

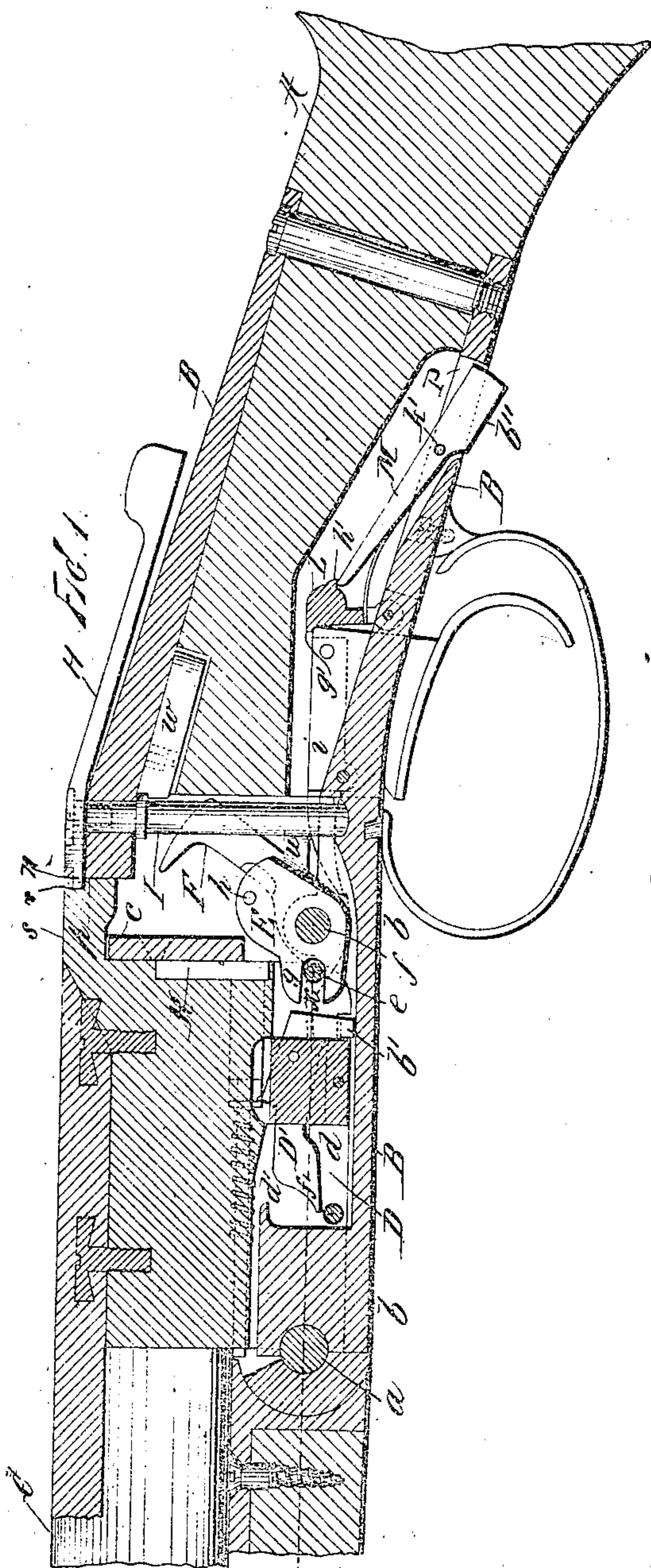
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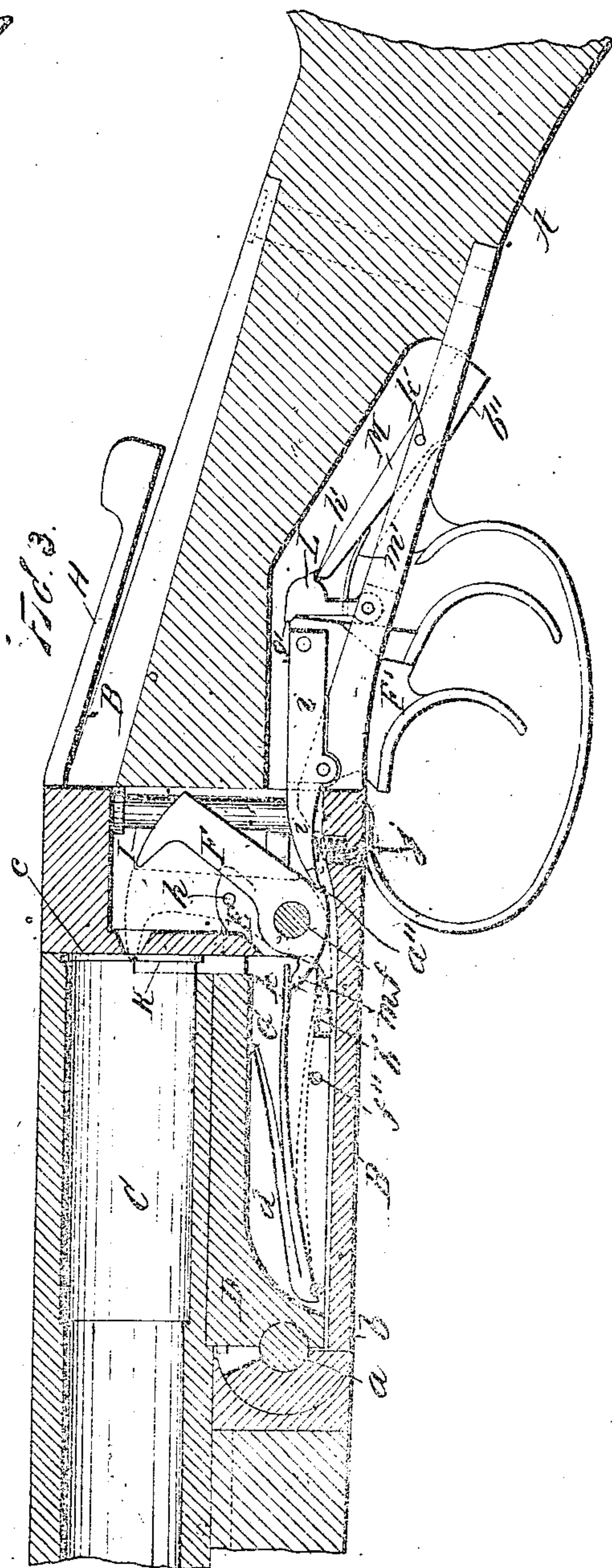
A. J. STRONG.  
FIREARM.

No. 517,989.

Patented Apr. 10, 1894.



Witnesses:  
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George F. Trefer



Inventor:  
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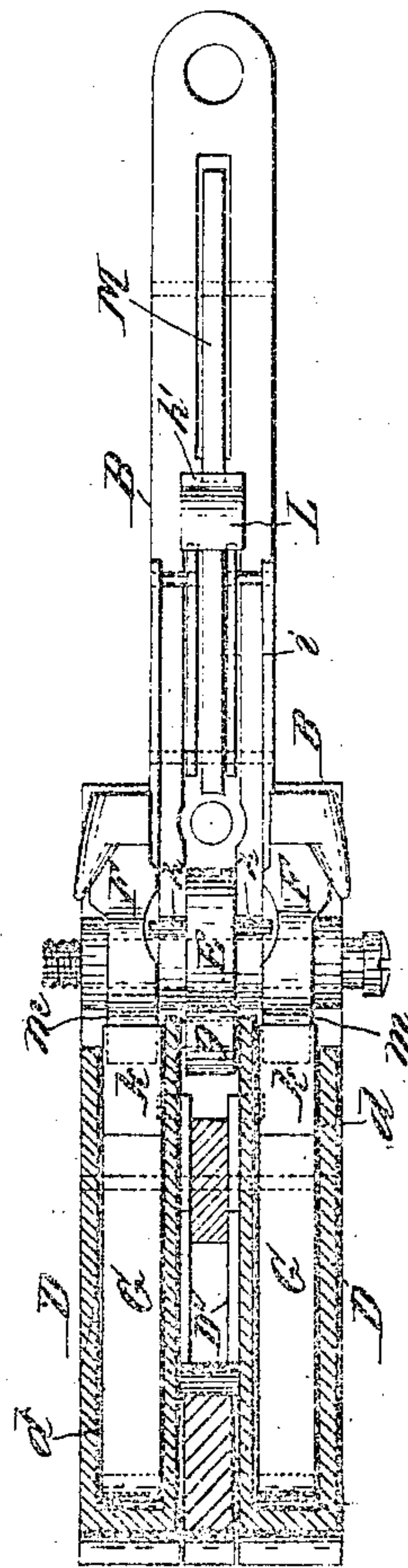
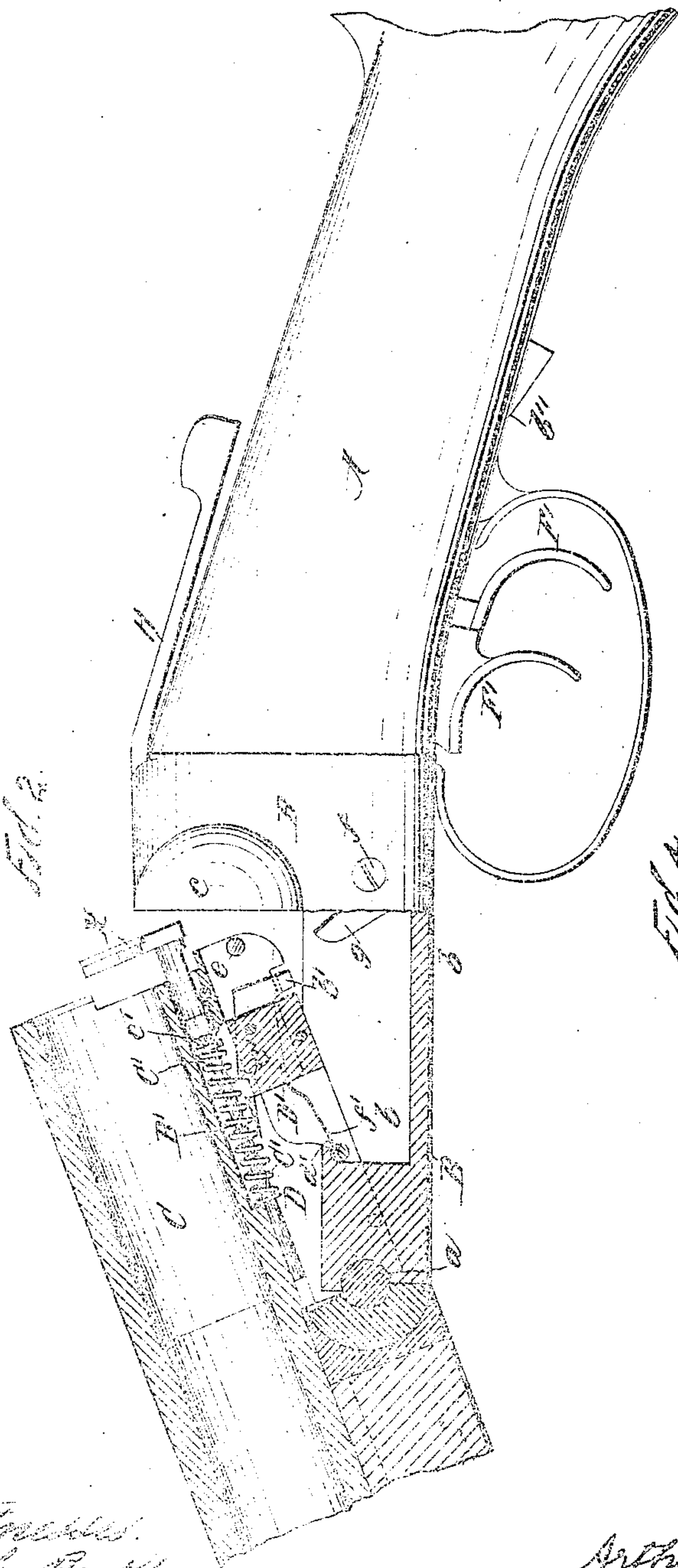
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A. J. STRONG.  
FIREARM.

No. 517,989.

Patented Apr. 10, 1894.



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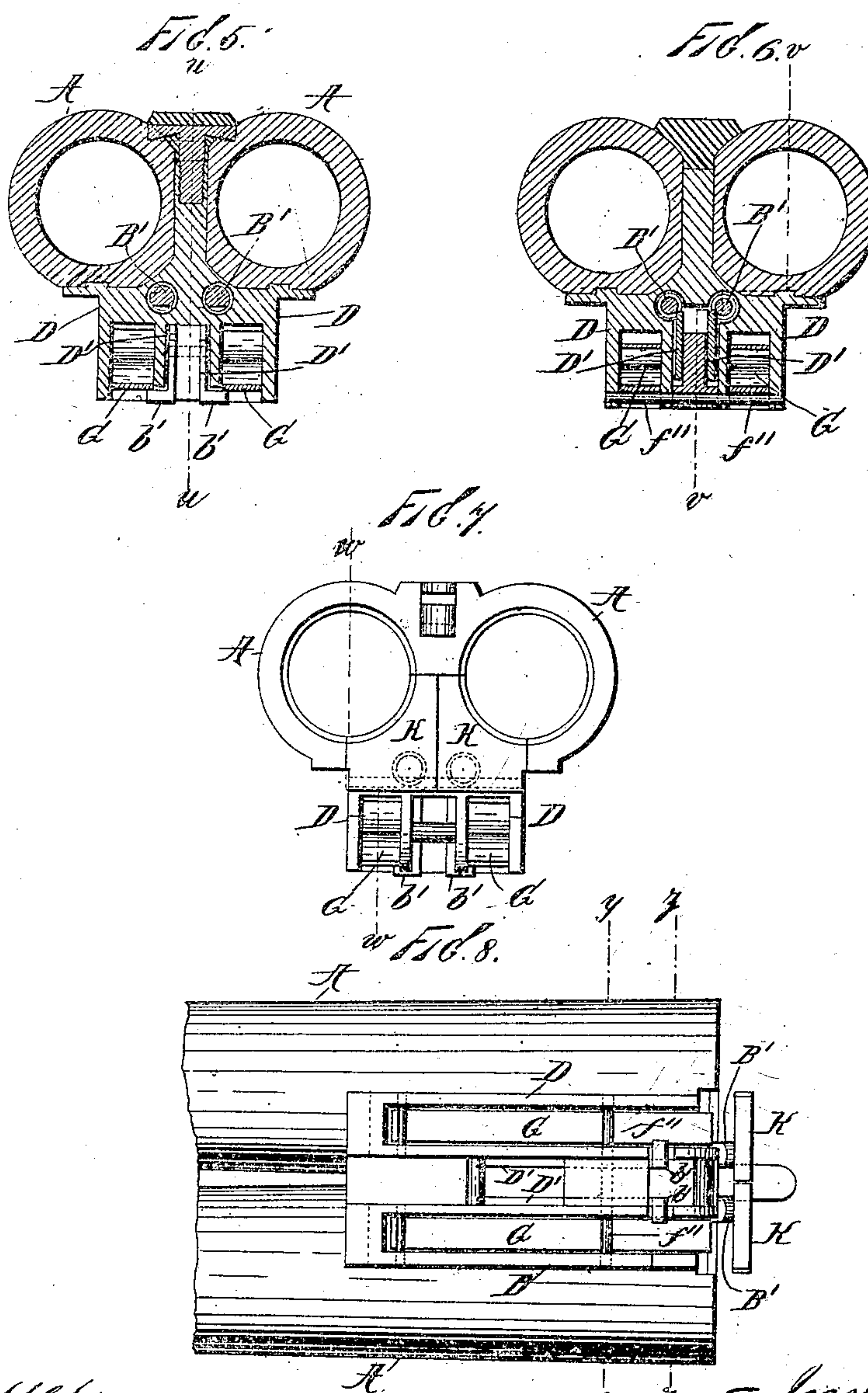
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3 Sheets—Sheet 3.

A. J. STRONG.  
FIREARM.

No. 517,989.

Patented Apr. 10, 1894.



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# UNITED STATES PATENT OFFICE.

ARTHUR J. STRONG, OF BROOKLYN, NEW YORK.

## FIREARM.

SPECIFICATION forming part of Letters Patent No. 517,989, dated April 10, 1894.

Application filed March 25, 1893. Serial No. 467,665. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR J. STRONG, of Brooklyn, in the county of Kings 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 of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a longitudinal sectional view taken in the line *u, u*, of Fig. 5. Fig. 2 is a like view taken in the line *v, v*, of Fig. 6. Fig. 3 is a like view taken in the line *w, w*, of Fig. 7, and showing the parts in a position different from that shown in Figs. 1 and 2. Fig. 4 is a longitudinal sectional view taken in the line *x, x*, of Fig. 1, and in a plane at right angles to those of Figs. 1, 2, and 3. Fig. 5 is a transverse sectional view taken in the line *y, y*, of Fig. 8. Fig. 6 is a like view taken in the line *z, z*, of Fig. 8. Fig. 7 is a rear end view of the barrel portion of the firearm, and Fig. 8 an inverted plan view of the same, with the barrel lug.

This invention relates to that class of firearms in which the breech is opened by tilting the rear end of the barrel outward from the breech-receiver, and its object is to provide a firearm of this class which shall be simple in construction, capable of economical manufacture, strong and durable, and not liable to get out of order during the vicissitudes of use and operation.

The drawings represent the invention as embodied in a double-barreled shot gun, but it is, of course, equally applicable to rifles, &c., and as will be manifest from the description hereinafter presently given, certain of the combinations of parts included in said invention may be embodied in single barreled guns.

Figs. 1 and 2 show the arrangement of the parts as provided in connection with one of the barrels of a double barreled shot gun. It is of course to be understood that, unless hereinafter qualified, such arrangement of parts is duplicated within the same frame and stock with due relation to the other barrel. A description, therefore, of such arrangement concerning one barrel applies equally to that concerning the other.

A, is the stock, B, the frame, and, C, one of

the barrels. The barrels have pivotal connection with the frame in the usual or in any suitable manner as shown at, *a*. That part, *b*, of the frame behind the pivotal point, *a*, including the recoil block, *c*, constitutes the breech-receiver, the recoil block, *c*, closing the breech of the barrel when the latter is depressed to its place upon the part, *b*, of the frame.

Fast at the under side of the barrel is a barrel lug, D, which is chambered on its under side as shown at, *d*. At the rear end of this chamber, *d*, is a pin, *e*, the position of which is shown in Figs. 1 and 3.

E, is a rocking dog which is pivoted as shown at, *f*, and the lower forwardly projecting part of which is notched or forked as shown at, *g*. Said fork, *g*, is placed astride the pin, *e*, to engage therewith.

F is the hammer which is pivoted on the same pivot or shaft, *f*, as the rocking dog, E. Projecting laterally from the latter and in front of the hammer is a pin or stud, *h*. The sear, *i*, of the trigger, F', is arranged to catch upon the shoulder, *a''*, at the rearmost lower part of the hammer when the latter is cocked, the sear being pressed to its place by a spiral or other suitable spring, *j*, as shown in Fig. 2. In the chamber, *d*, of the barrel lug is placed the main-spring, G, the free end, *k*, of which rests upon the toe, *m*, of the hammer. The too great expansion of the main-spring when lifted by the outward or upward movement of the barrel is prevented by a cross-pin, *f''*, extended through the walls of the barrel-lug, as shown in one clearly in Fig. 6. When the breech is thrown open by elevating the rear end of the barrel, the pin, *e*, as it rises acts upon the rocking dog, E, to swing the latter backward, thereby causing the stud, *h*, to press against the front of the hammer and turn the same backward to full cock in which position, as just mentioned, it is caught and retained by the sear of the trigger until such time as a pull on the trigger releases it. When this cocking action has been secured the pin, *e*, may pass out of the fork, *g*, of the rocking dog. Inasmuch as the main-spring is carried upward with the barrel its pressure upon the toe, *m*, of the hammer is reduced or released while the latter is being cocked, thereby insuring an easy and practically un-



resisting movement of the hammer in coming to a cocked position as described. When the barrel is brought downward to close the breech the depression of the main-spring compresses it upon the toe of the hammer to afford the requisite force to the movement of the latter when tripped by a pull on the trigger. The downward movement of the barrel causes the pin, *e*, to re-enter the fork, *g*, and this of course in the descent of the barrel reverses the movement of the rocking dog, *E*, bringing it to its original position in front of, but out of the way of, the hammer during the forward or descending motion of the same. The barrel is locked in its depressed condition, with the breech closed by the recoil block, *c*, by means of the operating lever, *H*, at the outer and upper end of a rocking bolt, *I*. The forward end of this lever is shaped to form a catch, *n*, which, as shown in Fig. 1, engages in a notch *r*, in the rear of the shank, *s*, which extends back from the barrel. When the lever is moved sidewise as, for example, toward the right, the catch, *n*, is brought laterally out of the notch, *r*, thereby releasing the barrel and permitting the breech to be swung upward to open the same.

Upon the lower end of the rocking bolt, *I*, is a radial stud, *u*. A spring, *w*, attached to the adjacent surface of the frame or of the stock as the case may be, is so applied to the rocking bolt as to tend to normally turn the same to the position in which, when the breech is closed, it will engage with the notch, *r*. The lever being actuated to release the barrel, and the rear of the latter raised to open the breech as described, the backward movement of the rocking lug, *E*, brings it beside the stud, *u*, of the rocking bolt in such manner as to prevent the return of said stud, *u*, to its normal position, thereby keeping the catch, *n*, clear of the path of the shank, *s*, to permit the latter to resume its place when the breech is closed. The act of closing the breech throws the rocking dog, *E*, forward, bringing it away from its blocking position with regard to the stud, *u*, and permitting the spring, *w*, to turn the rocking bolt to bring the catch, *n*, into the notch, *r*, to lock the breech-end of the barrel down in its place.

*K* is an ejector the stem *B'* of which is capable of a longitudinal movement in a guide, provided in the barrel underneath and longitudinal with the same. Around this stem is the usual ejector spring, *C'*.

Pivoted at, *a'*, in the walls of the two chambers, *d*, (when as shown in the drawings the firearm is double-barreled, or in the walls of a single like chamber when the firearm is single barreled) is an ejector sear, *D'*, the rear end of which is provided with a laterally projecting stud, *b'*, which extends below the main-spring in such manner as, on occasion, to be acted upon thereby. This ejector sear, *D'*, has a shoulder, *c'*, and its nose or forward end, *f'*, projects relatively underneath a fixed stop, *d'*, at the front of the breech re-

ceiver. The ejector stem, *B'*, has a circumferential shoulder, *e'*. When the main-spring is fully expanded as when the barrel is depressed to close the breech, it acts upon the lateral stud, *b'*, to depress the rear end of the ejector sear and consequently lift the forward end thereof, thereby bringing its shoulder, *c'*, into such relation with the shoulder, *e'*, as to engage therewith when the ejector with its stem is forced forward to its place when the barrel is depressed to close the breech.

The ejector, *K*, is arranged in the usual or in any suitable manner in such relation with the recoil block, *c*, that the act of closing the breech by the depression of the rear end of the barrel forces forward the ejector to its place snug to the breech. This done the shoulder, *c'*, of the ejector sear, *D'*, catches against the shoulder, *e'*, of the ejector stem and so long as it remains holding against the said shoulder, *e'*, holds the stem and consequently the ejector against any backward or ejecting action. This continues until in the opening of the breech, the nose, *f'*, of the ejector sear, *D'*, comes in contact with the fixed shoulder, *d'*, whereupon the upward movement of the parts relatively depresses the forward end of the ejector sear, thus bringing the shoulder, *c'*, away from the shoulder, *e'*, and permitting the ejector spring to act to throw backward the ejector, *K*, to eject the cartridge shell from the breech.

*L* is a safety catch which has a hook or lip, *g'*, at the front of its free end arranged to normally catch over or upon the rear end of the trigger and, so long as it remains in this position prevents the operation of the trigger and consequently of the hammer, and at the back is provided with a shoulder, *h'*. A lever, *M*, the fulcrum of which is shown at *k'*, has its forward end arranged to engage with the shoulder, *h'*, while its rear end, *b''*, as shown in Fig. 2, projects downward through a suitable slot *P* provided in the under side of the grip of the stock, and in convenient proximity to the trigger, *F'*, and behind the same. A spring, *m'*, tends to keep the forward end of said lever engaged with the shoulder, *h'*. When the lever is in this position, holding forward the safety catch, *L*, the lip, *g'*, of the latter is crowded upon the trigger as described and thereby prevents the trigger from yielding to any pull upon it, and prevents the accidental discharge of the firearm. By forcing inward the rear end, *b''*, of the lever, *M*, which may be readily done in practice by the use of fingers not engaged in manipulating the trigger, its inner end is depressed and releases the safety catch, *L*, permitting its lip, *g'*, to slip from the trigger, and thereby disengage the latter to permit its action in tripping the hammer. Said lip is of course so shaped as to yield to the upward pressure of the sear when the safety catch is released from the retaining action of the lever, *M*, behind it.

As hereinbefore set forth the combinations



of parts may be used in single-barreled guns, and for double barreled guns require to be simply duplicated. It is to be noted, however, that the rocking dog, E, need not be duplicated in such case for the reason that by providing duplicate pins, *h*, one at each side thereof, it is enabled to act in due operative relation with the two duplicate hammers and their duplicated adjuncts in double-barreled guns.

In Figs. 5 to 8 inclusive, which more particularly show the invention embodied in a double-barreled firearm, the parts shown in duplicate are indicate by duplicate reference letters, thus, for example, each of the duplicate main-springs is indicated by the reference letter, G. It is further to be remarked that with the safety catch, L, and the lever, M, as with the rocking dog E, there is no need of duplication when applied in double barreled guns, inasmuch, as the safety-catch is, in such cases, made of such width as to catch upon the triggers of both barrels as indicated in Fig. 4.

What I claim as my invention is—

1. In a firearm of the class specified, the combination with a barrel, A, provided with and carrying a pin, *e*, a hammer and tripping sear, of the rocking dog, E, forked at its front end to straddle the pin, and having at its upper or rear part a pin or lateral projection, *h*, arranged to bear against the front of the hammer to cock the same from the outward movement of the barrel in opening the breech, substantially as and for the purpose herein set forth.

2. In a firearm of the class specified, the combination with a barrel, A, a hammer and tripping sear, of a barrel-lug secured to the barrel and having a chamber in its under side, and a main-spring, G, placed in said chamber arranged to release or slacken its pressure upon the toe of the hammer as the barrel is moved outward to open the breech and to resume its said pressure when the barrel is brought back to close the breech, substantially as and for the purpose herein set forth.

3. In a firearm of the class specified, the combination of a barrel provided with a pin, *e*, a hammer having a toe, *m*, a sear for tripping said hammer, a main-spring G, for actuating the hammer, a chambered barrel-lug, D, attached to and moving with the barrel and constructed to hold the main-spring, and a rocking dog, E, forked at one end to straddle the pin, *e*, and at the other constructed to bear against the front of the hammer, whereby the tendency of the main-spring is slackened to release its pressure simultaneous with

the opening of the breech and the cocking of the hammer, and to resume its pressure with regard to the hammer when the breech is closed, substantially as and for the purpose herein set forth.

4. In a firearm of the class specified the combination of a barrel, A, arranged to be tilted outward at its rear end to open the breech, a rocking bolt, I, provided with the stud, *n*, and with means for locking and releasing the barrel, in the closing and opening of the breech, a main-spring, G, and a pin, *e*, attached to and carried by said barrel, a hammer arranged to receive the pressure of said main-spring when the barrel is depressed to close the breech and to be relieved from such pressure as the barrel is tilted outward to open the breech, a tripping sear for tripping said hammer when raised, the rocking dog, E, arranged to intercept the stud, *n*, of the rocking bolt, I, when the breech is open, and constructed with the fork, *g*, to engage the said pin, *e*, and with the projection, *h*, extended in front of the hammer to lift the same, the whole arranged for joint use and operation, substantially as and for the purpose herein set forth.

5. In a firearm of the class specified, the combination with a barrel, A, a chambered barrel lug, D, attached to and carried by said barrel, and an ejector having a shoulder, *e'*, on its stem, of the ejector sear, D', provided with a lateral stud, *b'*, and with a shoulder, *c'*, and a main-spring, G, placed in the chamber of the barrel-lug and arranged to cause the shoulder, *c'*, to engage with the shoulder, *e'*, by pressure upon the said lug, when the barrel is depressed, substantially as and for the purpose herein set forth.

6. In a firearm of the class specified, the combination with a barrel, A, a recoil face, *c*, a chambered barrel-lug, D, attached to and carried by the barrel, an ejector having a shoulder, *e'*, upon its stem, and an ejector spring, C', of a main-spring, G, placed in the chamber of the barrel-lug, a stop, *d'*, provided at the front of breech receiver, and an ejector sear, D', having at its rear end a lateral stud, *b'*, to receive pressure from the main-spring and at its front constructed to impinge against the stop, *d'*, when the barrel is moved outward to open the breech, the whole arranged for joint use and operation substantially as and for the purpose herein set forth.

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