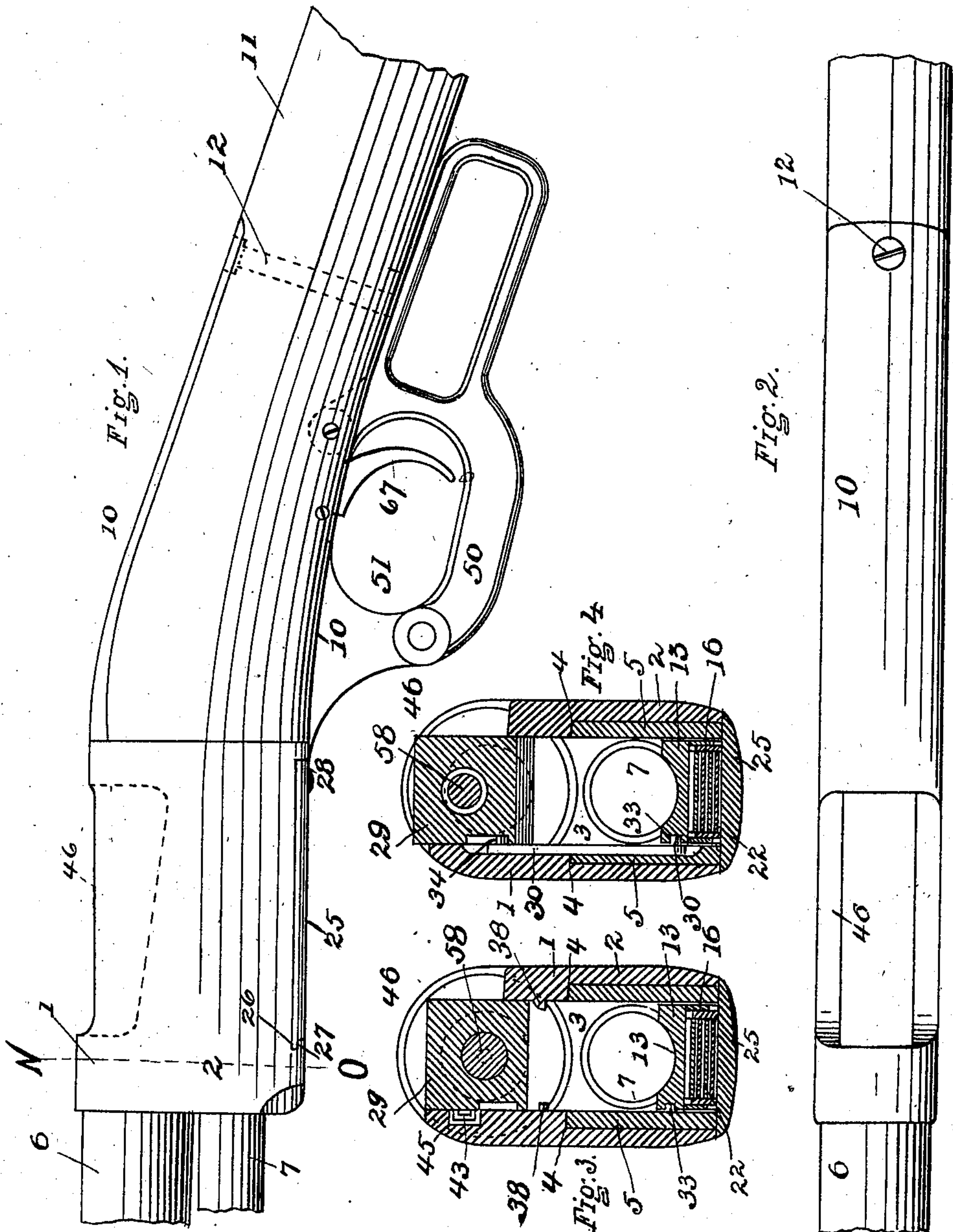


No. 833,898.

PATENTED OCT. 23, 1906.

E. H. RISLEY.
MAGAZINE FIREARM.
APPLICATION FILED JUNE 24, 1903.

5 SHEETS—SHEET 1.



WITNESSES
Rich. A. George
E. F. De Giorgi.

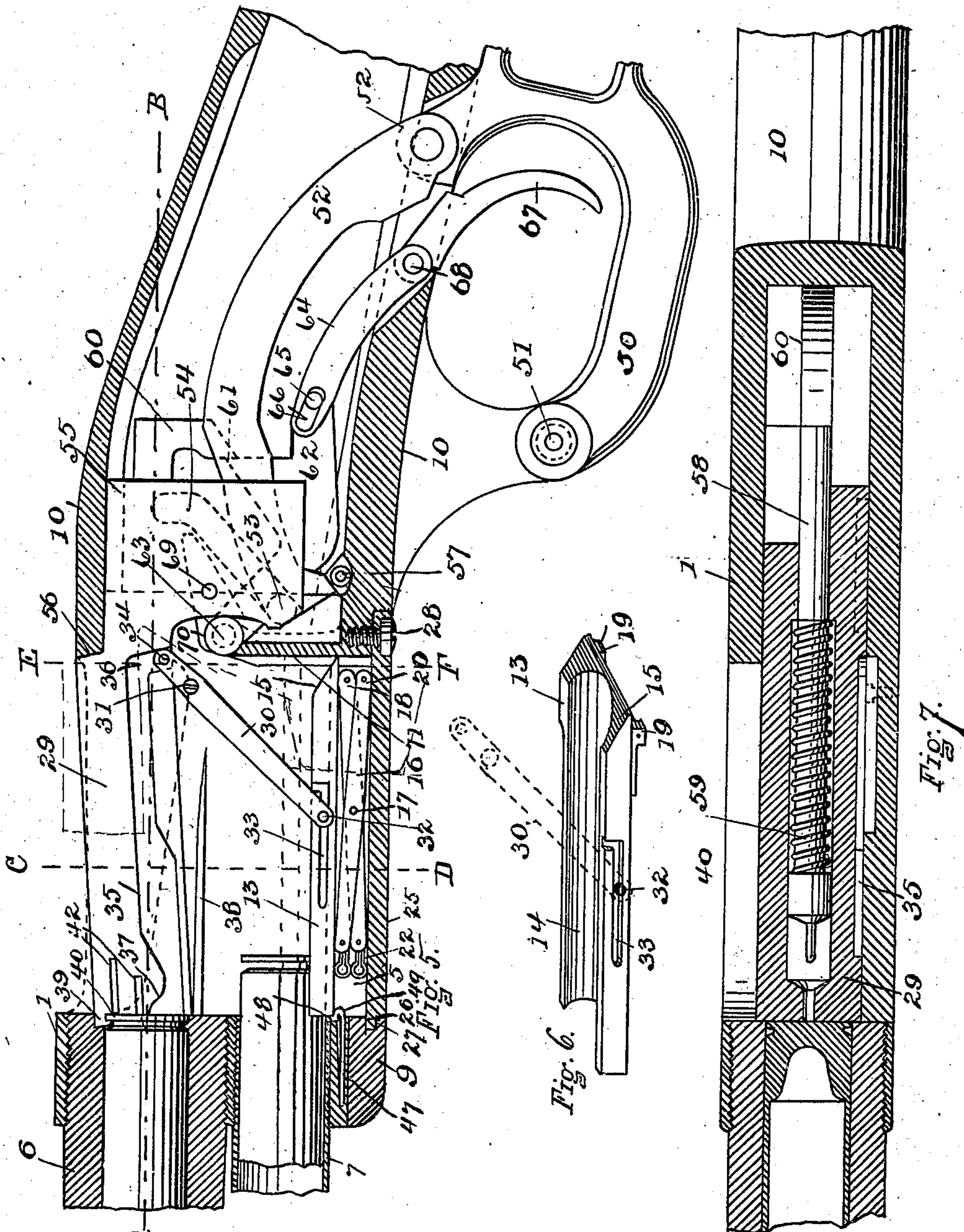
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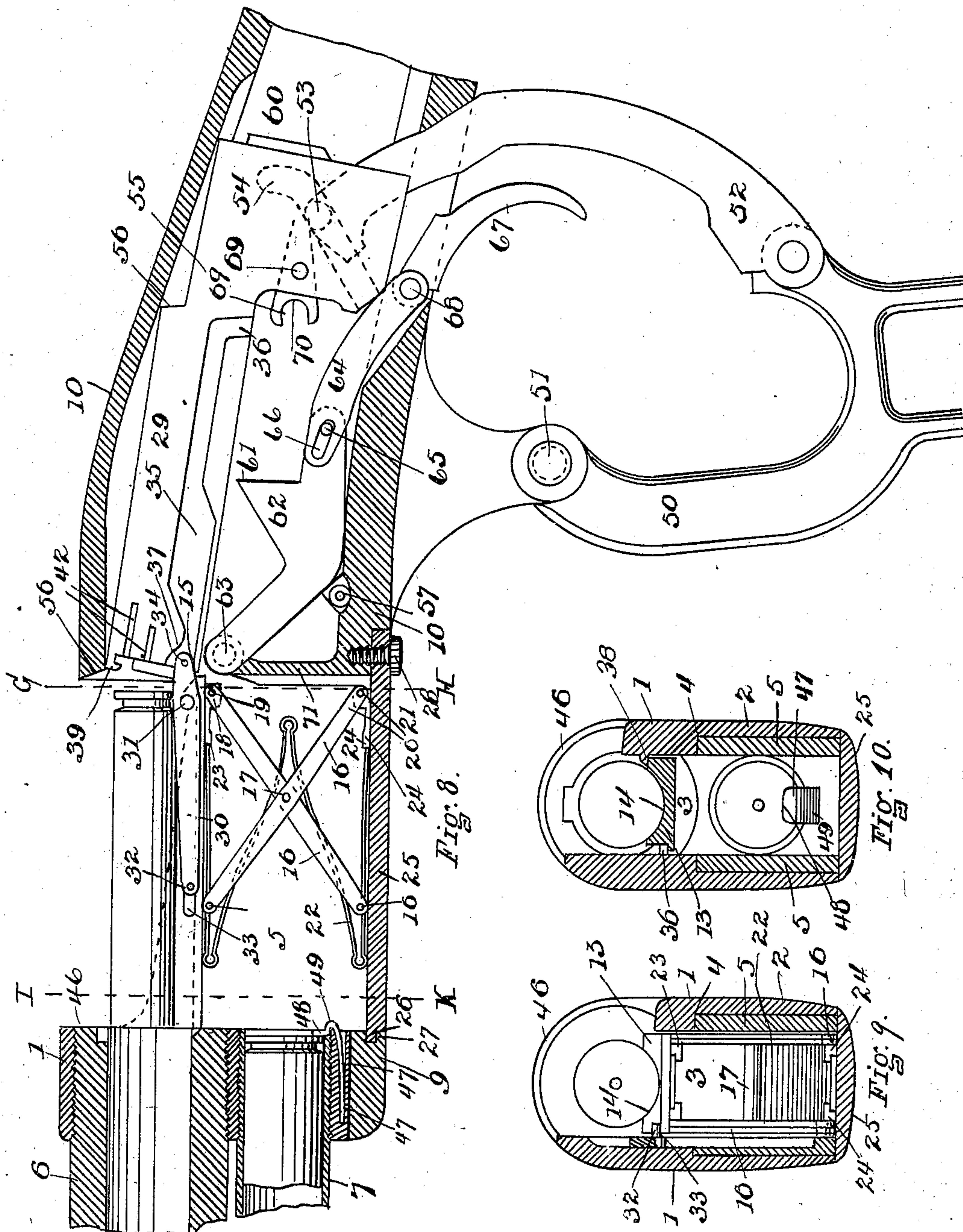
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5 SHEETS—SHEET 3.



WITNESSES

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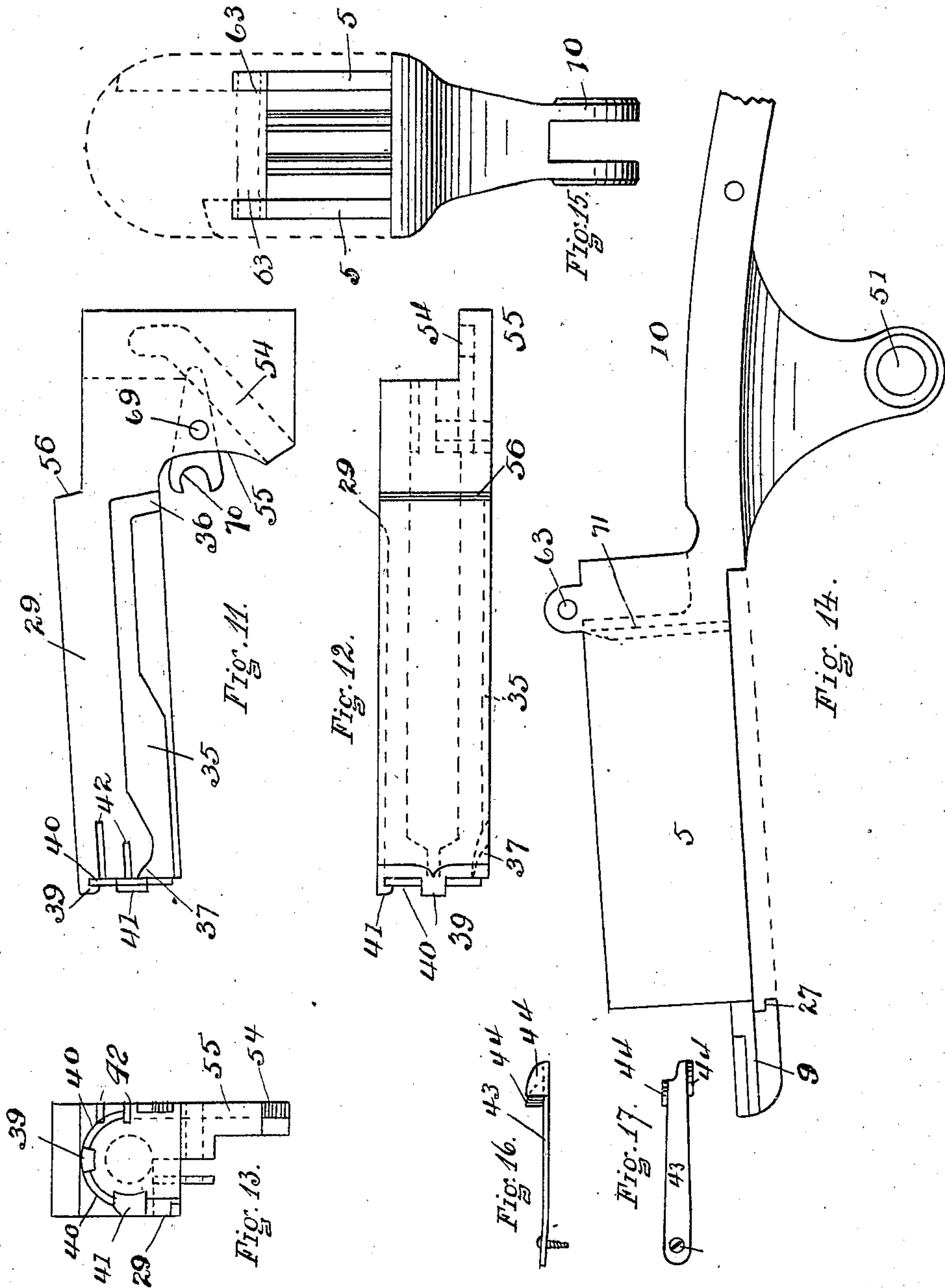
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5 SHEETS—SHEET 4.



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MAGAZINE-FIREARM.

No. 833,898.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed June 24, 1903. Serial No. 162,857.

To all whom it may concern:

Be it known that I, EDWIN H. RISLEY, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Magazine-Firearms, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to an improvement in magazine-firearms.

The main object of the invention is the provision of means for supporting and guiding the cartridge-carrier to maintain a practically horizontal position thereof during operation.

A further object is the construction of the gun-frame in two sections to provide a receiver, the sections being formed and arranged to be readily connected and disconnected.

A further object is the provision of means for positively operating the carrier in the reciprocation of the breech-bolt, the connection between the breech-bolt and carrier being such as to permit independent movement of the carrier when the action is open, whereby the magazine may be loaded.

Other objects will be apparent from the following detailed description, read in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of my improved firearm, parts being broken away. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical section on the line C D, Fig. 5. Fig. 4 is a cross-section on line E F, Fig. 5. Fig. 5 is an enlarged longitudinal vertical section of the gun, parts being broken away and the action shown closed. Fig. 6 is a detail perspective of the cartridge-carrier, the operating-lever being shown in dotted lines. Fig. 7 is a horizontal section on line A B of Fig. 5. Fig. 8 is a longitudinal vertical section of the gun, the action being shown open and a cartridge in position to be forced forward into the firing-chamber. Fig. 9 is a cross-section on line G H of Fig. 8. Fig. 10 is a cross-section on line I K of Fig. 8. Fig. 11 is a side elevation of the breech-bolt. Fig. 12 is a plan of the same. Fig. 13 is a front end elevation of the breech-bolt. Fig. 14 is a side elevation of the lower section of the frame. Fig. 15 is a front end elevation of the same.

Fig. 16 is a plan view of the ejector-hook. Fig. 17 is a side view of the same. Fig. 18 is a horizontal longitudinal section of the gun, parts being shown in plan, illustrating particularly the operation of the ejector-hook. Fig. 19 is a side elevation of the upper section of the frame. Fig. 20 is a cross-section of the same on line L M, Fig. 19. Fig. 21 is a cross-section taken on the line N O, Fig. 1.

Referring to the accompanying drawings, particularly Figs. 3 and 4, it will be noted that the gun-frame is made in two sections, the upper section 1 having vertical walls 2 to inclose the cartridge-receiver 3. The walls of the upper section are recessed, as at 4, to receive the walls of the lower section 5, the recess 4 being of a size to wholly receive the walls of the lower section to present a smooth unbroken surface interiorly of the receiver. To the forward wall of the upper section is secured by any usual or preferred means the barrel 6 and magazine 7, the latter being preferably provided with the usual operating-spring (not shown) to force the cartridges from the magazine into the receiver. The front wall of the upper section is formed in its lower edge with a dovetailed recess 8, and the lower section is provided with a forward projection 9, dovetailed in sectional view to fit within the recess 8, whereby the forward ends of the sections are secured together. Each of the sections is provided with a rearwardly-projecting tang 10, arranged to snugly embrace the gun-stock 11 and be secured thereto and to each other by a screw 12. This construction provides for the convenient and ready assembling or separation of the sections of the frame when desired, it being understood that removal of screw 12 is all that is necessary to permit separation of the sections.

For elevating the cartridges within the receiver from the plane of the magazine to the plane of the barrel I provide a carrier 13, (illustrated particularly in Fig. 6,) having a concave upper face 14 and an inclined rear end 15. The carrier fits loosely within the receiver and is mounted for vertical movement. For maintaining a substantially horizontal position of the carrier during its vertical movements I support the carrier on cross-levers 16, preferably arranged in pairs and centrally pivoted together at 17. The rear ends 18 of one pair of levers are pivotally

connected to lugs 19 on the carrier, while the rear ends 20 of the other pair of levers are pivotally connected to lugs 21 on the floor or bottom of the receiver.

5 The forward ends of both pairs of levers are without connection to either the floor of the receiver or to the carrier, whereby the said forward ends support and guide the carrier in exact accord with the pivoted rear
10 ends of the levers and whereby said carrier will maintain a practically horizontal position during its vertical movements. Intermediate the floor of the receiver and carrier I arrange an operating-spring 22, secured at
15 one end between lugs 23, formed on the bottom of the carrier, and at the opposite end between lugs 24, formed on the upper surface of the receiver-bottom.

To permit access to the carrier and operating parts, I form the receiver-bottom 25 as a removable section having a projecting lip 26 at its forward end designed to enter a recess 27, formed in the lower part of the dovetailed projection 9 of the lower frame-section
25 5, while its rear end is secured to said section by a screw 28, all as clearly seen in Figs. 5 and 8.

29 represents the breech-bolt, being preferably square in cross-section and being reciprocated across the upper end of the receiver by mechanism to be described. The reciprocation of the breech-bolt is adapted to elevate and depress the carrier, and to this end I connect the carrier and breech-bolt
30 with a lever 30, pivoted near its rear end at 31 to the frame and slidably connected to the carrier and to the breech-bolt. The forward end of the lever has a laterally-projecting stud 32, adapted to enter a groove 33, formed
40 in one side of the carrier, while the rear end of the lever is provided with a laterally-extending stud 34, normally seated within a groove 35, formed in one side of the breech-bolt. If so desired, an antifriction-roll can
45 be mounted on the stud 34. The rear end of the groove 35 is turned downwardly at 36 to permit of the vertical movement of the rear end of the breech-bolt in engaging and disengaging the recoil-shoulders, while the front
50 end of the groove is cut away or flared at 37 to permit the disengagement of the roll 34 and the groove when manually depressing the loading-floor, as hereinafter noted.

A longitudinally-arranged rib or projection 38 is formed on or connected to one wall of the upper frame-section 1, projecting within the receiver. This rib acts as a stop to limit the upward movement of the carrier and also as a guide and support for the breech-bolt in
60 operation.

An extractor-hook 39, open at the under side, projects from the forward face of the breech-bolt, which face is also provided with guides 40 for catching and guiding the head
65 of the shell in fixed engagement with the ex-

tractor-hook. If desired, the lower right-hand portion of the guide 40 may be provided with a hook portion 41, whereby to serve as an additional extractor-hook, though the opposite end of the guide 40
70 should be without the hook to permit the ejection of the shell. The extractor-hook may or may not be an integral part of the bolt and if detachable may be of spring metal or stiff, as desired.

In the operation of closing the action, wherein the carrier has been elevated against the stop 38 with a cartridge supported thereon, it will be noted that the breech-bolt approaches the butt of the cartridge at an angle. As the bolt advances it becomes more
80 nearly horizontal—that is, in alinement with the cartridge—which operation tends to seat the extractor-hooks in the rim of the butt of the cartridge, so that when the action has
85 been finally closed the extractor-hooks are firmly seated in the cartridge-groove, holding the cartridge snugly to the face of the bolt. It will hence be observed that the rear end of the bolt is gradually elevated during the forward
90 movement of the bolt, so that the extractor-hook moves down onto the head of the cartridge into locking engagement therewith coincident with the swinging of the breech-bolt into closed position.

For ejecting the cartridge I form grooves 42 in one side of the breech-bolt and arrange for coöperation therewith an ejector consisting of the spring-plate 43, secured at its forward end and at its inwardly-springing free
100 rear end provided with two stop or hook portions 44, projecting inwardly from the upper and lower edges of the plate, so that said stops 44 are spaced apart, one being usually arranged slightly in advance of the other.
105 The ejector is seated in a recess 45 in one wall of the upper section 1 of the frame, so that in the withdrawal of the breech-bolt the hooks 44 will ride into the grooves 42 in said bolt and contact with the butt of the cartridge,
110 serving to stop its rearward movement and through the hold of extractor-hooks 39 and 41 eject the cartridge through the breech-opening 46, formed in the upper section 1 of the frame. The rear edges of the hooks 44
115 are curved to permit of said hooks riding out of the grooves 42 in the forward movement of the breech-bolt. The object of providing the extra or upper stop or hook portion 44 is to prevent the lower hook portion 44 from
120 entering the cam slot or groove 35 during the movement of the breech-bolt by the engagement of said upper hook portion with the non-slotted portion of the breech-bolt, thereby pressing the spring 43 outwardly, so that
125 the lower hook portion 44 cannot drop into the cam-groove 35 should the movement of the breech-bolt bring said cam-groove opposite said lower catch portion.

47 represents the magazine-stop, compris- 130

ing the spring held in the frame adjacent the mouth of the magazine, the vertical end 48 normally lying across a portion of the mouth of the magazine and preventing the ejection of the cartridges therefrom. The spring has a rearwardly-projecting heel 49, arranged to be contacted with by the carrier in its descent, whereby to remove the stop 48 from the mouth of the magazine and permit a cartridge to be brought onto the carrier.

The breech-bolt-reciprocating mechanism comprises a lever 50, pivoted at 51 to a depending portion of the lower frame-section 5. An arm 52 is pivoted to the lever 50, the upper end of the arm projecting within the frame and carrying a laterally-projecting stud 53, arranged to work in a cam-groove 54 on the wing 55 of the breech-bolt. Through a swinging movement of the lever 50 the breech-bolt is reciprocated, and by a particular formation of the groove 54 the recoil-shoulders 56, provided, respectively, on the breech-bolt and on the frame in rear of the breech-opening 46, are engaged and disengaged, as will be evident. An antifriction-roll 57 supports the front end of arm 52 when the action is closed, operating to hold the recoil-shoulders 56 in engagement.

The firing-pin 58 operates longitudinally and centrally of the breech-bolt through the medium of the coil-spring 59. The rear end of the firing-pin has a downwardly-extending ear 60, arranged to engage a shoulder 61 on a sear 62, pivoted in the frame at 63. The rear end of the sear is slidably connected to a lever 64 by a pin 65, working in a slot 66, formed in the lever, the opposite end of which lever forms the trigger 67, pivoted at 68.

At the rear of the receiver I provide a partition 71, preferably corrugated and an integral part of the lower section 5 of the frame, serving as a rearward limit for the cartridges when forced from the magazine onto the carrier.

It will be noted that the carrier is operated solely by and during the reciprocation of the breech-bolt and that said carrier is maintained practically horizontal during said movement by the levers 16. The upward movement of the carrier is limited by the stop 38, which stop serves as a support for the forward end of the breech-bolt in reciprocation. When the action is open, the carrier may be manually depressed to load the magazine, the rear end of the operating-lever 30 riding out of the cam-groove in the breech-bolt, as will be evident. By this construction the cartridges may be readily inserted in the magazine through the breech-opening, and this I consider a very material feature of the construction. It will also be noted that the entire frame is held in place by a single screw, by the removal of which the sections may be readily separated to permit access to the operating mechanism. The inclined rear

wall 15 of the carrier provides for the forward movement of the breech-bolt over said inclined way in the event that the carrier should be elevated into the path of the breech-bolt.

Changes and modifications of the above construction will be readily apparent to one skilled in the art, and I consider all such changes falling within the terms of the claims hereinafter enumerated and within the scope of my invention.

What I claim is—

1. In a firearm, a frame constructed to provide a receiver, a carrier vertically movable therein, means for maintaining a substantially horizontal position of the carrier during operation, a reciprocating breech-bolt mounted within the frame and formed with a cam-groove, and a lever pivoted to the frame and connected at one end to the carrier, the opposite end of the lever fitting within said cam-groove.

2. In a firearm, a frame constructed to provide a receiver, a carrier vertically movable therein, means for maintaining a substantially horizontal position of the carrier during operation, a reciprocating breech-bolt mounted within the frame and formed with a cam-groove, and a lever pivoted to the frame and connected at one end to the carrier, the opposite end of the lever fitting within said groove, the forward end of said groove being open to permit disengagement of the lever when the breech-bolt is in retracted position.

3. In a firearm, a reciprocating breech-bolt formed with a longitudinal cam-groove, a vertically-movable carrier formed with a slot in one edge, cross-levers pivoted at their intersections and at their respective ends to the carrier and to the frame, and a lever pivoted to the frame and provided at one end with a stud to engage the cam-slot in the breech-bolt and at the opposite end with a stud to engage the slot in the carrier.

4. In a firearm of a breech-loading reciprocating-bolt type the combination of a carrier within the receiver of the gun-frame, a pair of supports centrally pivoted together and pivotally connected at their respective ends to the carrier and to the frame for guiding and supporting the carrier substantially horizontal during operation, and mechanism for connecting the carrier to the breech-bolt for positively elevating and lowering the carrier.

5. A magazine-firearm provided with a cartridge-receiver, a carrier mounted for vertical movement within the receiver, cross-levers pivotally connected at their intersections and interposed between the carrier and the bottom of the receiver, said levers being connected to the carrier to be opened and closed in the operation of the carrier, a breech-bolt mounted within the frame, and

mechanism connected to the bolt and to the carrier for elevating or depressing the carrier in the operation of the bolt.

6. In a firearm, a frame made in two longitudinal sections one section comprising the upper tang, the other section comprising the lower tang, the walls of one section being recessed at their inner faces to wholly receive the walls of the other section, and means for securing the sections together.

7. In a firearm, in combination, a barrel, a frame forming the receiver and comprising two longitudinal separable sections, the upper section comprising the upper tang and a front wall receiving the barrel, the lower section at its front end removably fitted to said front wall and comprising the lower tang and a vertical partition forming the rear wall of the receiver, one section recessed to longitudinally receive the other section, a stock between said tangs, and securing means removably securing said tangs and the stock together, and thereby securing said sections.

8. In a firearm, a frame receiving the stock and forming the receiver and comprising two longitudinal separable sections, the upper section forming the top and exterior side walls of the receiver and having a front wall receiving the barrel and forming the front wall of the receiver, said side walls being longitudinally recessed, the lower section forming the floor of the receiver and having its side walls received in said recesses of the section, said lower section having a vertical partition forming the rear wall of the receiver, the forward end of said lower section fitting in the front wall of the upper section, the stock fitted between said sections, and means securing the sections and the stock together, substantially as described.

9. In a firearm, a frame receiving the barrel and stock and forming the receiver and comprising longitudinal separable sections, one section comprising the upper tang and the other section the lower tang, one section having a front wall forming the front wall of the receiver and having a dovetailed recess across its lower end, the other section forming the floor of the receiver and having its side walls inclosed within the first-named section and having a forward dovetailed projection crossing the lower end of said wall and fitted in said recess, and means securing said sections, substantially as described.

10. In a firearm of a breech-loading and bolt-reciprocating type, in combination, a frame having a recess adjacent the travel of the breech-bolt, a spring member provided with an ejector-hook at its free end and with an additional hook in different horizontal and vertical planes from the ejector-hook, and a breech-bolt provided with slots at its ends to receive said hooks, for the purpose substantially as described.

11. In a firearm, a frame receiving the

barrel and the stock and forming the receiver, said frame formed in two longitudinal separable sections, the upper section comprising the upper tang and forming the upper portion and exterior side walls and front wall of the receiver, the lower section at its front end detachably fitting the front portion of the upper section and locked thereto and having side walls inclosed within the side walls of the upper section and having a wall forming the floor of the receiver, said floor being removable and carrying the cartridge-carrier in the receiver, means securing the rear portions of said sections, and a reciprocating breech-bolt and its operating mechanism carried by said lower section, combined, substantially as described.

12. In a firearm, a frame receiving the stock, barrel and magazine-tube, and forming the receiver, said frame formed of an upper and a lower longitudinal section, each provided with a tang, said sections removably interlocking at their front portions, means securing their rear portions, the lower section having an opening at the bottom of the receiver, a removable plate closing said opening and forming the floor of the receiver and provided with securing means, and a vertically-movable cartridge-carrier arranged in the receiver, said cartridge-carrier being secured to, carried by and removable with said plate, combined, substantially as described.

13. In combination, in a firearm, a frame forming a receiver, a reciprocating breech-bolt movable through the receiver, breech-bolt-operating means, a carrier vertically movable within the receiver, cross-levers pivotally connected at their intersection, the rear ends of said levers being pivotally joined to the rear portions of the carrier and the receiver-floor, respectively, the front portions of said levers being in sliding engagement with the carrier and floor respectively, means for depressing the carrier, and a carrier-elevating spring interposed between the floor of the receiver and the carrier substantially as described.

14. In combination, in a firearm, a frame forming a receiver, a reciprocating breech-bolt, operating mechanism therefor, a vertically-movable carrier within the receiver, a carrier-elevating spring compressed between the floor of the receiver and the bottom of the carrier, crossed levers pivotally joined at their intersections, corresponding ends of said levers being pivoted to the carrier and to the floor of the receiver, respectively, the opposite ends of said levers having sliding engagement with the carrier and receiver-floor, respectively, and carrier-depressing means arranged entirely within the receiver and having operative connection with said bolt.

15. In combination, in a firearm, a frame forming a receiver, a reciprocating breech-bolt, operating mechanism therefor, a verti-

cally-movable carrier within the receiver, a carrier-elevating spring compressed between the floor of the receiver and the bottom of the carrier, crossed levers pivotally joined at their intersections, corresponding ends of said levers being pivoted to the carrier and to the floor of the receiver, respectively, the opposite ends of said levers having sliding engagement with the carrier and receiver-floor, respectively, and carrier-depressing means.

16. In combination, in a firearm, a frame-receiving barrel and stock, and forming the receiver, said frame having an opening at the bottom of the receiver, a removable plate normally closing said opening and forming the floor of the receiver, means for securing said plate, a carrier vertically movable in the receiver, carrier-controlling means confined thereto and to said plate, said carrier and said means being removable from the receiver with said plate, carrier-operating means for actuating the carrier on the movement of the breech-bolt, said means having detachable connection with the carrier, and a breech-bolt and its operating mechanism.

17. In combination, in a firearm, a frame forming a receiver, a reciprocating breech-bolt, operating mechanism therefor, a vertically-movable carrier within the receiver, crossed levers pivotally joined at their intersections, corresponding ends of said levers being pivoted to the carrier and to the floor of the receiver, respectively, the opposite ends of said levers having sliding engagement with the carrier and receiver-floor, respectively, and carrier-depressing means actuating the carrier on the reciprocation of the breech-bolt and having operating connection therewith independently of said levers.

18. In combination, in a firearm, a frame forming a receiver, a vertically-movable carrier therein, a reciprocating breech-bolt and its operating mechanism, a carrier-operating lever arranged entirely within the receiver and having direct operative detachable engagement with both the carrier and the bolt, substantially as described.

19. In a firearm, in combination, a frame forming a receiver, a yieldingly-upheld vertically-movable carrier therein, a reciprocating breech-bolt and its operating mechanism, and a carrier-depressing lever arranged entirely within said receiver and engaging the carrier and the bolt and operated by the movement of the breech-bolt, said lever moving from operative engagement with the bolt

when the carrier is manually depressed independently of the breech-bolt while the breech-bolt is in withdrawn position.

20. In a firearm, in combination, a frame forming a receiver, a vertically-movable carrier therein, a spring device yieldingly upholding the same, a reciprocating breech-bolt and its actuating mechanism, and a carrier-depressing lever device directly engaging the carrier and engaged by portions of the breech-bolt during the movement thereof to depress the carrier, said device moving free of the breech-bolt when the same is in withdrawn position and when the carrier is manually depressed independently of said bolt.

21. In a firearm, in combination, a frame forming a receiver, a vertically-movable carrier therein, a reciprocating breech-bolt and its operating mechanism, and a carrier-depressing lever arranged entirely within the receiver and operatively engaging said carrier and having operative detachable engagement with said bolt, said lever being operatively disengaged from said bolt by the manual depression of the carrier when the bolt is in its withdrawn position.

22. In a firearm, in combination, a frame forming a cartridge-receiver, a vertically-movable carrier within the receiver, mechanism movable with the carrier for maintaining the same in a substantially horizontal position, a breech-bolt and its operating mechanism, and means normally operatively connecting the breech-bolt and carrier, independently of said mechanism, to operate the carrier by the movement of the bolt, said means being free to operatively and automatically disconnect the bolt and carrier, when the bolt is withdrawn, and the carrier is independently and manually depressed.

23. In a firearm, in combination, a frame forming a receiver, a vertically-movable carrier therein, a reciprocating breech-bolt having a longitudinal cam-groove with a transversely-deflected portion, and a carrier-operating lever actuated by said bolt and having a stud riding in said groove, and entering said deflected portion of the groove for locking the carrier in its depressed position to receive a cartridge, when the breech-bolt is in closed position.

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

EDWIN H. RISLEY.

Witnesses:

JOSEPH D. MONROE,
E. T. DE GIORGI.