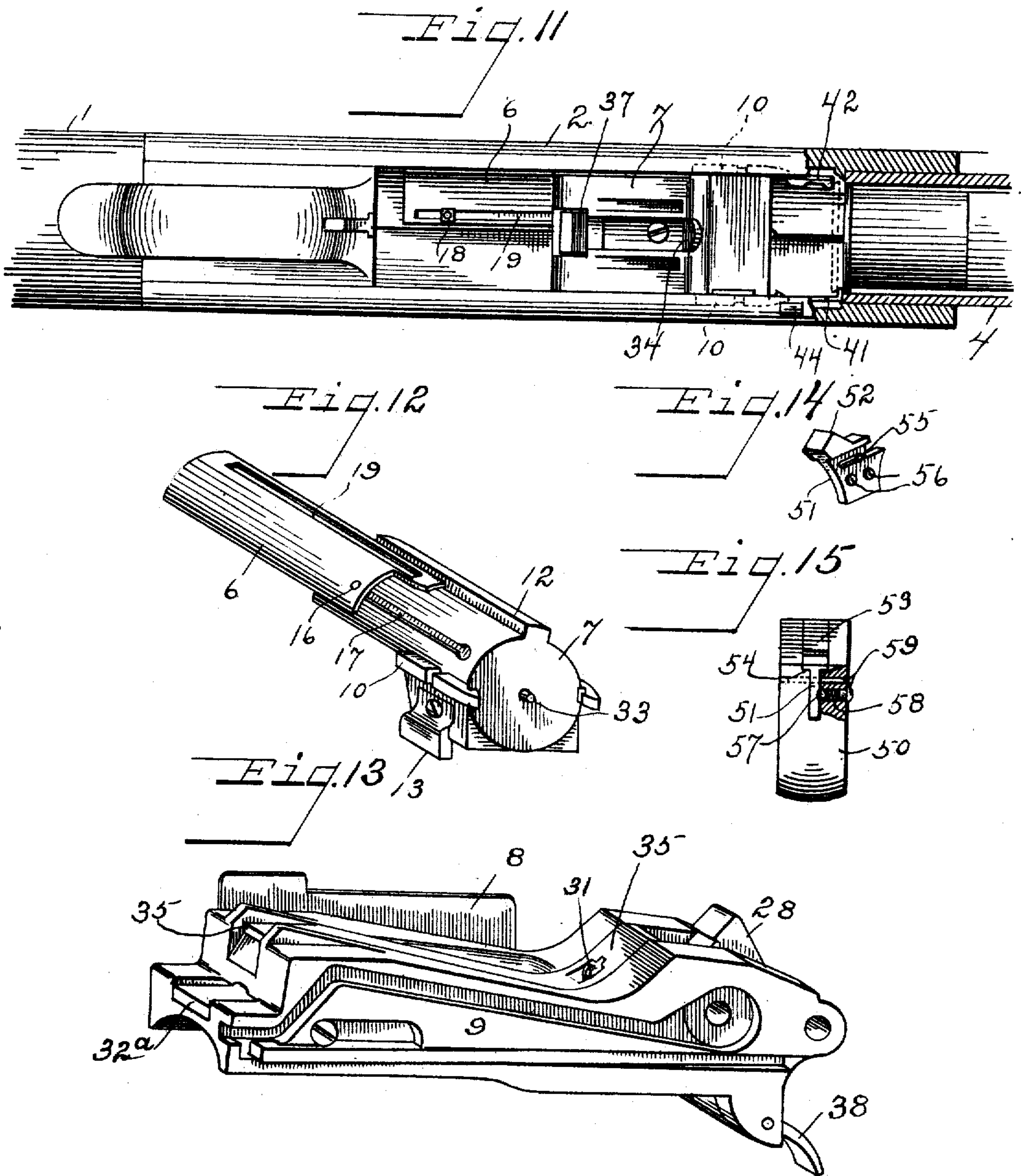
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

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FIREARM.

954,663.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed January 2, 1908. Serial No. 408,041.

To all whom it may concern:

Be it known that I, CHARLES A. YOUNG, a citizen of the United States, residing near Enon, in the county of Clark, State of Ohio, have invented certain new and useful Improvements in Firearms, of which the following is a specification.

My invention relates to fire arms and particularly to repeating or magazine guns.

10 The invention relates especially to improvements in that class of magazine guns in which the breech block is arranged to move longitudinally rearward and forward in opening and closing the breech, and in 15 which a carrier is located below the breech block and adapted to swing in a vertical plane to receive a cartridge from the magazine and present it forward of the breech block in such position that the forward 20 movement of the breech block will force the cartridge from the carrier into the barrel, the parts being actuated by a reciprocating fore arm grip or handle, located forward of the frame of the gun and reciprocating in a 25 line substantially parallel with the axis of the gun barrel.

The invention relates further to improvements upon the construction set forth in Patent 441,390 dated Nov. 25, 1890.

30 The object of the invention is to greatly simplify the construction as well as the means and mode of operation of such devices whereby they will not only be cheapened in construction but will be rendered more 35 efficient, safe, and positive in operation and unlikely to get out of repair.

A further object is to provide a structure in which the operating parts will be inclosed in such manner as to protect the 40 shooter in case of accidental discharge, and to provide means whereby the firing pin will be moved and retained out of operative position until the arm is in condition for firing.

45 A further object is to provide means to facilitate the entrance of the cartridge to the barrel, and to control the escape of the cartridges or shells from the magazine.

A further object is to provide a safety 50 lock for the trigger to retain said trigger in such position that the lock mechanism can not be accidentally operated by the closing of the gun.

55 With the above primary and other incidental objects in view the invention consists of the means, mechanism, construction,

and mode of operation or their equivalents, hereinafter described and set forth in the claims.

In the drawings Figures 1 and 2 are side 60 elevations of portions of the assembled gun in closed condition, showing the right and left sides of the arm respectively. Fig. 3 is a longitudinal sectional view of the parts in closed position. Fig. 4 is a similar view 65 showing the arm in open condition. Fig. 5 is a longitudinal sectional view showing the interior side opposite that shown in Figs. 3 and 4, with the breech block in partially open or closed position and the carrier re- 70 moved. Fig. 6 is a view similar to Fig. 5 showing the breech block closed. Fig. 7 shows two views of the ring or cartridge seat which is located at the rear of the barrel. Fig. 8 is a transverse section looking 75 forward showing the cartridge seat ring in place. Fig. 9 is an elevation of the forward end of the gun frame with the barrel magazine, and seat ring removed. Fig. 10 is a perspective view of the reciprocating cam 80 for operating one of the cartridge detents. Fig. 11 is a bottom plan view of the housing or receiver with the carrier removed. Fig. 12 is a perspective view of the breech 85 block and closure slide. Fig. 13 is a perspective view of the carrier. Fig. 14 is a perspective of the trigger safety lock slide. Fig. 15 is a front elevation of the trigger 90 guard, partly in section showing the relation of the safety lock slide.

Like parts are represented by similar characters of reference throughout the several views.

In the drawings 1 is the stock, 2 is the housing, commonly known as the "receiver," 95 3 and 4 are the barrel and magazine respectively, which both open into the housing 2 at their rear ends.

The magazine is provided with the usual magazine spring (not shown) operating to 100 successively force the cartridges in the magazine rearward when said cartridges are released by the hereinafter described detents. The housing 2 is an integral member having only an opening in the under side through 105 which the magazine may be charged, and an opening 5 on the right side or that side away from the shooter when in use, through which the exploded shell is ejected, or the cartridge if it be not exploded. This open- 110 ing 5 is normally closed by a closure slide 6 carried on the breech block 7, which slide

coöperates with a shield 8 on the pivoted carrier 9, to completely cover the parts and close the opening 5 when the gun is in closed condition. The breech block 7 is arranged to reciprocate wholly within the housing 2, in which it is guided by ribs 10 on opposite sides engaging grooves 11 in the housing, together with a rib 12 engaging a corresponding groove in the top of the housing and a lug 13 extending both laterally and downwardly beyond the body of the block and engaging a rabbet 14 in the lower edge of the opening 5. A removable plate 15 (see Fig. 1) is provided to facilitate the entrance of the lug 13 to the housing. The closure slide 6 is curved to correspond with the interior of the housing, and is adapted to telescope with the breech block 7 to which it is slidably attached by a pin 16 engaging a groove 17 in the block 7. The slide is similarly attached to the housing 2 by a stud 18 engaging a slot 19 in the slide, as shown in Fig. 11. See also Fig. 12. The pin 16 by engaging with the forward end of the groove 17 causes the slide 6 to be carried rearward with the block 7 to uncover the opening 5, while the stud 18 engaging the rearward end of the slot 19 limits the forward movement of the slide.

It will be observed that the working parts of the gun are wholly inclosed by the housing 2 and slide and shield 6 and 8, which affords greater security and protection to the shooter in case of accident. In guns of this type it is usual for the housing to be open at the rear end, through which the hammer normally projects and through which the rear end of the breech block protrudes when in the rear or open position. Serious accidents have occurred by the breech block blowing open, and striking the shooter in the face or by the back flare from premature explosions powder burning the shooter through such openings.

One of the primary objects of the invention is to so arrange and inclose the parts that there will be no openings in the housing in the sides thereof toward the shooter through which such accidents may occur. Furthermore the opening 5 in the present instance is closed for the same reason.

The carrier 9 is journaled on the pin 20 to swing in a vertical plane within the housing and below the breech block 7, from the closed position as in Fig. 3 to the open position as in Fig. 4 and return. The forward end of the carrier is formed with a shoulder registering when closed with a similar shoulder on the block 7 and forms a brace against the breech block to resist recoil.

The actuating means for the block and carrier are quite the same as in the aforementioned patent, and will here be described only in a general manner. The reciprocating fore arm grip 21 is provided with

a rearward extending bar 22 projecting through the opening 23 in the front end of the housing 2 into a recess 24 in the side thereof. The rear end of the bar 22 has a nose 25 to engage a pivoted dog 26 on the breech block to form a coupling therewith by which said block will be reciprocated, said bar being disengaged from said block when said block is moved "home" and permitted an additional movement independent of the block.

A stud or boss 27 on the bar 22 engages a peculiarly shaped cam groove in the side of the carrier 9 and causes a corresponding swinging movement of said carrier in proper time. These movements are fully set forth in said Patent 441,390. The carrier 9 is constructed with a recess therein forming a chamber for the lock action. The hammer 28 is pivoted within the recess on a transverse pin, and is of such size and shape as to be wholly contained within the housing at all times thus making the arm what is generally known as "hammerless." The hammer 28 is formed with hub or flange 29 about its pivotal point, for the purpose hereinafter mentioned, and has a forward projecting tongue 30 of less thickness than the body of the hammer, to which is attached a stirrup 31 engaging a downward tending main spring 32^a, as best shown in Fig. 4. The firing pin, or connection from the hammer to the cartridge is in the present instance formed in two pieces or divisions. One portion 32 of the firing pin is mounted to reciprocate longitudinally in the breech block 7, and is provided with a reduced forward portion 33 and slightly beveled on the lower rear edge as at 34. The other portion 35 of the firing pin is mounted to reciprocate longitudinally within the carrier 9, being preferably supported at its forward end on a flat bearing surface 36 and at its rear end on the projecting flange or hub 29 of the hammer 28. The lower rear end of the portion 35 is recessed or bifurcated as indicated in Figs. 3 and 4, in such manner that the portion 35 will straddle the tongue 30 of the hammer and bear on the hubs 29 on either side thereof. The portion 35 of the firing pin is carried at all times by the carrier, and the initial movement of the carrier toward open position, moves the respective portions of the firing pin out of alinement, and the parts are maintained out of alinement until the limit of the final movement of the carrier into its closed position. Thus the respective portions are entirely disconnected and inoperative at all times except when the gun is fully prepared for firing. This construction greatly reduces the danger of premature discharge before the parts are in proper position. The bevel 34 of the portion 32 facilitates the alinement of the portions, and prevents the interference of

the portions if the portion 32 happens to be in its rearward position.

It is to be understood that at each discharge of the arm the rear or driving portion 35 of the firing pin will be advanced by the action of the hammer 28. To prevent possible interference between the portion 35 and the driven portion 32 of the firing pin upon closing the arm means is provided for positively retracting the driving portion 35 or returning it to normal position within the carrier at each operation of the reloading mechanism. The rear upper portion of the carrier, is formed with an inclined bearing surface which is engaged by the lower portion of the breech block as it approaches the limit of its rearward movement to force the carrier down to the limit of its swinging movement as is usual in this class of fire arms and as shown in the former patent 441,390 referred to. The rear portion of the firing pin 35 is formed with a similar inclined surface corresponding to that of the carrier when the driving portion 35 is in its normal or rear position. When engaged by the hammer 28, the portion 35 is advanced and the incline surface is advanced beyond the inclined surface or cam face of the carrier. Upon the rearward movement of the breech block, the lower portion thereof will engage the incline surface of the firing pin 35 before it engages the inclined surface of the carrier and will positively return the portion 35 to its normal position in which the inclined surface of the respective parts, the carrier and pin are in registry. This construction affords a further safe-guard inasmuch as if the firing pin should become clogged with dirt or the parts corroded, it might be inclined to stick in its forward or operated position, and upon closure of the arm, if the driven portion 32 happened to be in its advanced position or against the cartridge in the barrel, the impact of the portion 35 of the firing pin upon the inclined rear of the portion 32 might be sufficient to cause a premature discharge. However, with the driving portion 35 of the firing pin positively returned to normal position after each operation by the engagement therewith of the reciprocating breech block such possibility of premature discharge is entirely obviated.

The rear end of the breech block 7 is bifurcated as shown in Figs. 3 and 11 and in said bifurcation is pivoted a swinging dog 37 which engages and raises or cocks the hammer 28 during the rearward movement of the block, until the hammer is engaged by the sear 38 in the usual manner. On the return or forward movement of the breech block the dog 37 swinging on its pivot will ride freely over the hammer 28.

In order that the carrier and breech block shall smoothly and rapidly perform their

functions without jar or hesitation, it is necessary that the cartridge when presented before the breech block by the carrier shall readily and easily enter the chamber of the barrel. To this end the cartridge seat ring 39 located within the housing at the rear of the barrel is provided with inclined guides 40, projecting from the rear face of the ring into the housing. The lowermost guides are preferably rectangular in outline as shown in Figs. 7 and 8, but might be of other outline. The cartridge seat ring is inserted in the barrel socket from the forward end, and abuts a reduced portion or flange in the barrel socket of the housing, having therein a somewhat arch shaped opening, as shown in Fig. 9 through which the inclined guides 40 extend and with which the exterior of said guides will register. This construction coöperates in an important manner with the other parts to make a safe positively operating arm; for if the shells will not enter the chamber of the barrel readily the shooter will try to throw the cartridge out of the gun, and if he fails to give the gun a full stroke, as ordinarily constructed he will frequently release a second shell from the magazine, and so have two cartridges in the receiver at the same time, which would result in blocking the gun, and possibly in a premature explosion. A further precaution against such accidents is involved in the present invention, and comprises two detents 41 and 42 located on the opposite sides of the housing and controlling the escape of the shells from the magazine. The escape of the shells or cartridges is accomplished by two successive steps. The shell first engages the detent 41 as shown in full lines in Fig. 11, and when the gun is completely closed for firing this detent 41 is withdrawn from the path of the shell, and the latter is permitted a limited movement as indicated by dotted lines in said figure until it engages the detent 42, which is later withdrawn to allow the escape of the shell to the receiver when the receiver is in position to receive it.

The detent 41 construction is best shown in Figs. 5 and 6, and comprises a pivoted member 41 provided with a spring 43 which tends to move the detent out of the path of the shell or cartridge. Slidingly mounted in the housing in such manner as to engage the detent 41 is a reciprocating cam 44, shown in Figs. 5 and 6 and in detail Fig. 10. The cam slide 44 has an inclined face 45 adapted to engage the detent 41 and force same outward when said cam slide is depressed. A spring 46 located in a recess in the housing 2 back of the detent 41 tends to normally press the cam slide upward, which will permit the detent under action of the spring 43 to move out of the path of the cartridge. The cam slide 44 is provided with a bevel head which

extends into the path of the bar 22, as in Fig. 6. It is only while the breech is entirely closed and the bar 22 at the extreme forward limit of its stroke that the slide 44 is permitted to rise through the action of the spring 46, and allow the detent, 41 actuated by the spring 43 to move out of the path of the shell. The shell is thus allowed its preliminary rearward step, and is engaged by the detent 42. At the initial rearward movement of the bar 22 the detent is again moved into the path of the shells by the depression of the cam slide, the detent projecting back of the rim of the shell which has had its preliminary movement, and in position to engage the next succeeding shell. While the detent 41 has been described as a pivoted member having an actuating spring, it is obvious that a spring blade may be employed.

The detent 42 is located on the opposite side of the housing and a little to the rear of the position of the detent 41. It comprises a spring member having at the extremity an enlargement or boss extending into the path of the escaping shell, and also into the path of the swinging carrier by which it is adapted to be operated. After the shell has had its preliminary movement and is in position shown by dotted lines in Fig. 11 the downward movement of the carrier depresses the detent 42 and allows the shell under the action of the magazine spring to escape into the carrier. It will thus be seen that but one shell can pass the detent 41 at a time, and that the detent is positively locked in the path of the shell until the gun is entirely closed and the breech block in place; thus if perchance a defective shell should fail to enter the chamber of the barrel, which danger is reduced by the form of the ring seat, no amount of juggling of the operative parts could possibly release another shell until the gun is entirely closed, which would only be when the defective shell was safely in the barrel chamber or had been ejected from the gun. Another valuable feature of the double detent construction is that when the gun is in closed condition, at which time the cam slide is elevated and the detent 41 out of the path of the shells, the shells may be readily removed from the magazine without working them through the gun by merely depressing the detent 42 with the finger, said detent being readily accessible through the bottom opening of the housing. This is quite an advantage from the point of safety as each shell when worked through the gun to empty the magazine as is customary, must pass through the position for firing with the hammer of the gun cocked, by which condition accidents might occur.

In addition to the above mentioned safety devices there is a manually operated safety lock working in connection with the trigger.

The trigger 48 is pivoted at 49 in the upper

portion of the trigger guard 50. When the gun is in closed position the sear rests on the rear part of the trigger, and is oscillated to withdraw it from engagement with the hammer by the elevation of the rear of the trigger 48. When the gun is open the sear is moved away from the trigger as in Fig. 4. If when in this position the trigger should be operated, and blocked in its operated position by the entrance of a bit of dirt or other means, it is possible that the act of closing the gun might release the hammer by the pressure of the sear on the elevated trigger, although such accident would not discharge the cartridge as the firing pin parts would not yet be in alinement. However such an occurrence might disarrange the parts by releasing the hammer before it was in position, and interfere with the proper working of the gun. To obviate such a possibility and to provide further safety a safety lock slide 51 is provided in the forward portion of the trigger guard, having an inclined or cam shaped upper face 52 which will engage and raise the forward end 53 of the trigger 48 and hold it in its elevated or inoperative position, until moved from such engagement by the shooter. The lock slide 51 is provided with gibbs 54 on which it reciprocates in the trigger guard 50 its movement being limited in either direction by a pin extending through a slot 55 in the slide. To hold the slide in either its forward or inoperative position, or in its rearward or operative position there are provided two depressions 56 in the side of the slide. Located in the guard 50 is a hole in such position as to register with the respective depressions when the lock slide is in its different positions. Within said hole is a movable spring actuated member either a ball or a plug, shown as a ball at 57 Fig. 15. In said Fig. 58 is the spring bearing on said ball 57 which serves as a detent to the lock slide. A screw plug 59 retains the ball and spring in position. The lock slide thus described may also be used to lock the trigger when the gun is closed until the moment of firing, and will prevent accidental discharge of the arm, which is always cocked and in condition for firing when in closed condition. It will be seen that there is thus provided a gun which will be "safe" against accidental discharge, or premature discharge before the gun is fully closed, and in which the entire breech of the gun is so inclosed or housed as to afford full protection to the shooter against back flare or the gun blowing open, and in which it is impossible to so juggle the gun as to get two shells in the carrier at the same time, and which possess the other features of advantage before enumerated as desirable, but which obviously is susceptible of modification in the form, proportion, detail construction, and ar-

rangement of its parts without departing from the principles involved or sacrificing any of their advantages.

Having thus described my invention I claim:

1. In a fire arm as described, a stock, a barrel, a housing connecting said parts and having an opening therein for the ejection of the shell, a reciprocating breech block, a closure slide automatically operated by said breech block both into and out of registry with said opening, said block and slide being capable of movement independent of each other, substantially as specified.
2. In a fire arm as described a stock, a barrel, a housing connecting said parts and having an opening therein for the ejection of the shell, a swinging carrier within said housing, a closure shield carried by said swinging carrier and adapted to be moved by the operation of said carrier into and out of registry with said opening, substantially as specified.
3. In a fire arm as described, the combination with a stock, a barrel and a lock action of a reciprocating breech block, a pivoted carrier swinging in a vertical plane below said breech block, a divided firing pin, one portion of which is carried in said breech block, the other portion being carried in said carrier the respective portions being in operative alinement only when the arm is in closed condition, substantially as specified.
4. In a fire arm as described, the combination of a stock, a barrel, a reciprocating breech block, a pivoted carrier, a reciprocating firing pin in said breech block, adapted to engage and explode the cartridge, a reciprocating member carried by said pivoted carrier and actuated by the hammer of the lock mechanism, said reciprocating member being adapted to actuate said firing pin only when the arm is in closed condition, substantially as specified.
5. In a fire arm as described, the combination with a stock, a barrel and lock mechanism, of a seat ring for the cartridge, flaring guides leading to the seat of said ring and formed integral therewith, said guides projecting beyond the rear of the cartridge when in place, substantially as specified.
6. In a fire arm as described, the combination with a stock and barrel of a separable seat ring for the cartridge, inclined guides projecting from the rear face of said ring and located at points between the horizontal and vertical diameters of the ring, substantially as specified.
7. In a fire arm as described the combination of a stock, a barrel a housing connecting said parts and having an opening therein, a reciprocating breech block within said housing, a movable closure slide telescoping with said breech block and adapted when the gun is in closed condition to register with said opening, substantially as specified.
8. In a fire arm as described, the combination with a stock and a barrel, of a housing connecting said parts and having an opening therein, a two piece closure for said opening comprising a substantially vertically moving member, and a longitudinally moving member, said members cooperating to close said opening in the housing when the gun is in condition for firing, substantially as specified.
9. In a fire arm as described, a stock, a barrel, a housing connecting said parts, and having an opening therein, a reciprocating breech block, and a swinging carrier within said housing, a two piece closure for said opening, one member of which is actuated by the movement of said reciprocating breech block, the other member of said two piece closure being operated by the movement of said swinging carrier, substantially as specified.
10. In a fire arm as described, a stock, a barrel, and a housing connecting said parts and having an opening therein for the ejection of the shell, said opening being located in the side of said housing away from the shooter, a reciprocated closure for said opening, and means for automatically operating said closure by the opening and closing of the gun, substantially as specified.
11. In a fire arm as described, a stock, a barrel, a housing connecting said parts, a barrel socket in said housing, a cartridge seat ring located in said socket, projections on the rear face of said ring having a rectangular outline and an inclined surface leading to the cartridge seat, substantially as specified.
12. In a fire arm as described, a stock, a barrel, firing mechanism, a seat ring for the cartridge, a plurality of inclined guides projecting from the rear side of said seat ring, and located thereon in diagonal relation with the center thereof, substantially as specified.
13. In a fire arm as described, a stock, a barrel, a housing connecting said parts, a reciprocating breech block and a carrier, a lock action mounted in said carrier including a hammer, a pivoted pawl on said breech block adapted to engage and cock said hammer when said block is moved rearward, and to move freely over said hammer on the forward movement of said block, substantially as specified.
14. In a fire arm as described, a stock, a barrel, a housing connecting said parts a reciprocating breech block adapted to reciprocate wholly within said housing, a pivoted carrier, lock mechanism contained wholly within said housing, said lock mechanism being supported in and oscillating with said

pivoted carrier and means whereby said breech block upon its rearward movement will engage and cock said lock mechanism, substantially as specified.

15. In a fire arm as described, a stock, a barrel, firing mechanism, a magazine, a reciprocating breech block, and a swinging carrier, a reciprocating handle grip for operating said breech block and carrier, two detents controlling the escape of cartridges from said magazine, the primary detent or that first engaged by the cartridge being operated to release the cartridge upon the forward movement of said grip and the secondary detent being moved out of the path of the cartridge upon the rearward movement of the grip, substantially as specified.

16. In a fire arm as described, a stock, a barrel, firing mechanism, a magazine, a reciprocating hand operated member actuating the working parts, a detent controlling the escape of cartridges from the magazine, said detent being maintained out of the path of the cartridge when the breech is closed, means for moving said detent into the path of the cartridge upon the initial opening movement of the breech, and to positively lock said detent in the path of the cartridge until the breech is again closed comprising a cam shaped depressible plunger adapted to engage and move the detent when depressed, and means to depress said plunger at the initial opening movement, and means to remove said detent from the path of the cartridge upon the closing of the breech, substantially as specified.

17. In a fire arm as described, a stock, a barrel, firing mechanism, a magazine, a detent controlling the escape of cartridges from the magazine and positively locked in the path of the cartridges at all times while the breech block is away from closed position, said detent being released and permitted to withdraw from the path of the cartridge only when the breech block is returned to its closed position and the second detent extending into the path of the cartridge when the gun is closed and adapted to engage the cartridge when released by the first mentioned detent, said second detent being withdrawn to release the cartridge by the opening movement of the gun, substantially as specified.

18. In a fire arm as described, a stock, a barrel, firing mechanism, a magazine, actuating devices for the reloading and resetting mechanism including a reciprocating bar, a spring actuated detent normally tending to move out of the path of the cartridges, a reciprocating cam member located intermediate the detent and reciprocating bar adapted to move said detent into the path of the cartridge, said cam member being separated from and actuated by said reciprocating bar, said cam member and bar moving in paths

perpendicular to each other, substantially as specified.

19. In a fire arm as described, a stock, a barrel, firing mechanism, a magazine, and actuating devices for the reloading and resetting mechanism, in combination with two detents controlling the escape of the cartridges, the primary detent or that first engaged being inoperative or out of the path of the cartridges when the arm is closed, the second detent at such times engaging the cartridge, said initial detent being moved into the path of the cartridges by the initial movement of the actuating devices, the second detent being withdrawn and the cartridge released by an additional movement of the actuating devices, substantially as specified.

20. In a fire arm as described, a stock, a barrel, firing mechanism, a magazine, two detents controlling the escape of the cartridges from said magazine, a reciprocating actuating member for operating the initial detent, and means for operating the other detent by the movement of the carrier, substantially as specified.

21. In a fire arm as described, a stock, a barrel, firing mechanism, a magazine, a detent controlling the escape of cartridges from the magazine, a vertically movable cam member operating said detent, a horizontally reciprocating member adapted to operate said cam member, and hold same in its operated position until said reciprocating member is returned to its normal position, substantially as specified.

22. In a fire arm as described, a stock, a barrel, firing mechanism, a magazine, a detent controlling the escape of the cartridges from the magazine, a depressible cam slide operating said detent, a reciprocating bar operating the breech block of the arm, and adapted to depress said cam member upon its initial rearward movement and a spring to raise the depressed cam when said bar has been moved from engagement therewith, substantially as specified.

23. In a fire arm as described, a stock, a barrel, firing mechanism, a magazine, a detent controlling the escape of cartridges therefrom and inoperative when the arm is in closed condition, a cam member adapted to move said detent into operative position, a reciprocating member separated from the cam member adapted to operate said cam upon its initial movement and lock said cam in its operated position until the reciprocating member is returned to normal position, substantially as specified.

24. In a fire arm as described, a stock, a barrel, a housing connecting said parts, an opening in the side of said housing, a reciprocating breech block in said housing of less length than that of the opening and adapted to be introduced laterally into said housing

through said opening and means to retain the block within the housing, substantially as specified.

25. In a fire arm as described, a stock, a barrel, a housing connecting said parts and having an opening therein for the ejection of the shell, a reciprocating breech block, a closure for said opening actuated by the movement of said breech block both into and out of operative position, said block and slide being capable of limited independent movement, said block, as it approaches the limit of its stroke toward closed position, being adapted to cause the movement of said closure to close said opening, and as it approaches the limit of its reverse stroke, to cause the withdrawal of said closure from said opening, substantially as specified.

26. In a fire arm as described, a stock, a barrel, a housing connecting said parts and having an opening therein for the ejection of the shell, a reciprocating breech block, a closure for said opening operated by said breech block, one of said parts having therein a longitudinal recess closed at each end, a projection on the other part engaging said recess, said breech block and closure being adapted to limited movement in either direction independent of each other, said breech block being adapted to engage and move said closure into and out of operative position as it approaches the limit of its stroke in opposite directions, substantially as specified.

27. In a fire arm as described, a stock, a barrel, a housing connecting said parts, firing mechanism, a reciprocating breech block within said housing, flanges on said block engaging grooves in the interior of the housing, including a flange extending both laterally and downwardly beyond the body of the breech block and engaging a corresponding recess in the housing, substantially as specified.

28. In a fire arm as described, a stock, a barrel, a housing connecting said parts having an opening in the side thereof, a partial closure for the opening, a breech block mounted to reciprocate within the housing, said breech block being capable of being in-

troduced laterally into the housing through the opening thereof and to be retained therein by the partial closure, substantially as specified.

29. In a fire arm as described, a stock, a barrel, a housing connecting said parts and having an opening therein for the ejection of the shell, a notched recess in the bottom of said opening, a closure for said recess, a breech block mounted to reciprocate within the housing, said breech block being adapted to be passed through the combined opening and recess into the housing, and to be retained therein by the closure of the notched recess, substantially as specified.

30. In a fire arm as described, the combination with a stock, a barrel, a lock action and a reciprocating breech block, of a swinging carrier, a divided firing pin one portion of which is carried in said carrier and adapted to be retracted by the reciprocating movement of said breech block, substantially as specified.

31. In a fire arm as described, the combination with a stock, a barrel, a lock action, a carrier, and a reciprocating breech block, of a divided firing pin comprising a driving and a driven member located in the carrier and breech block respectively, means for retracting the driving member carried in said carrier by the reciprocatory movement of the breech block.

32. In a fire arm as described, a stock, a barrel, a lock action, a divided firing pin, a reciprocating breech block in which one member of said divided firing pin is carried, a movable carrier in which the other member of said divided firing pin is carried, a portion of the latter member of said firing pin projecting into the path of said reciprocating breech block and adapted to be retracted by the reciprocatory movement thereof.

In testimony whereof I have hereunto set my hand this 26th day of December 1907.

CHARLES A. YOUNG.

Witnesses:

HARRY F. NOLAN,
F. L. WALKER.