

E. FLUES.

COCKING AND SAFETY MECHANISM FOR BREAKDOWN GUNS.

No. 546,516.

Patented Sept. 17, 1895.

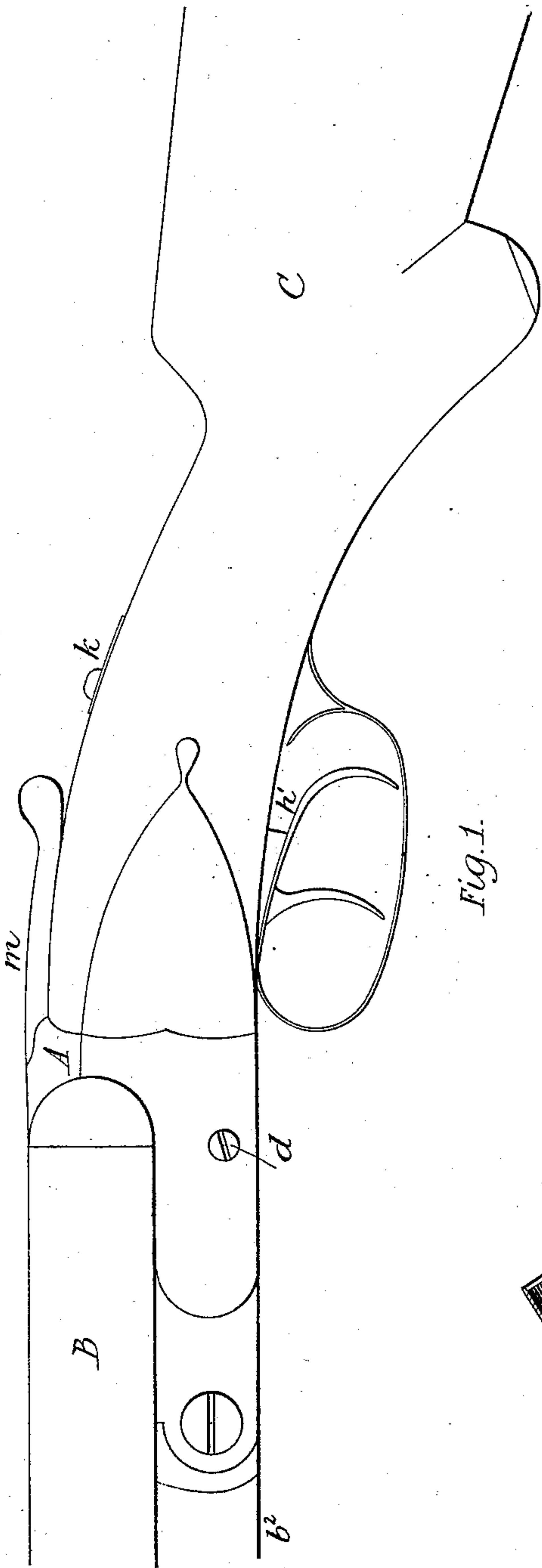


Fig. 1.

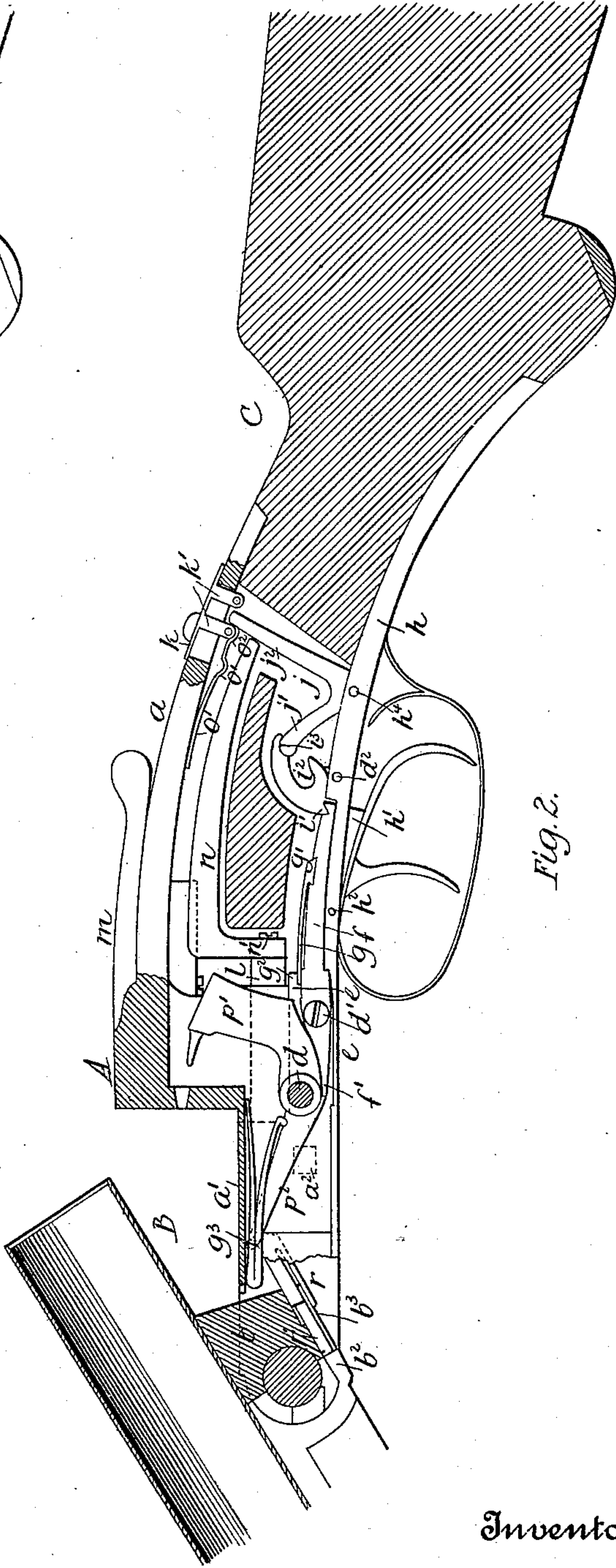


Fig. 2.

Witnesses

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Inventor

Emil Flues

By *W. J. Norton*  
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(No Model.)

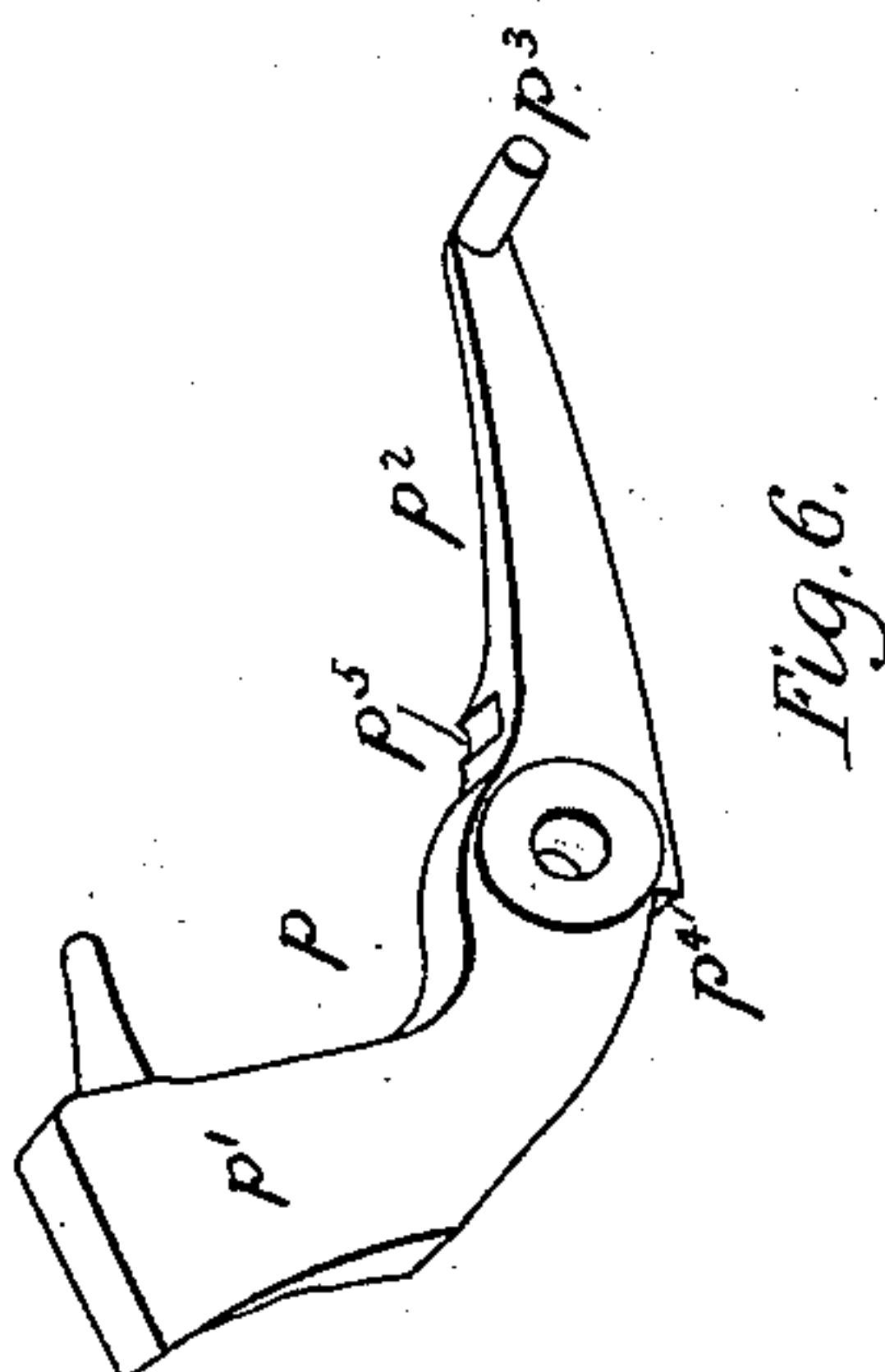
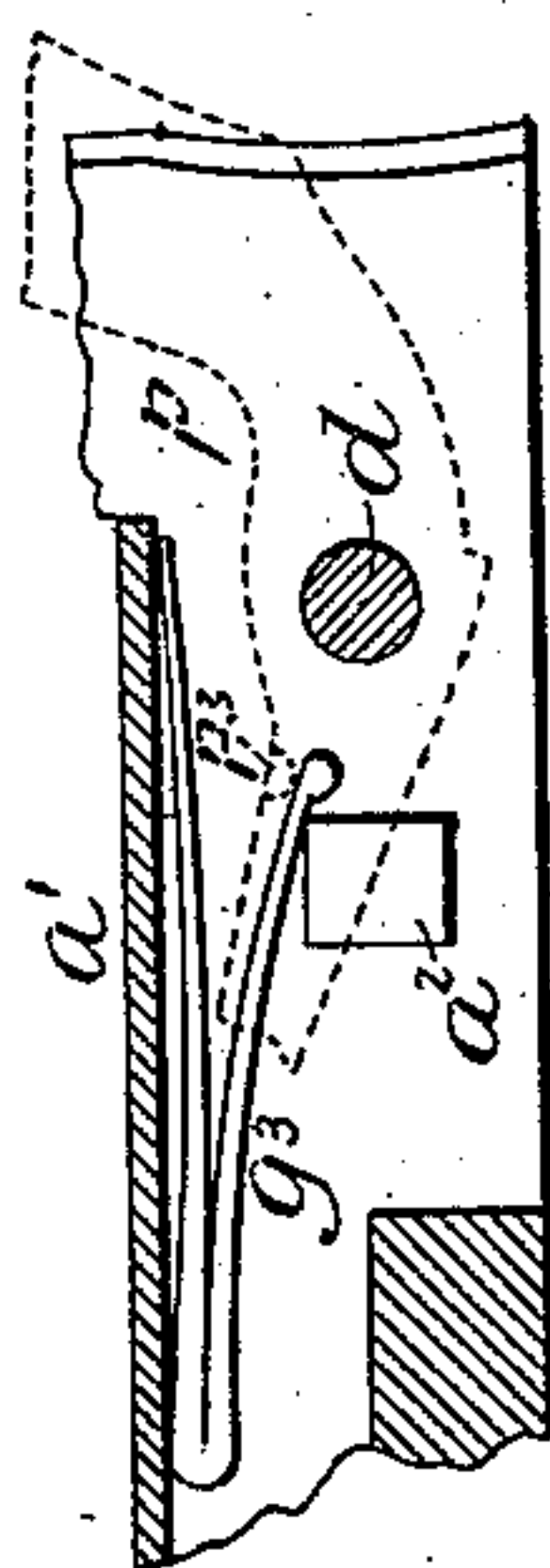
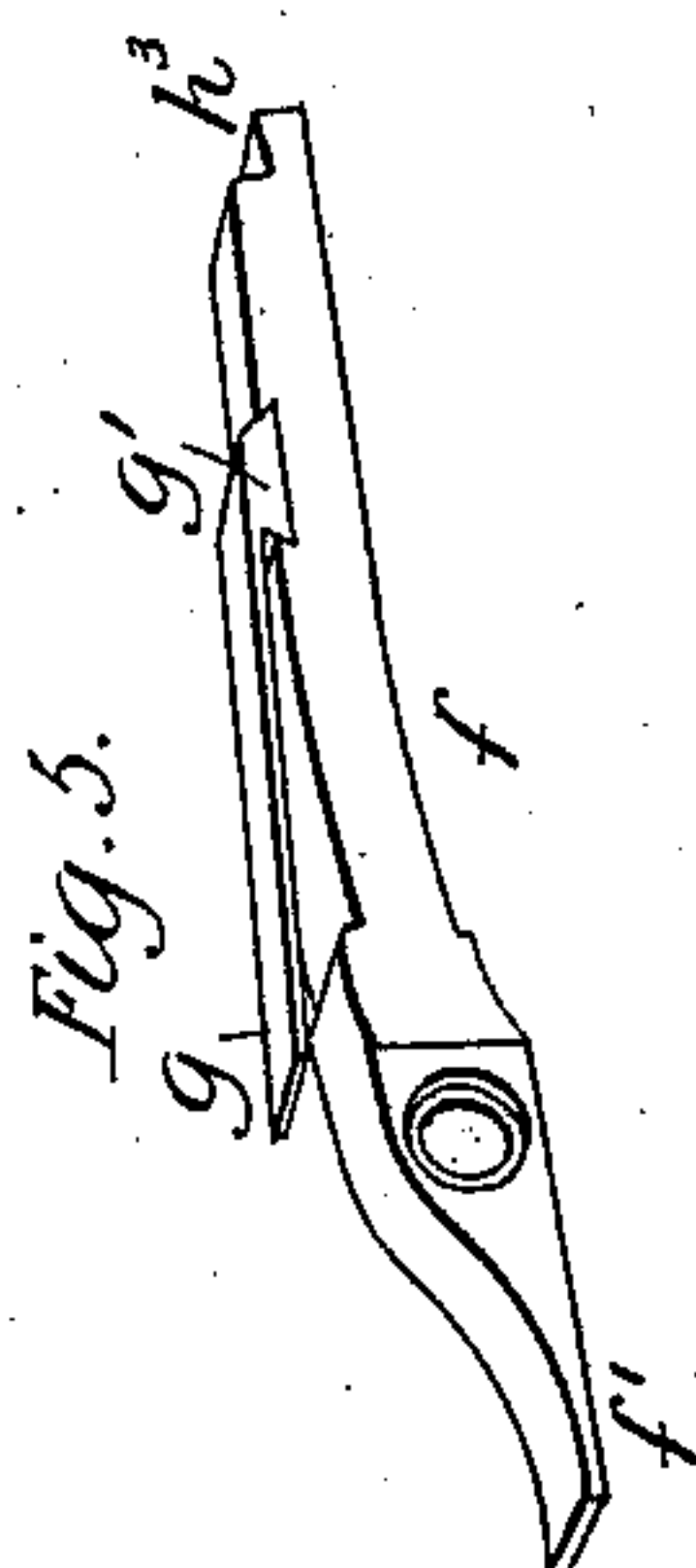
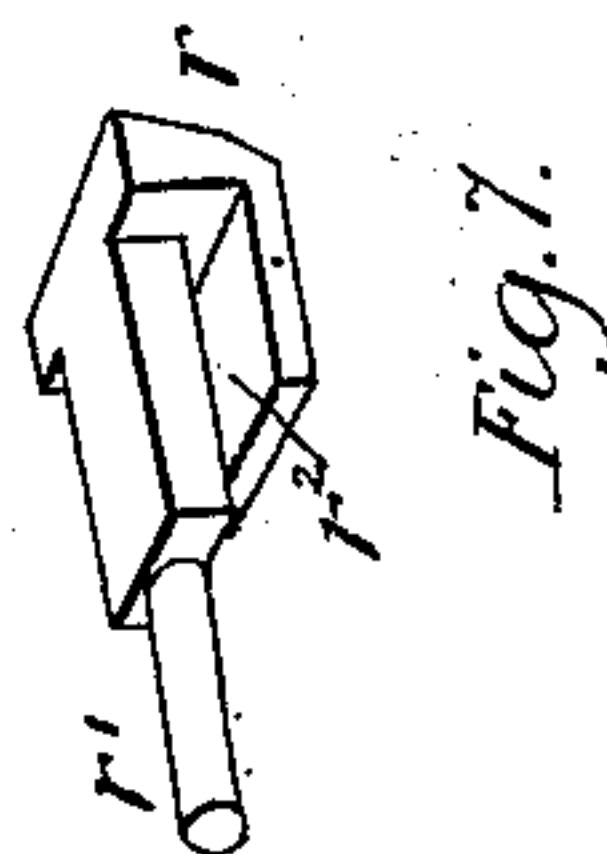
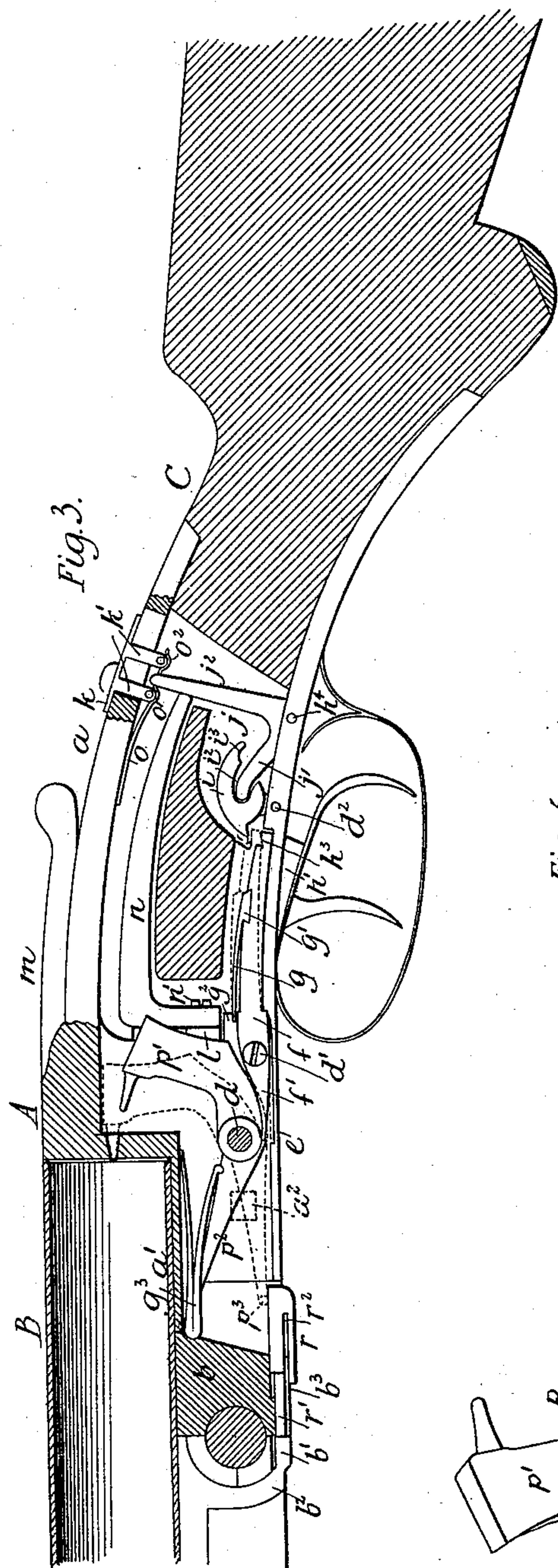
2 Sheets—Sheet 2.

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By Attorneys  
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## Witnesses

W. J. Norton.  
J. E. Zimmerman.



# UNITED STATES PATENT OFFICE.

EMIL FLUES, OF BAY CITY, MICHIGAN.

## COCKING AND SAFETY MECHANISM FOR BREAKDOWN GUNS.

SPECIFICATION forming part of Letters Patent No. 546,516, dated September 17, 1895.

Application filed January 26, 1895. Serial No. 536,328. (No model.)

*To all whom it may concern:*

Be it known that I, EMIL FLUES, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have  
5 invented certain new and useful Improvements in Firearms; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable  
10 others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has reference to that class of  
15 firearms which are designated in the art as "breech-loading hammerless guns," and has for its object the production of an improved firearm possessing advantages in point of extreme simplicity, effectiveness, and precision  
20 in operation and durability, and added to these the structure of the firearm is such as to enable an easy and rapid manipulation in action and a ready disconnection and reassemblage of the parts for cleaning purposes.  
25 My invention consists in improved means for locking the sears controlled by the movement of the locking-bolt and the exposed slide-plate; in a device so arranged as to partially compress the mainspring independent of the  
30 hammer; in a hammer of new and novel construction, and in improved means for cocking the hammer by the breaking of the barrels.

The invention will now be described in detail, and in connection with the description  
35 attention is called to the accompanying drawings, in which—

Figure 1 is a side elevation of a firearm embodying my invention. Fig. 2 is a longitudinal  
40 section showing the firearm open for loading. Fig. 3 is a similar view, but showing the parts in position for firing in full lines, and in dotted lines the position of the parts after firing. Fig. 4 is a perspective view of the  
45 safety locking-piece. Fig. 5 is a perspective view of one of the sears. Fig. 6 is a perspective view of one of the hammers. Fig. 7 is a perspective view of the cocking-lug. Fig. 8  
is a detail view showing the mainspring-compressing lug.

50 Referring to the said drawings by letter, A denotes the frame, B the barrels, and C the

stock, these parts being of ordinary construction.

The hammers, the construction and operation of which I will presently describe, are  
55 pivotally mounted on a bearing-screw  $d$ , which is passed through the frame and through a block  $e'$  on the lock cover-plate  $e$ , and pivotally secured to said block, also by screws  $d'$ , are the sears  $f$ , the locking ends  $f'$  of which  
60 are normally raised by the action of springs  $g$ , secured to the sears rearwardly of the screws  $d'$ , preferably by a dovetail connection  $g'$ , as shown. The free end of said springs bear  
65 against the under side of a projection  $g^2$ , extending from the rear end of the block  $e'$ . The trigger-plate  $h$ , which is a continuation of the lock cover-plate  $e$ , is partially cut away on  
70 its upper side to accommodate the sears when in their normal position, as shown, and said plate is slotted to receive the trigger-arms  $h'$ ,  
75 which are commonly mounted on a pin  $h^2$ . The sears are each formed at its rearward end with a V-shaped notch  $h^3$ , said notch being in the upper side, and adjacent thereto is  
80 the safety locking-piece  $i$ , which is pivotally secured to the trigger-plate by a pin  $d^2$ . This locking-piece has its forward or locking end  $i'$  conforming in shape to the notch  $h^3$  in the  
85 sear which it is adapted to engage, and  $i^2$  is a slot or recess in said piece to receive one arm  $j'$  of the locking-lever  $j$ . This lever is adapted, when moved in a manner to be presently described, to actuate the locking-piece  
90 to lock or release, as the case may be, the sear, and consequently to lock or release the trigger, and in order to maintain the locked condition of the parts an offset or recess  $i^3$  is provided in the slot  $i^2$  to receive and hold the  
95 end of the arm  $j'$ , which is shaped to conform thereto.

The lever is pivoted in a slot formed in the trigger-plate  $h$  by a pin  $h^4$ , and its other arm  
100  $j^2$  is confined between two lugs  $k' k'$ , depending from the slide-plate  $k$ , which is movable in a slot in the rearward extension  $a$  of the frame A. This slide-plate is capable of operation by hand, and its movement imparts through the lever  $j$  a forward movement for  
unlocking and a rearward movement for locking to the safety-piece  $i$ , which respectively  
disengages and engages the sear.



The locking of the sears is automatically accomplished when the firearm is opened for loading as follows: On the rearward end of the bolt  $l$ , which locks or breaks the barrels upon the movement of the thumb-lever  $m$  through the ordinary eccentric, is secured by screws  $n'$  one end of a pusher-rod  $n$ , which extends rearwardly and abuts against the arm  $j^2$  of the locking-lever  $j$  or against the forward lug  $k'$  on the slide-plate, as preferred. When the lever  $m$  is moved to release or break the barrels, the bolt  $l$  is moved rearwardly until said barrels are released, and simultaneously therewith the pusher-rod  $n$  is moved by said bolt rearwardly and carries therewith the slide-plate and consequently the arm  $j^2$  of the locking-lever, and its other arm  $j'$  is thereby raised and by said movement depresses the safety-piece and locks the sear against movement. The slide-plate is preferably provided with a spring  $o$  in order to produce a slight binding action, as a free easy movement to the same is not desirable, and this spring is formed with two seats  $o'$   $o^2$ , which respectively receive the forward lug  $k'$  as the plate is moved forward and backward. This spring is secured to the under side of the extension  $a$  and bears at all times on said lug  $k'$ .

The hammers are shown at  $p$ , and each comprises the head  $p'$  and a forwardly-extending arm  $p^2$ , carrying at its extreme end an inwardly-projecting finger  $p^3$ . As before stated, each hammer is pivotally mounted on the bearing-screw  $d$ , and below said bearing is the usual shoulder  $p^4$ , which engages the locking end  $f'$  of the sear when the hammer is cocked. Forward of the bearing is a seat  $p^5$ , which receives one end of the mainspring  $g^3$ , which latter is confined between said seat and a portion of the frame  $a'$ , as shown.

To facilitate the removal and insertion of the hammer for cleaning purposes, I provide means for maintaining the compression of the spring independent of the hammer in the nature of a lug  $a^2$ , secured to the side of the frame, and which co-operates with the portion  $a'$  of the frame when the hammer is withdrawn. The relative position of said lug is such that the spring when inserted receives a compression nearly equal to the normal, and when the hammer is placed in position the compression is increased sufficient only to transfer the power of the spring from the lug to the hammer. The spring, when the hammer is withdrawn, is held in position by the lug, but a slight outward pressure readily forces the spring from its place and thus renders the operation of disconnection and reassembly easily and quickly accomplished.

Referring now to the mechanism for automatically cocking the hammer,  $r$  denotes a cocking-lug which is slidably connected in the lower end of the lump  $b$  and projects beyond the same with its rearward end in the path of the fingers  $p^3$  of the hammers. Secured to the

forward end of the lug is a pin  $r'$ , which extends through and beyond the lump and abuts against a shoulder  $b'$  on the fore end  $b^2$ . The finger  $p^3$  of the hammers and the rearward end of the cocking-lug contact when the hammers are snapped or fired, and as the barrels are broken the lug pushes said fingers upward and causes the hammer-heads to depress until the engagement with the sears is effected, when the firearm is cocked. The barrels now being raised, the lug is lowered, but the fingers  $p^3$  remain raised until the arm is fired. The cocking-lug is mounted in the lower end of the lump in a manner to permit of a slight longitudinal movement, the object of said movement being to enable the engaging end of the lug, which is normally beneath the fingers, to clear said fingers when the parts are being assembled. When the lug has passed downward clear of the fingers, the shoulder  $b'$  on the fore end presses on the now exposed end of the pin  $r'$  and moves the same, and consequently the lug, inward until the latter is in a position beneath the fingers. The lug  $r$ , to permit of this movement, is provided with a slot  $r^2$ , which slidably engages a portion  $b^3$  of the lump  $b$ , as shown.

By reference to the foregoing it will be observed that I have combined extreme simplicity and few number of parts with increased effectiveness. The durability of the working parts, moreover, is apparent, and while the liability to disorder is reduced to the minimum any part becoming broken may readily be replaced by a similar part. The simplicity of construction also enables one not skilled in the art to dismember and reassemble the arm, and the peculiar construction and operation of the safety device precludes accidental discharge.

I claim as my invention—

1. The combination in a fire-arm of a spring controlled sear having a V-shaped notch in the upper side of its rear end, a pivoted locking piece having its forward end conforming to said notch and adapted to engage the same to lock the sear, the rear end of said locking piece having a curved slot terminating at its upper end in a curved recess, a pivoted lever, one arm of which extends forwardly and terminates in a rounded end to conform to the recess and adapted to engage the latter or to move in said slot, and the other arm of which extends upwardly and has loose connection with an exposed slide plate, the locking bolt, and the pusher rod, the forward end of which is rigidly connected to said bolt and extends therefrom upwardly and then rearwardly to the vertical arm of the lever, all as and for the purposes set forth.

2. The combination in a fire-arm of a hammer provided with a forwardly projecting integral arm terminating in a laterally projecting finger, and a radially and slidably movable cocking lug carried by the lump, the rearward end of said lug contacting with said fin-



ger and adapted to raise the same to cock the hammer when the barrels are broken, substantially as described.

3. The combination in a fire-arm, of a hammer provided with a forwardly extending integral arm terminating in a laterally projecting finger, and a cocking lug slidably mounted in the lower end of the lump and carrying a forwardly extending pin in contact with the fore-end, said lug moving radially with and slidably on said lump with its rearward end

in the path of the finger, whereby the hammer is cocked by the movement of the latter as the barrels are broken, substantially as described.

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

EMIL FLUES.

Witnesses:

W. T. NORTON,  
ARTHUR BROWNING.