

(No Model.)

2 Sheets—Sheet 1.

T. R. R. ASHTON & E. J. KELLY.
MAGAZINE FIREARM.

No. 537,958.

Patented Apr. 23, 1895.

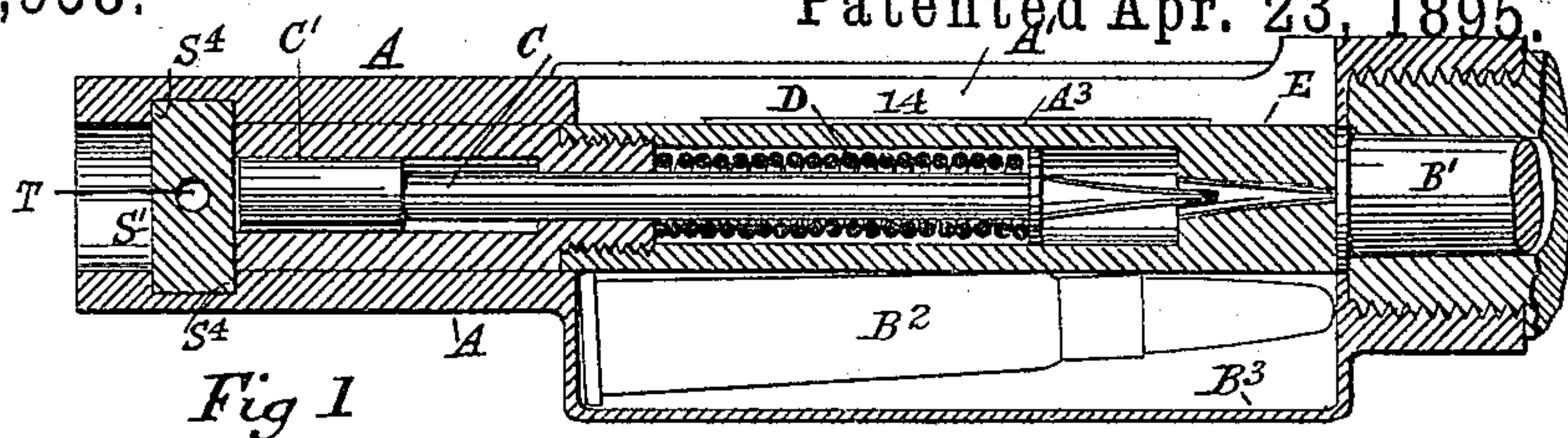


Fig 1

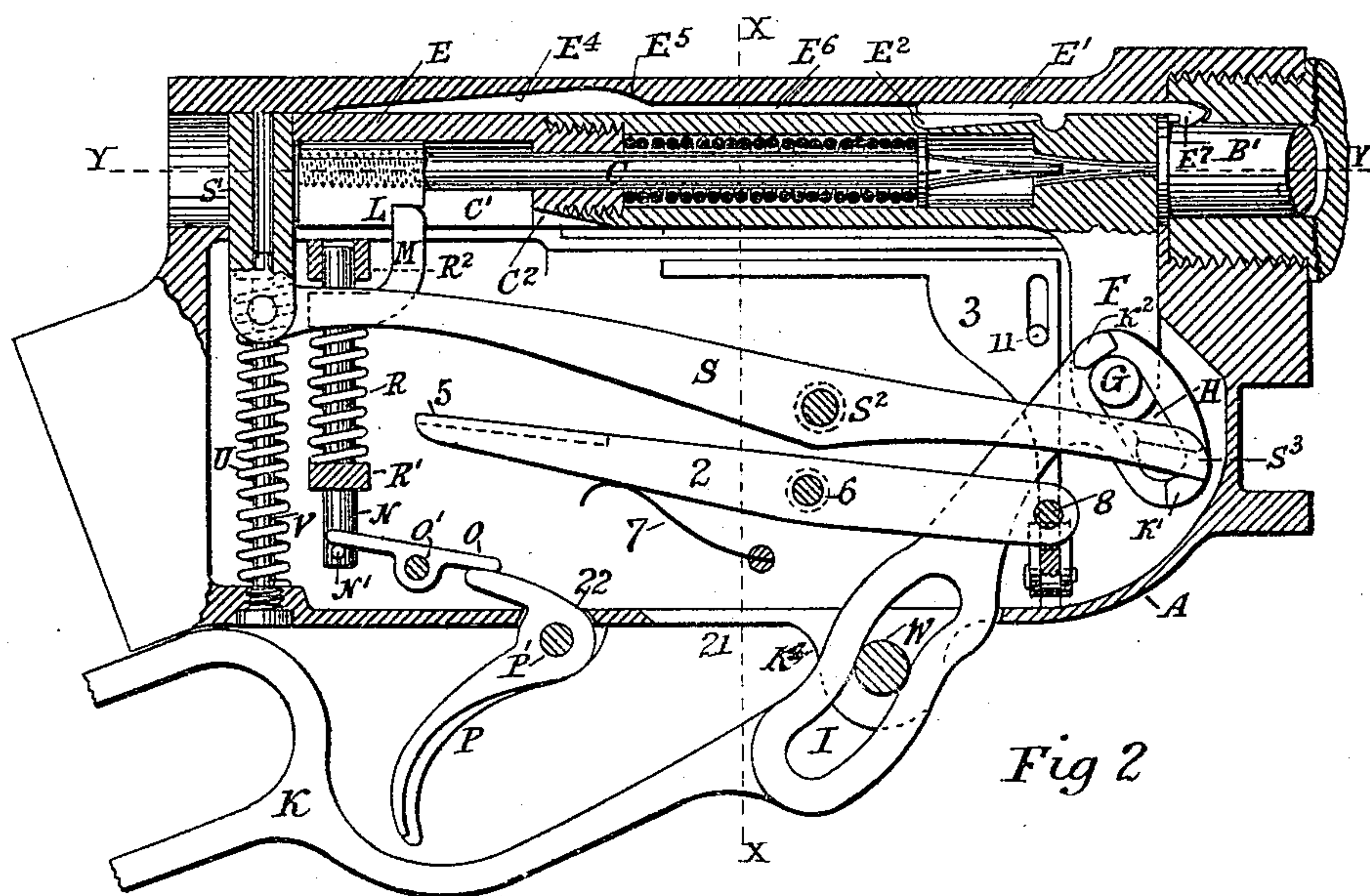


Fig 2

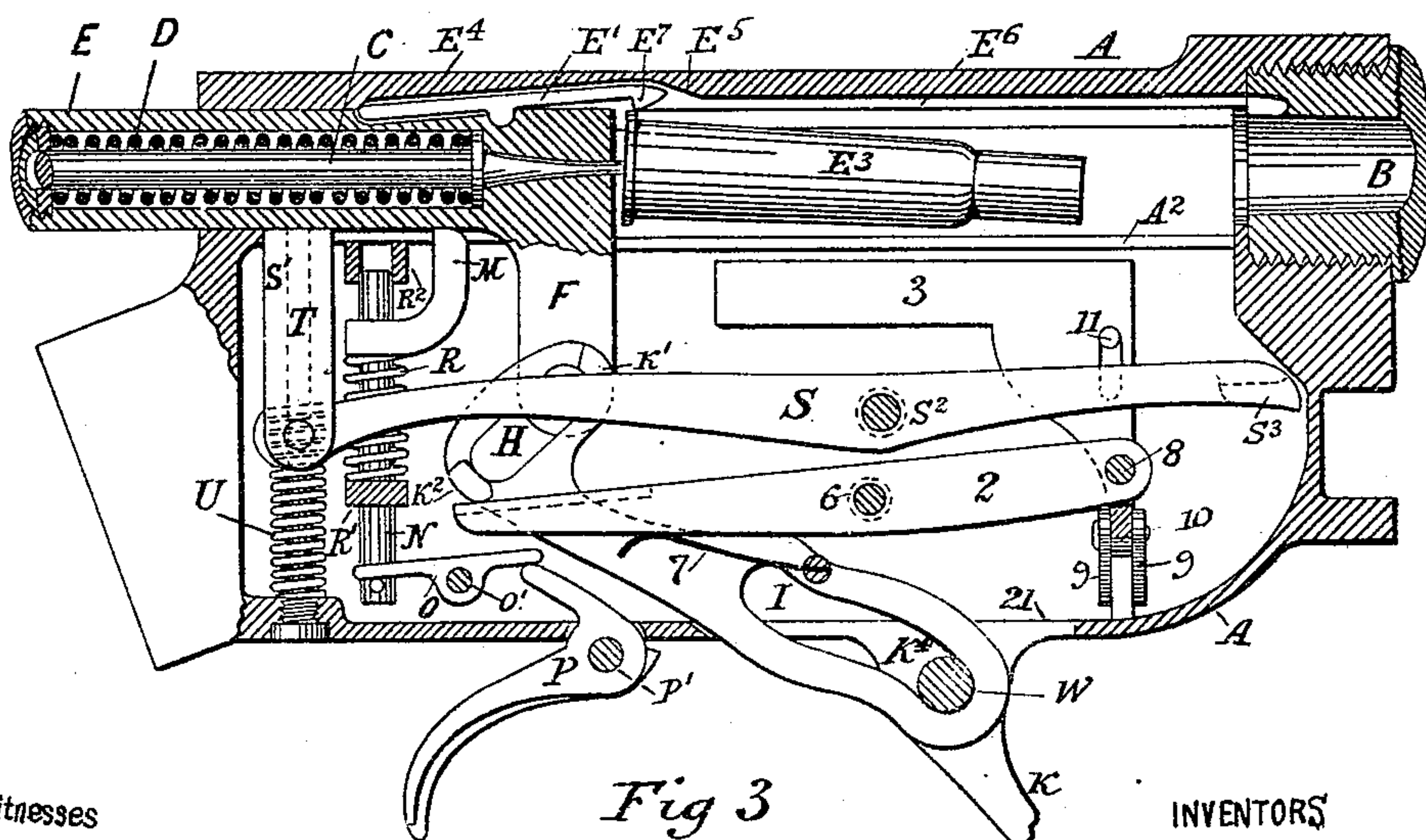


Fig 3

Witnesses

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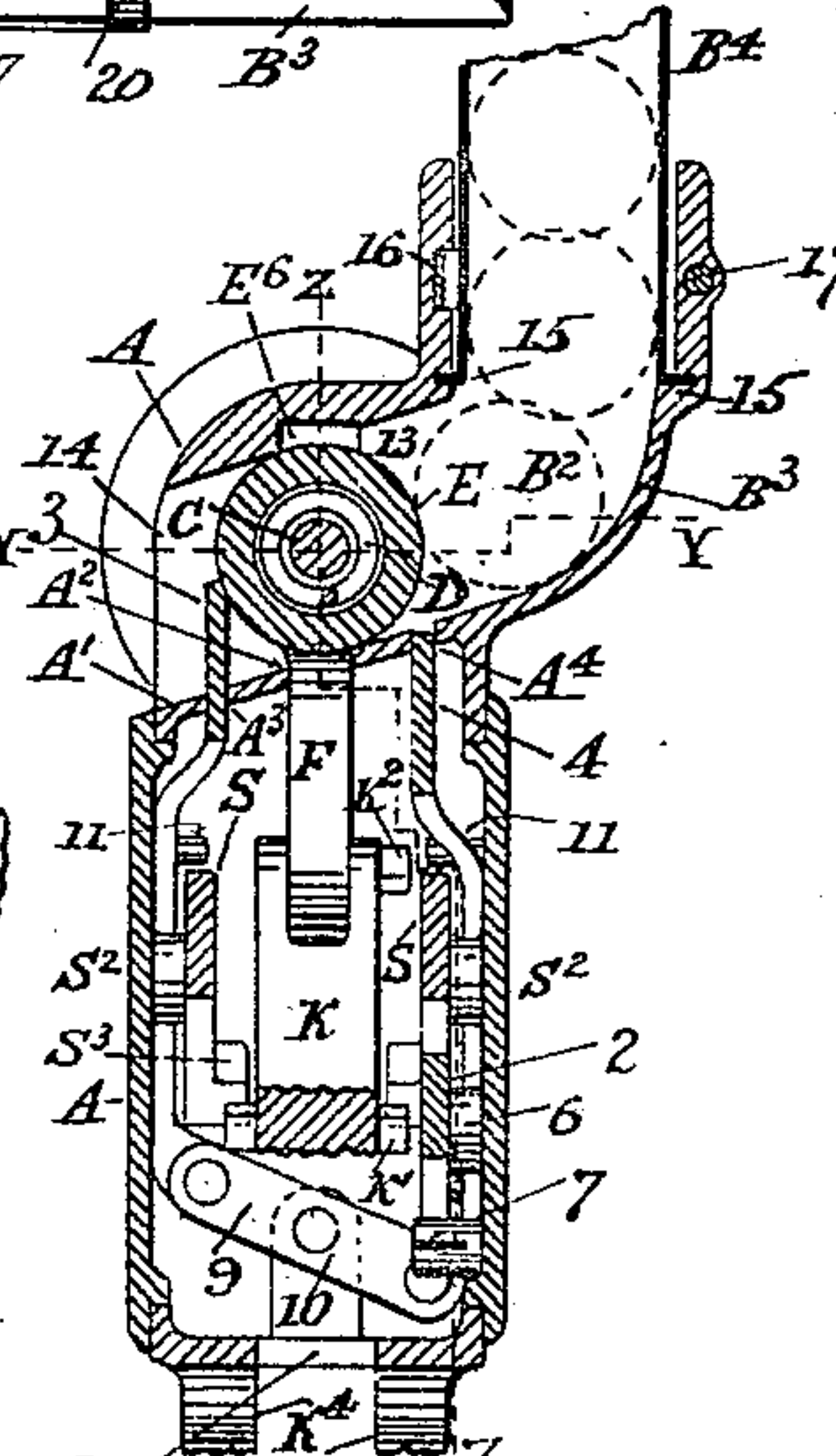
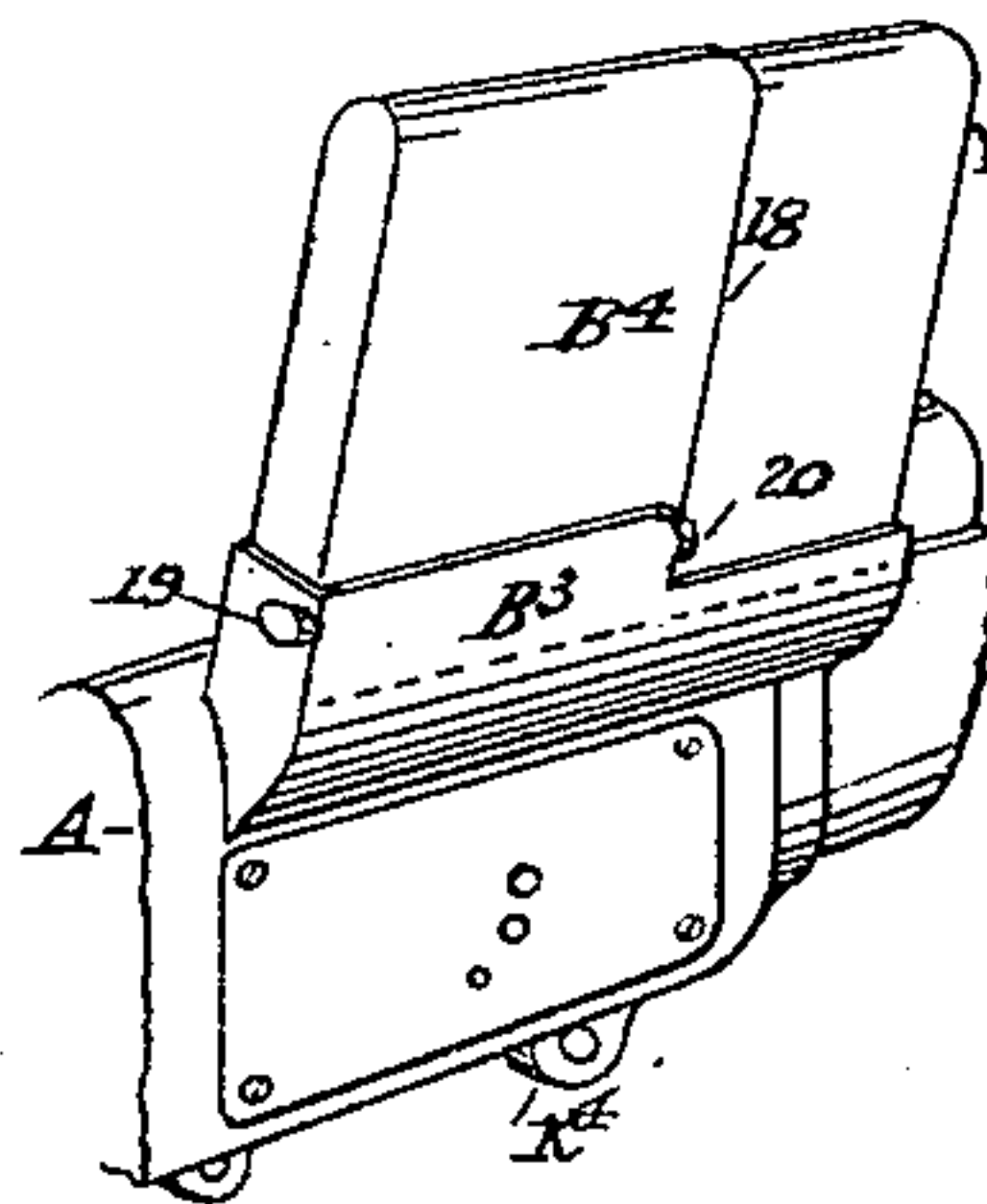
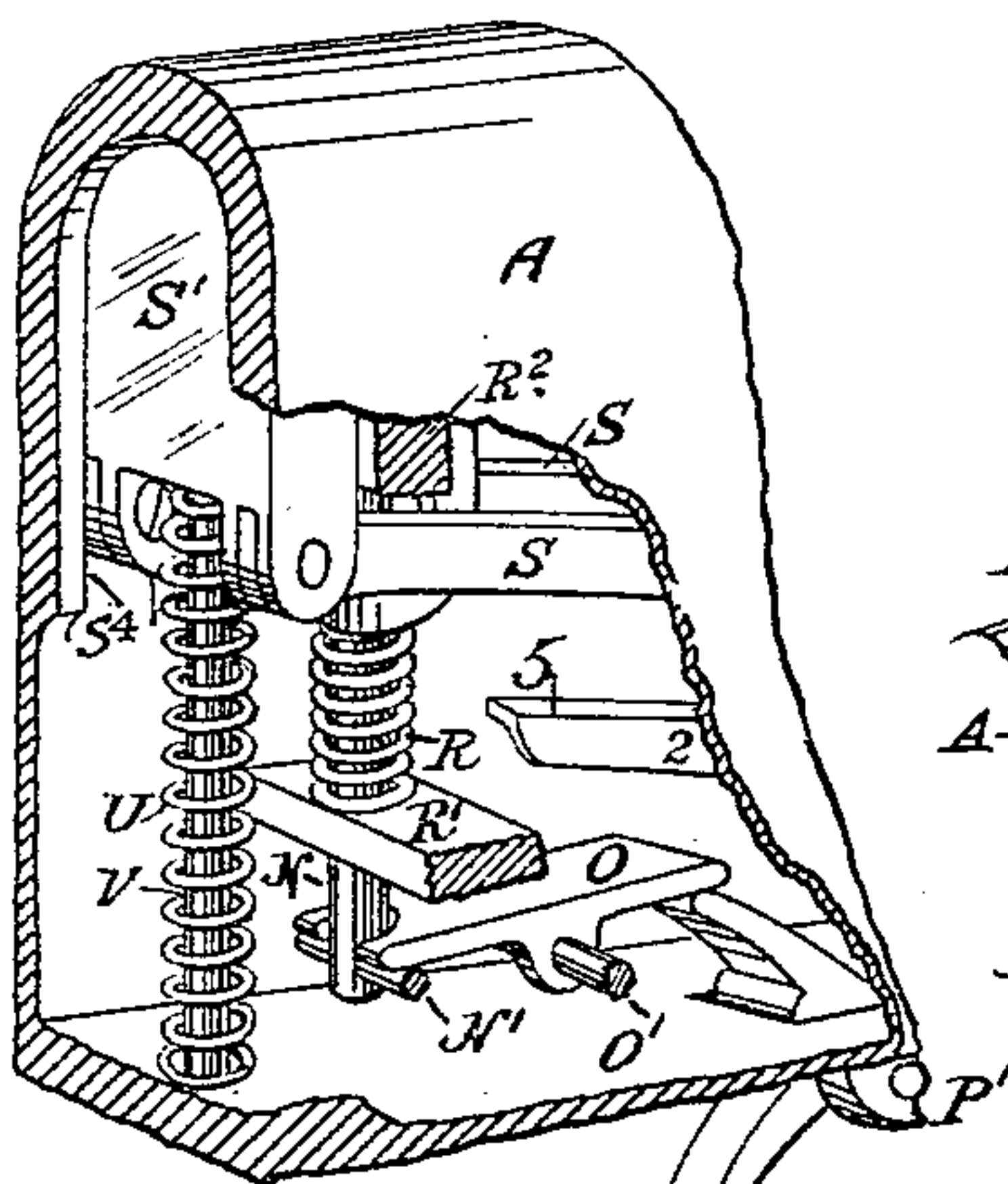
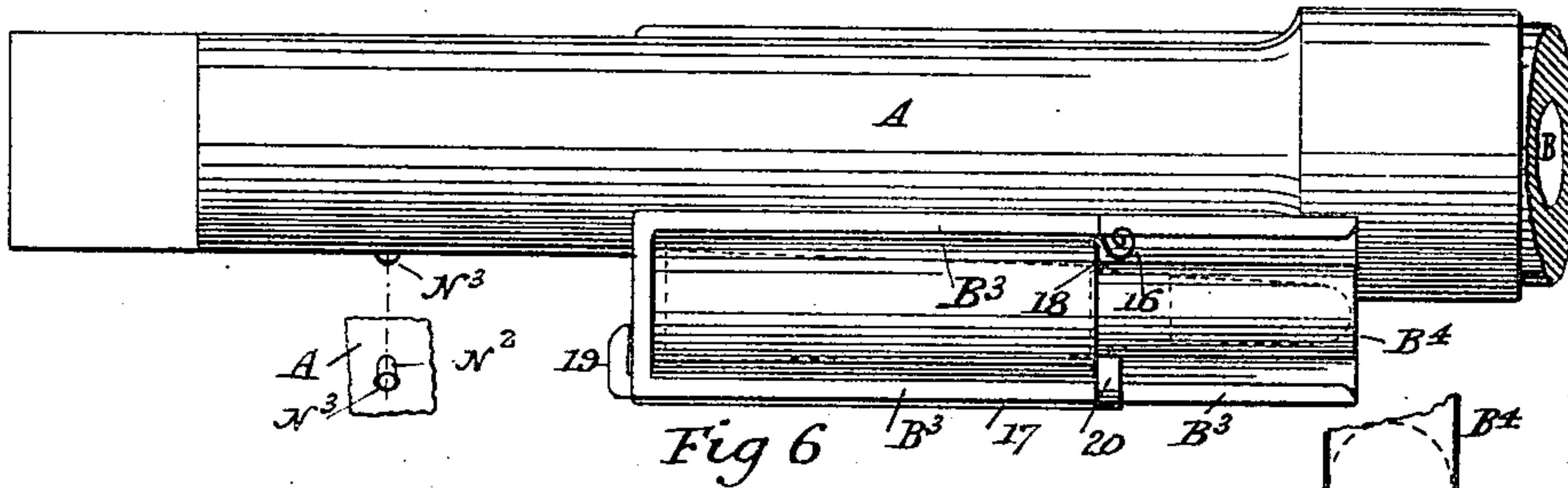
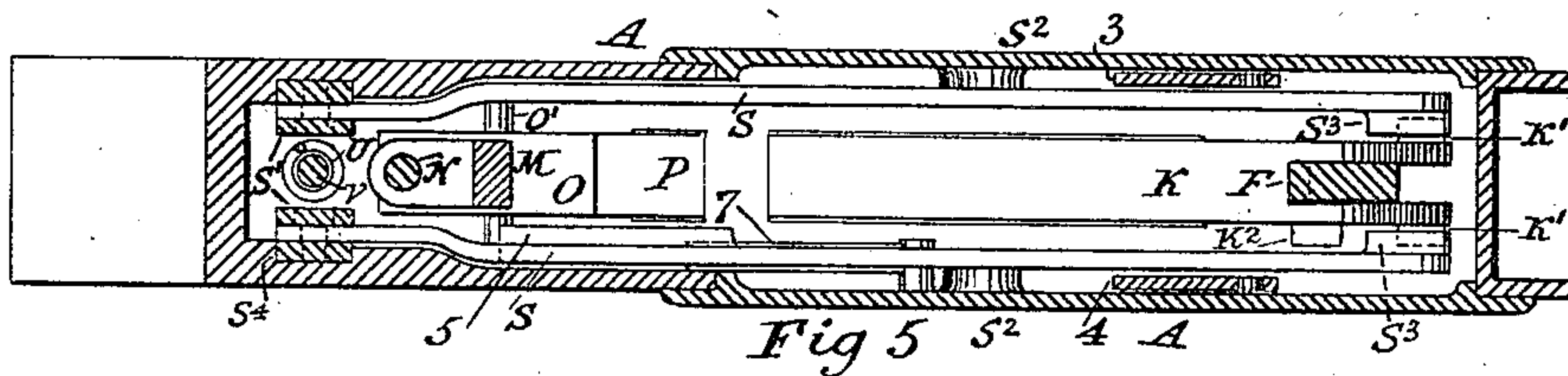
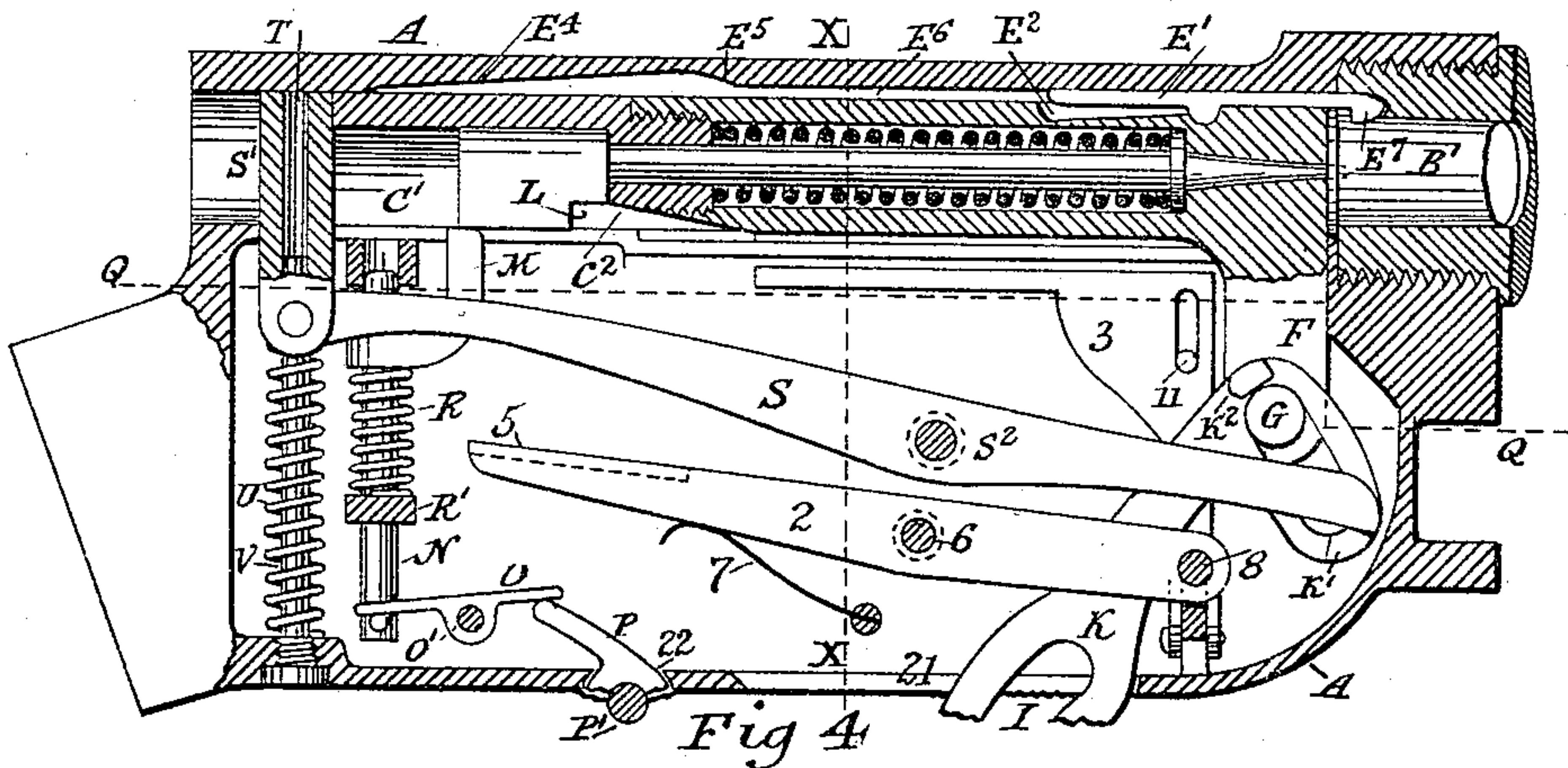
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UNITED STATES PATENT OFFICE.

THOMAS R. R. ASHTON, OF DENILQUIN, NEW SOUTH WALES, AND EDWARD
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MAGAZINE-FIREARM.

SPECIFICATION forming part of Letters Patent No. 537,958, dated April 23, 1895.

Application filed August 21, 1894. Serial No. 520,879. (No model.)

To all whom it may concern:

Be it known that we, THOMAS ROBERT RA-
NEY ASHTON, a resident of Denilquin, in the
Colony of New South Wales, and EDWARD
5 JOHN KELLY, a resident of Terang, in the Col-
ony of Victoria, mechanical engineers, sub-
jects of the Queen of Great Britain and Ire-
land, have invented Improvements in Maga-
zine-Firearms, of which the following is a
10 specification.

The object of our invention is to provide
improvements in fire-arms, the arm contain-
ing said improvements being usable with or
without a magazine and being well adapted
15 to meet the requirements of modern warfare.

The utility of small arms depends upon the
extent to which they possess the following
features:—first, capacity for rapid recharg-
ing with a supply of cartridges, and rapid fir-
20 ing off in succession of the cartridges in the
magazine; second, fewness, simplicity and
ease of manual operations required in firing
and reloading, avoiding strain on the hand
after much firing, and avoiding failures dur-
25 ing warfare to manage the fire-arm, by men
of weak nerves or small intelligence which
would occur if the operations were compli-
cated or required close attention; and thirdly,
durability and suitability of construction
30 whereby the arm does not get out of order
easily, and is comfortable and safe to carry.
Much attention has been paid by inventors
to these points, but room still exists for im-
provements.

Our fire arm can be replenished with a sup-
ply of cartridges while held to the shoulder,
without greatly disturbing the aim. It does
not require much intelligence or careful at-
tention from the user to prevent failures in
40 its use. It does not unduly tire the operator;
and, in particular the number of cartridges
which can be fired from it in a given time is,
comparatively speaking very high.

Our invention relates to the mechanism for
45 storing, loading, firing and extracting ammu-
nition, and not to the stock or its accessories.

Referring now to the accompanying draw-
ings, which form a part of this specification,
and show parts of a magazine rifle contain-
50 ing our improvements Figure 1 is a sectional

plan view on the line Y Y in Figs. 2 and 8.
Fig. 2 is a side elevation, partly in section on
line Z—Z in Fig. 8—i. e., with the near side of
the casting and other parts removed, to show
interior parts of the arm, in cocked position 55
ready to fire. Fig. 3 represents the parts
shown in Fig. 2 but in the position they as-
sume when (after firing) the empty shell has
been extracted from the breech, and is begin-
ning to be ejected through the side of the 60
arm. Fig. 4 also shows the parts represented
in Fig. 2 but in the position they assume
when the arm has been fired by pulling the
trigger. Fig. 5 is a sectional plan view from
above on the line Q Q in Fig. 4. Fig. 6 is a 65
plan view from above of the exterior of the
body of the arm showing a magazine in po-
sition. Fig. 7 is a perspective view of vari-
ous parts of the action within the interior of
the arm. Fig. 8 represents a transverse ver- 70
tical section, partly in elevation through the
line X X in Fig. 2 and looking toward the
breech. Fig. 9 is a perspective exterior view
of that part of the arm which carries the
magazine.

In the drawings the same letters and numer- 75
als of reference are used to denote like parts.

We do not confine ourselves to the precise
relative sizes of parts or to the design of them,
which may be varied within reasonable lim- 80
its without departing from the essential fea-
tures which constitute our improvements.

In the drawings, A is the body or outer case
which may be in several parts suitably con-
nected to allow access when required to the 85
interior for cleaning or other purposes.

B is the breech of the barrel.

E is a longitudinally sliding bolt which
opens or closes the breech, and has no turning
90 motion.

C is the firing pin or striker working within
a chamber in the breech-bolt E and having
a flange near the fore-end, said striker being
actuated by the main spring, D, which oper-
ates in said chamber between C and E as 95
shown. C cannot turn in E as its rear end has
plane sides which meet the plane sides C' of
the interior of E. The rear of C extends down-
ward, the front of the extension having a
step or notch L and the compression of the 100

spring D is effected by the engagement of the sear M in front of L. See Fig. 2.

F is a central lug projecting downwardly from the front of E.

5 G is a pin rigidly fixed transversely through the base of F.

K is the loading and extracting handle or lever having an inner forked end, within the body of the arm, said end being pivoted to
10 G by an elongated slot H, the lever also being pivoted to the pin W which passes through lugs K⁴ under the body and through an elongated slot I as shown.

P is the trigger pivoted at P' and adapted
15 to engage one end of the lever O which is pivoted at O'. The slots 21 and 22 in the body A allow the necessary motion to the lever K and trigger P respectively. When the trigger is pulled, the other end of lever O
20 bears down upon and depresses a pin N' which is transversely fixed through the base of a bar N which passes through an aperture in a cross piece R' and is maintained in a vertical position by the cross piece R², having an aperture into which the top of N passes,
25 the depression of N by the trigger not causing said top to entirely leave said aperture. The sear M (which can only move vertically) is fixedly connected to N, so that pulling the
30 trigger removes M from the front of L and allows the compressed spring D to propel forward the striker C with sufficient violence to discharge the cartridge B'.

R is the trigger spring which extends from
35 R' to M, keeping the latter pressed upward, and thus normally keeping the arm cocked.

A flat trigger spring acting upon N or M might be substituted for R if preferred.

S S are a pair of levers (a single lever only
40 might be used in some cases) pivoted at their rear ends to the base of the bolt locking block S', and pivoted to the body at S² and having each a fore-end transverse projection S³ with which the transverse projections K' on K engage when the handle K is swung forward.
45 The latter action raises the fore-end of S and depresses the rear thus drawing down the block S' free of the breech bolt E, but normally S' is kept up, (within the close fitting
50 grooves or bearings S⁴ in A) behind the bolt E by the pressure of the spring U which is kept always vertical by the interior pin V the top of which passes into the hole T in S'.

E is the extractor articulated about mid-
55 way of its length to the front solid part of bolt E, said bolt having a recess E² behind said articulation. The channel E⁶ above the top of the bolt E and in the case A, is such that E⁷ (the hook) must remain down while
60 the bolt is closed as in Figs. 2 and 4 and also while said extractor is being withdrawn or advanced except that when in discharging a cartridge shell, E³ (Fig. 3) the bolt E is brought to about its extreme rear position, the hook
65 E⁷ of the extractor rises, and frees the shell which then rolls out of the arm. When the tail of the extractor E' meets the inclined

plane E⁴ said tail is automatically depressed causing E⁷ to rise. When a new cartridge
70 has taken the place of E³ in Fig. 3 and the bolt E is carried forward, the inclined plane E⁵ (which forms a roof of the rearward extension of slot E⁶) depresses E as in Fig. 2. The hook E might be so placed as to grasp the rim
75 or other gripping place of the cartridge at the moment of firing so that the drawing rearward of the bolt E will immediately begin to extract the shell; but by having E⁷ (in the positions of Figs. 2 and 4) slightly forward of
80 the rim or other gripping place, E will (in the opening action) be drawn back slightly from the shell, leaving space between them, before E⁷ begins to extract shell. The purpose of this is explained subsequently.

A' (see Fig. 8) is a laterally inclined table
85 having a central longitudinal slot A² and two other longitudinal slots A³ and A⁴ one at each side. A² has passing through it the lug F on the bolt E and allows said lug to travel forward or back. A³ and A⁴ are to allow two
90 dogs or limbs 3, 4, (described hereinafter) to rise or descend through them.

When after firing a cartridge (see Fig. 4) the lever K is grasped by the handle, and swung round on its axis W to the position in
95 Fig. 3, and then brought home as in Fig. 2, that action causes the fire-arm to be unlocked, opened, emptied of the cartridge shell, reloaded, closed, cocked and locked again ready for firing, provided that at the time of moving K there is another carriage as B² (Figs. 1
100 and 8) in the magazine box B.

We shall now describe our improvements relating to reloading.

2 is a lever pivoted at 6 to one side of the
105 body, A having its rear end normally kept up as in Figs. 2 and 4 by a spring 7. Its fore-end is pivoted to the lower part of the dog 4 the foot of the latter being also pivoted to one end of a transverse rocking lever (or
110 pair of levers) 9 which is (or are) centrally pivoted at 10 as shown, and pivoted at the other end to the foot of the dog 3. Normally the end 8 remains depressed so that 4 is depressed, while 3 is raised through the slot A³.
115 No movement in these parts takes place until the lever K is actuated to extract the shell E³ (Fig. 3) but when the lever K is in the position there shown the projection K² strikes and depresses the rear extremity 5 of the lever 2, thus raising the end 8 and with it the
120 dog 4 and consequently lowering the dog 3. This allows the shell E³ to roll out, and prevents the new cartridge B² rolling. In returning the lever K to its normal position the
125 first part of its motion carries the lug K² upward, until that end of the slot H bears against the pin G. Simultaneously with this motion, the spring 7 presses the end 5 up, thus drawing down 4 and raising 3 again, and consequently the next cartridge B² immediately
130 rolls down the incline onto the table A' in front of the bolt E, being prevented from falling out of the arm by the dog 3. The pins

11 projecting from the body through a vertical slot in 3, 4 serve to prevent the latter sagging.

In the position of Fig. 3 the action is fully open and the springs R and *u* are compressed. The opening is accomplished first by drawing down the locking block S' (Fig. 4) and then sliding back the bolt E (which carries with it the striker C). The front of the slot C' is marked C² and is beveled so as to prevent obstruction by or to M. It has been explained that S' is depressed clear of E by S S which are actuated by K' K'. In moving K to effect this, the lower end of the slot H is first brought against the pin G and the further motion of K carries E back. This is easily effected, since the length of K outside of the axis *w* is much greater than its length inside, so that a powerful leverage is gained.

In order to load, close and lock the arm all that is necessary is to pull home the handle of K. The first part of the motion of K merely causes the end on which is the slot H, to move forward, and causes the shell E³ to be ejected and a new cartridge to take its place. The entrance and exit apertures for cartridges in the sides of A are marked 13 and 14 respectively. The further motion of K carries the bolt E forward until the new cartridge is home. The part M pressing on the under side of E rises as the slot C' passes over it, and catching against the notch L the forward motion of C is arrested, and M at the same time cocks the trigger. As E is still moved forward the spring D is necessarily compressed. When E closes the breech, the block S' is thrown up close behind E by the compressed spring U and the parts are then ready for firing. The rifleman has only two parts to operate, viz:—the lever K and the trigger P and their relative position in our invention, enables these parts to be repeatedly operated with great rapidity without disturbing the general aim. As an indicator, as to whether the trigger is cocked or not, either the pin N' (or a separate pin on the bar N) may extend to the exterior of the body through a slot N² on one side of A so that the outer end (N³) is visible to the riflemen, its position indicating the position of the trigger action. (See Fig. 6.) If it be desired to have the spring D eased, while an unfired cartridge is in the breech all that is necessary when drawing rearward the handle of K is to keep M down by pressure on the trigger P. This will allow L to pass M thus taking the position shown in Fig. 4.

If an unfired cartridge is to be extracted the lever K is operated without first pulling the trigger. As soon as the block S' (Fig. 2) is lowered the spring D will expand either rapidly or otherwise according to the speed with which K is being moved. This causes F to be retracted, either rapidly or otherwise and causes the point of C to be protruded through the fore-end of E. It also causes the hook E⁷ to extract the cartridge but leaving sufficient space between the latter and the end

of E so that the striker cannot cause an explosion. As the extractor gets into motion before the hook begins to pull out the cartridge there is also a momentum gained by which the extraction of the cartridge is facilitated.

We will now describe our magazine receiver more particularly shown by B³ in Figs. 6, 8 and 9. This receptacle is a box situated on the upper right side of the body just behind the breech. The box rises up on three sides above the body, and has the front open to enable a magazine to be pushed into or out of it. There are two longitudinal interior grooves marked 15 one in each side, to receive the lips of the magazines. A spring 16 and a locking bolt 17 are provided in the respective sides as shown, for the purpose of locking the magazine in place when the latter has been inserted. Instead of a spring and a bolt there might be two springs only, or two bolts, or other obvious modification. The spring is designed to be automatic in its action that is to say, while ordinarily holding the magazine B⁴ in place, as by its fore-end pressing in front of a shoulder 18 it will retract when the magazine is deliberately and with force pushed forward from the rear and thus allow the magazine to be removed and it will also retract by the pressure of a new magazine, sufficiently to allow the latter to be slipped on. The bolt 17 has its fore-end 20 and the rear end 19 turned up at right angles to its length and is actuated by the riflemen from the rear. When the end 19 is horizontal, the fore-end 20 locks against the magazine in front of the shoulder thereof, shown, and when the end 19 is turned to point vertically, the end 20 also points vertically so unlocking the magazine. The advantage of this is that the bolt lock can be used or not, as required, and that in all cases it can be seen by inspection whether the said lock is on or not. Obviously for the fastest firing the bolt would not be put on, the spring lock being sufficient when the firing is approximately horizontal.

It will thus be seen that our magazine receptacle, with its parts, firmly supports the magazine in an upright position and prevents its displacement in any direction. Owing to the support it gives, the magazine itself may be made of very thin inexpensive sheet metal without liability to injury from recoil.

In another application for a patent made by us we have described and claimed certain improvements in magazines for fire-arms in which magazines one element is that the lid of the magazine forms its bottom, and is adapted to slip off as the magazine is being inserted on the arm. Our magazine receptacle B³ as herein described is adapted to receive such magazines. When a magazine as B⁴ is in place it is evident that the cartridge will fall down until the lower one meets the base of the receptacle B³. This support forms

a curved or sloping upward continuation of the table A' and continues into the sides of the receptacle.

It will be evident that our fire-arm can be
5 used as a single loader, without the employment of any magazine by simply dropping a cartridge into the box B³ so that by making the sides of B³ high enough space will exist for any required stock of cartridges. Such an
10 arrangement would work usefully in combination with the other improvements we have described.

Having now particularly described and ascertained the nature of our said invention and
15 in what manner the same is to be performed, we declare that what we claim is—

1. The combination with an operating lever K having an exterior handle, and an elongated slot I, said lever pivoted to the arm by a pin
20 through the said slot and having an inner end provided with a slot H, of a pin G which passes through the said end slot transversely and which is fixed on a lug F on the breech bolt, all substantially as and for the purposes set
25 forth.

2. In combination with a breech bolt, a breech bolt locking block, a centrally pivoted lever S connecting at one end with said block and an operating lever K, engaging with the
30 opposite free end of the said lever S to actuate the same substantially as described.

3. In combination with a lever S pivoted centrally and extending longitudinally of the casing, a breech bolt locking block connected
35 to one end of said lever, transverse lugs on the opposite end of said lever and a lever K having lugs engaging said lugs on the lever S substantially as described.

4. In combination, a breech bolt, a locking
40 block therefor sliding vertically, a spring be-

neath said block and positively operating means for the block, consisting of the pivoted lever S engaging said block at one end and the lever K engaging the opposite end of the lever S substantially as described. 45

5. In combination, a breech bolt, a locking block, a pin fitting an opening in said block and a spring inclosing the pin and bearing against the block, with means for operating the block positively in one direction, substan- 50 tially as described.

6. In combination a casing, a breech bolt within the same, an extractor having tilting movement on the bolt, the casing above the bolt and extractor being grooved to receive 55 the same and provided with inclined planes for giving tilting movement to the extractor substantially as described.

7. In combination in a fire arm, a breech bolt, a lever K for operating it, cut off dogs, 60 a lever 5 operated by the lever K and intermediate connections between the lever 5 and cut off dogs, substantially as described.

8. In combination in a fire arm, a breech bolt, a lever K for operating it, said lever K 65 being loosely pivoted by a slotted connection at the point W, an extension of said lever above the pivot, said extension being slotted and lugs K' K² at the ends of the slotted part, the said parts operating substantially as de- 70 scribed and for the purposes set forth.

In witness whereof we have hereunto set our hands in the presence of two subscribing witnesses.

THOMAS R. R. ASHTON.
EDWARD J. KELLY.

Witnesses:

GEORGE G. TURRI,
E. F. NICHOLLS.