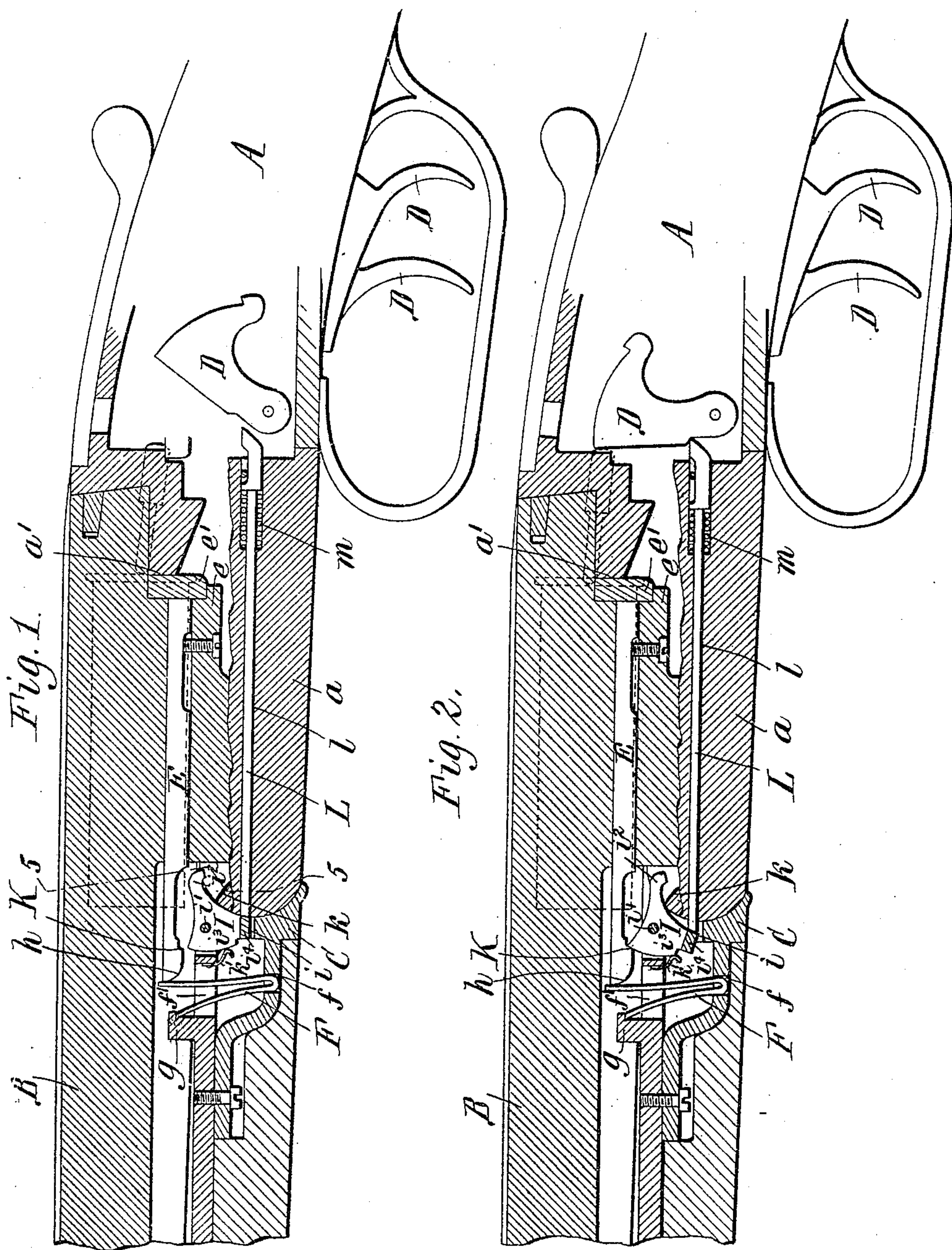


E. S. WATSON.
EJECTOR MECHANISM FOR BREECH LOADING FIREARMS.

APPLICATION FILED JULY 11, 1904.

2 SHEETS—SHEET 1.



Witnesses:

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No. 798,469.

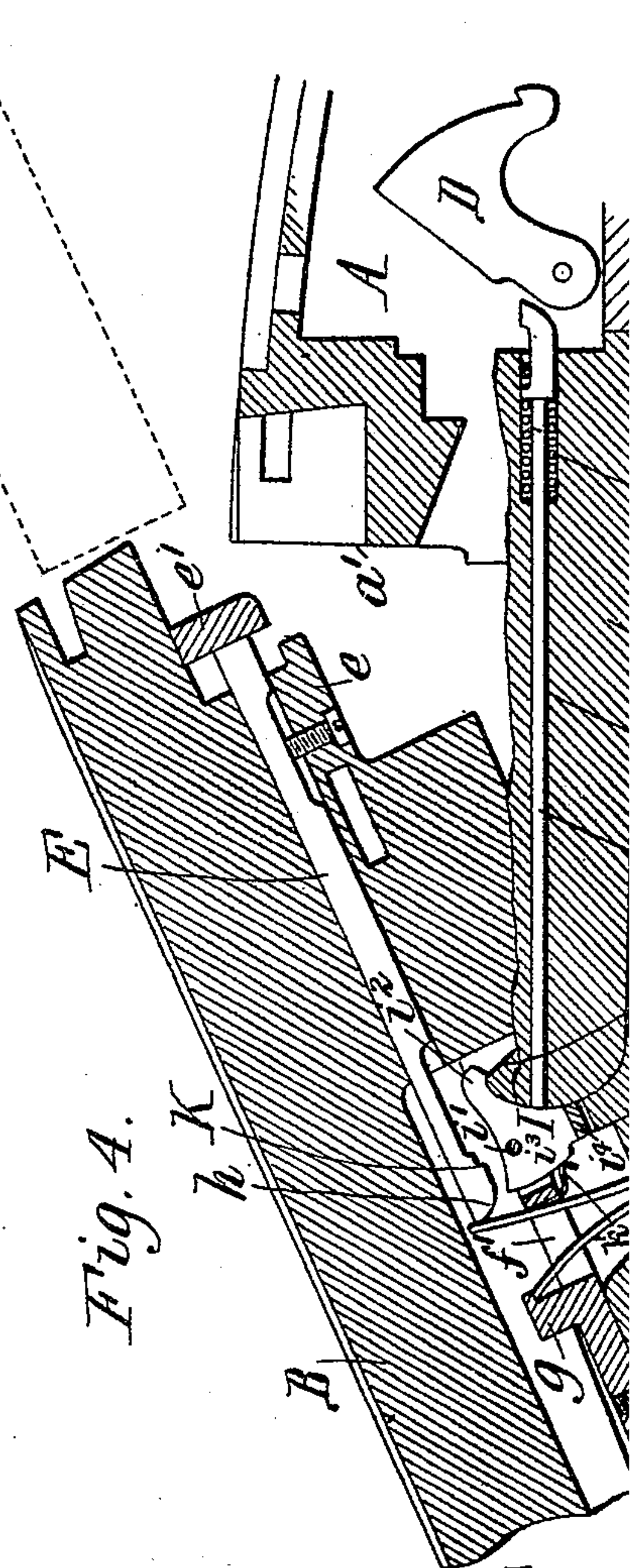
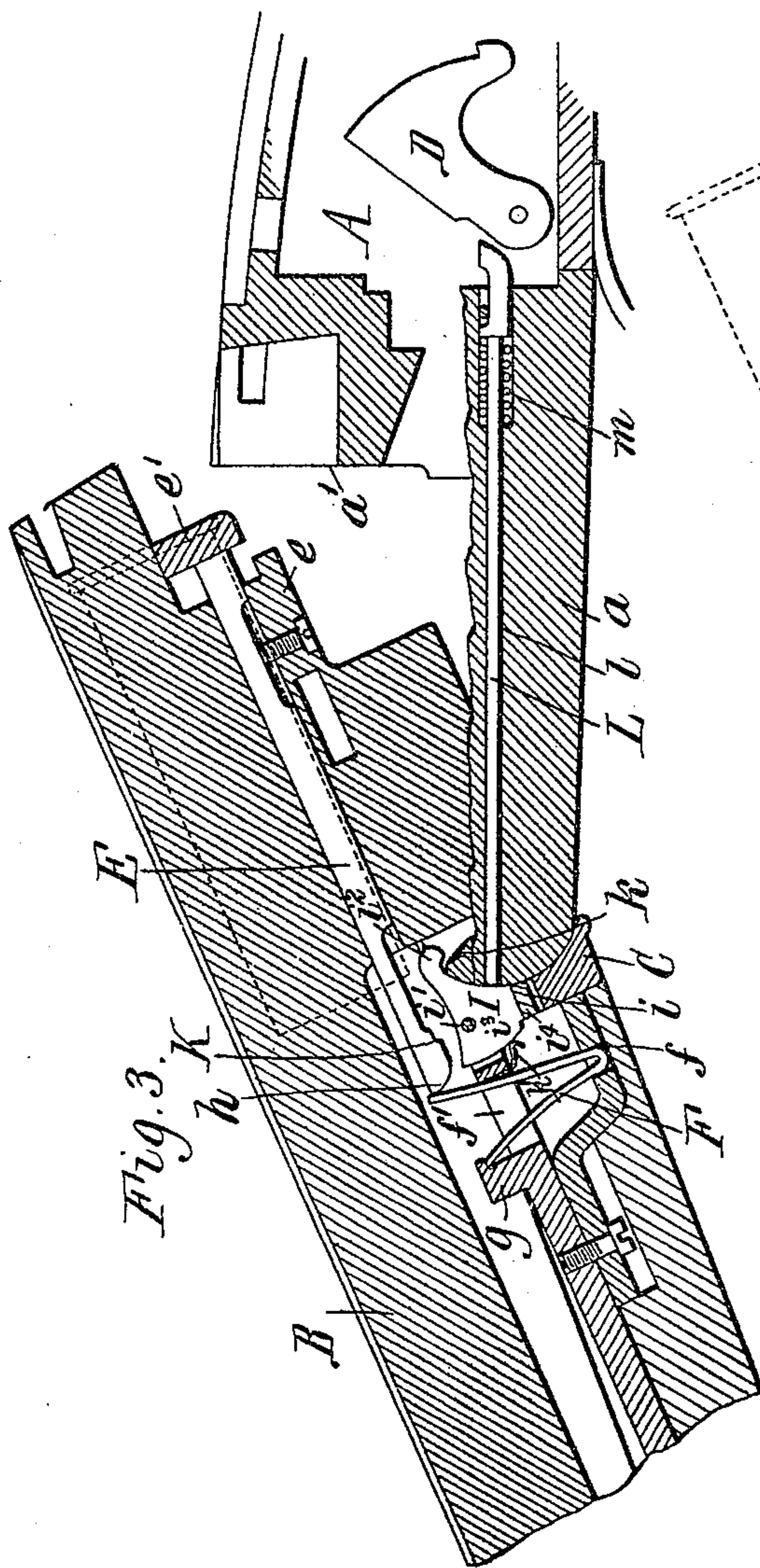
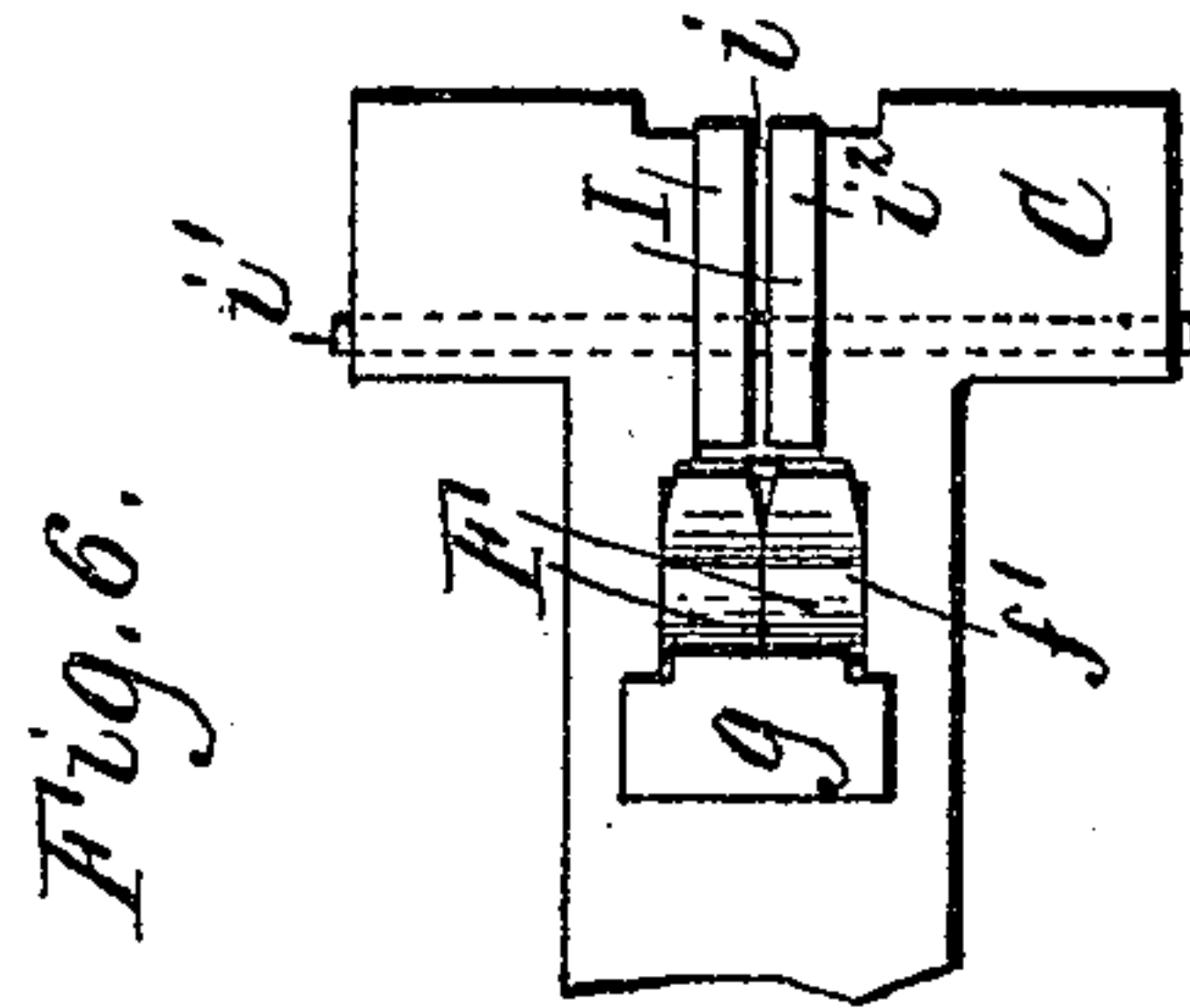
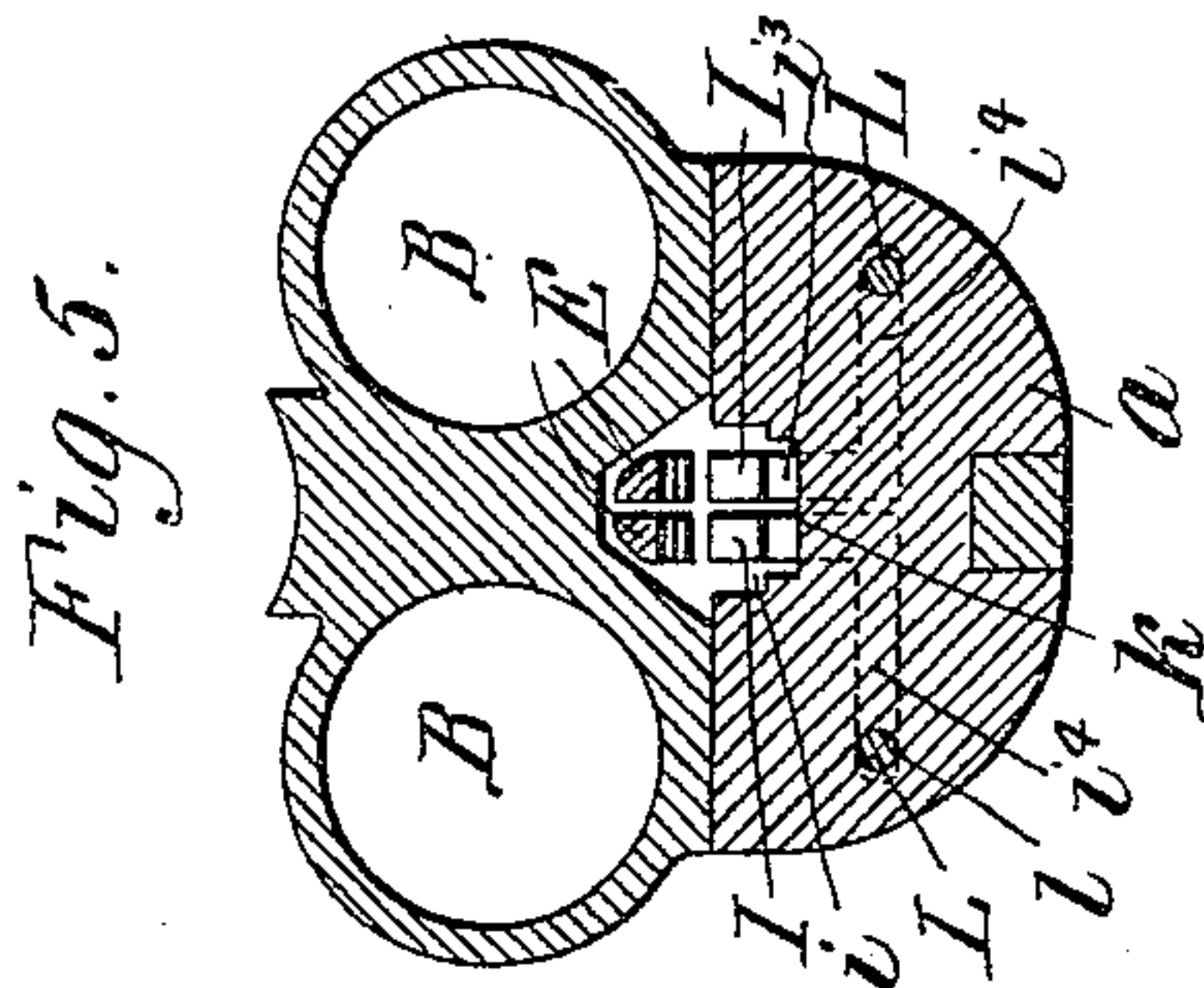
PATENTED AUG. 29, 190

E. S. WATSON.

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APPLICATION FILED JULY 11, 1904.

2 SHEETS—SHEET



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UNITED STATES PATENT OFFICE.

EDWARD S. WATSON, OF BATAVIA, NEW YORK, ASSIGNOR TO BAKER
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EJECTOR MECHANISM FOR BREECH-LOADING FIREARMS.

No. 798,469.

Specification of Letters Patent.

Patented Aug. 29, 1905.

Application filed July 11, 1904. Serial No. 215,982.

To all whom it may concern:

Be it known that I, EDWARD S. WATSON, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, have invented a new and useful Improvement in Ejector Mechanism for Breech-Loading Firearms, of which the following is a specification.

This invention relates to ejector mechanisms for breech-loading or breakdown firearms of the kind which act to only start or partially eject the cartridge from the barrel when the breech is opened before the hammer has been tripped and the gun discharged, so that the cartridge can be removed by hand and saved, and to completely eject or throw the shell out of the barrel when the breech is opened after the hammer has been tripped and the gun discharged.

The objects of the invention are to provide an efficient desirable ejector mechanism which is of exceedingly simple construction and composed of the minimum number of parts and to so construct the mechanism that all of the parts thereof, with the exception of the extractor-rod and ejector-setting device, are carried by the removable fore-end of the gun.

In the accompanying drawings, consisting of two sheets, Figure 1 is a fragmentary longitudinal sectional elevation of a breech-loading firearm provided with an ejector mechanism embodying the invention and showing the position of the parts when the hammer is cocked. Fig. 2 is a similar view showing the position of the parts after the hammer has been tripped. Fig. 3 is a similar view showing the breech open and the cartridge started. Fig. 4 is a similar view showing the breech open and indicating by broken lines the empty shell ejected from the barrel. Fig. 5 is a transverse section through the breech in line 5 5, Fig. 1. Fig. 6 is a detached plan view of the inner end of the firearm.

Only such parts of a gun are shown in the drawings as are necessary to a complete understanding of the invention.

A represents the breech block or frame, having the usual forwardly-projecting arm or portion *a*, to which the breech ends of the barrels B are pivoted, and the upright shoulder or recoil-plate *a'*, which closes the rear ends of the barrels; C, the usual fore-end, which is removably secured to the barrels and completes the detachable pivotal connection be-

tween the barrels and the breech-block, and D the hammers, only one of which is shown. These parts are of known construction and perform their usual functions.

E E represent the extractors, consisting, as usual, of rods mounted side by side on the inner side of the barrels to slide longitudinally in a hole through the barrel-lug *e* and having heads *e'* to engage the flanges of the cartridges to extract the same. A double-barreled gun is illustrated in the drawings and an extractor is furnished for each barrel. The extractors are alike and are operated independently of each other by separate ejector mechanisms, which are also alike. For brevity of description only one ejector mechanism will be described, and it will be understood that in a single-barreled gun only one extractor and its ejector mechanism are necessary.

F represents a V-shaped leaf-spring which is arranged vertically in the rear portion of the fore-end, with its lower bent end confined in a hole or seat *f* in the lower part of the fore-end and the upper ends of its arms projecting up through a hole *f'* in the upper portion of the fore-end. The front arm of the ejector-spring bears at its upper end against a lug or portion *g* on the fore-end, preferably under an overhanging shoulder thereon, by which the spring is retained in place in the fore-end, while the upper end of the rear arm of the spring bears against the front end of the extractor-rod E. The latter has a beveled or inclined front end *h*, so that when the fore-end C is forced into position on the barrels in the usual manner the end of the rear leg of the ejector-spring will ride up on said inclined end and will be thereby forced forwardly to strain or tension the spring. The extractor is held stationary while the breech is closed, so that the spring will be thus strained by the engagement of its head with the upright shoulder or recoil-plate *a'* of the breech-block. The return movement of the rear arm of the ejector-spring after deflection is limited by the engagement thereof with the rear end of the hole *f'* in the fore-end.

I represents a sear or lever which is located in a slot or opening *i* in the fore-end in rear of the ejector-spring and is pivoted to swing vertically on a horizontal pin or pivot *i'*. The sear occupies a position beneath the extractor-rod E and is of bell-crank form, having a rear-

wardly-projecting arm or tailpiece z^2 and a depending leg z^3 , preferably provided with a lateral projection or foot z^1 . (See Figs. 1 and 5.)

5 K represents a shoulder on the under side of the extractor-rod, located just in advance of the upper front corner of the ejector-sear, and z is a trip-shoulder on the front end of the arm a of the breech-block beneath the
10 tailpiece of the sear. In the normal position of the sear (shown in Fig. 1) it is held out of engagement with the shoulder K on the extractor-rod, and when the breech is opened the extractor-rod is moved gradually rearward
15 by the ejector-spring F and starts or only partially extracts the cartridge. The sear can be so mounted on its pivot as to be held by friction in this normal position, or, if desired or found necessary, a suitable light
20 spring, such as z' , Fig. 1. When, however, the hammer is tripped and the gun discharged, the sear is tilted to the position shown in Fig. 2, with its upper front corner in engagement with the shoulder K of the extractor, so that
25 when the breech is thereafter opened the extractor-rod will be held by the sear from rearward movement until the sear is tripped and allows the ejector-spring to project the extractor suddenly rearward, and thereby completely eject or throw the empty shell from
30 the barrel. The sear is thus set to engage and hold the extractor-rod by the following manner: L represents a setting-rod arranged to slide longitudinally in a hole l in the breech-block, with its front end in rear of and adapted to strike the foot of the ejector-sear and
35 its rear end in front of and adapted to be struck by the hammer D when the latter is tripped. The setting-rod is normally held rearwardly out of engagement with the sear
40 by a spring m , surrounding the rod between a shoulder thereon and a shoulder in the hole in which the rod slides. The foot on the ejector-sear is provided, so that the setting-rod can be located in the vertical plane of the
45 hammer which is near the side of the lock and not in the same plane as the ejector-sear; otherwise the lateral foot of the sear could be dispensed with.

50 The operation of the ejector mechanism is as follows: When the breech is opened for loading, the hammers are cocked by an ordinary cocking device, (not shown,) and when the cartridges are inserted and the breech
55 closed the heads of the extractors will strike the recoil-plate, which will force the extractors forward and strain the springs F. If after inserting the cartridges and closing the breech and before discharging the gun it is desired
60 to remove the cartridges, the breech is again opened. In the opening movement of the barrels the ejector-springs F will move the extractor-rods gradually rearward, thereby starting the cartridges or only partially ex-
65 tracting them from the barrels. When, how-

ever, either hammer is tripped to discharge the gun, it strikes and moves forward its related setting-rod, which strikes the depending leg of its sear and raises the upper front corner thereof up into engagement with the
70 shoulder K on the extractor-rod controlled thereby. Upon thereafter opening the breech the sear will hold the extractor-rod from movement and so hold the ejector-spring under tension until the breech has been opened far
75 enough for the sear to be tripped to release the extractor-rod by the engagement of its tailpiece with the shoulder z on the front end of the breech-block. The extractor-rod when released is projected suddenly rearward by
80 the ejector-spring with sufficient force to throw the exploded shell completely out of the barrel. The extractor-rod is not thus released until the breech is completely or nearly
85 fully opened, so that the shell will be thrown clear of the shoulder or recoil-plate a' of the breech-block.

As before explained, the ejector for each barrel operates independently of that for the other barrel, and if the breech is opened after
90 one barrel only has been discharged the exploded shell will be completely ejected from its barrel, while the unexploded cartridge will be only started.

The ejector described is of exceedingly simple and compact construction, involving only
95 three parts, the ejector-spring, sear, and setting-rod, in addition to the ordinary part of the gun, and the ejector mechanism, with the exception of the extractor-rod and setting-rod, is mounted on the fore-end and is removable with the latter from the gun.
100

I claim as my invention—

1. In an ejector mechanism for breech-loading firearms, the combination with a barrel
105 and detachable fore-end, of a sliding extractor, and a spring stationarily mounted in the detachable fore-end and having a substantially upright arm which bears at all times directly against the extractor for moving the latter
110 rearwardly when the breech is opened, said spring being strained by the forward movement of the extractor in closing the breech, substantially as set forth.

2. In an ejector mechanism for breech-loading firearms, the combination with a barrel,
115 and a detachable fore-end, of an extractor slidably mounted on the barrel, a spring mounted in the detachable fore-end and having a substantially upright arm which bears at all times against the front end of the extractor for moving the latter rearwardly when
120 the breech is opened, said extractor having an inclined face at its front end against which the upright arm of said spring bears and whereby the spring is strained when the fore-end is applied to the barrel, substantially as set forth.
125

3. In an ejector mechanism for breech-loading firearms, the combination with a barrel
130

and breech-block, of a sliding extractor, a spring carried by the barrel and having an arm which bears against the extractor for moving the latter rearwardly when the breech is opened, said spring being strained by the forward movement of the extractor in closing the breech, a sear which is normally out of engagement with said extractor, means operating upon the discharge of the firearm to set said sear in engagement with said extractor to hold the latter, and means for tripping said sear to release the extractor when the breech is open, substantially as set forth.

4. In an ejector mechanism for breech-loading firearms, the combination with the breech-block, fore-end, and hammer, of a sliding extractor, a spring mounted in the fore-end and having an arm which bears against the extractor for moving the latter rearwardly, a sear, means operated by the hammer when the latter is tripped for moving said sear into engagement with the extractor to hold the latter from movement by said spring, and means for tripping said sear to release the extractor, substantially as set forth.

5. In an ejector mechanism for breech-loading firearms, the combination with the barrel, breech-block, fore-end, and hammer, of a sliding extractor, a spring mounted in the fore-end and having a substantially upright arm which bears against the extractor for

moving the latter rearwardly, a sear pivoted on the fore-end, means operated by the hammer when the firearm is discharged for setting said sear in engagement with the extractor to hold the latter from movement by said spring, said sear being tripped to release the extractor by the engagement of a portion thereof with a stationary portion of the breech-block when the breech is opened, substantially as set forth.

6. In an ejector mechanism for breech-loading firearms, the combination with the barrel, breech-block, fore-end, and hammer, of a sliding extractor, a two-armed spring mounted vertically in the fore-end with one arm engaging the extractor for moving the latter rearwardly, a sear pivoted on the fore-end and having a tailpiece extending rearwardly over a stationary part of the breech-block, means operated by the hammer for setting said sear in engagement with the extractor to hold the latter from movement by said spring, said sear being tripped to release the extractor by the engagement of its tailpiece with said part on the breech-block when the breech is opened, substantially as set forth.

Witness my hand this 6th day of July, 1904.

EDWARD S. WATSON.

Witnesses:

C. B. HORNBECK,

C. M. BENTLEY.