(No Model.)

5 Sheets—Sheet 1.

C. E. WHILDEN.

BREAKDOWN FIREARM.

No. 580,538. Patented Apr. 13, 1897.

Fig. 1.

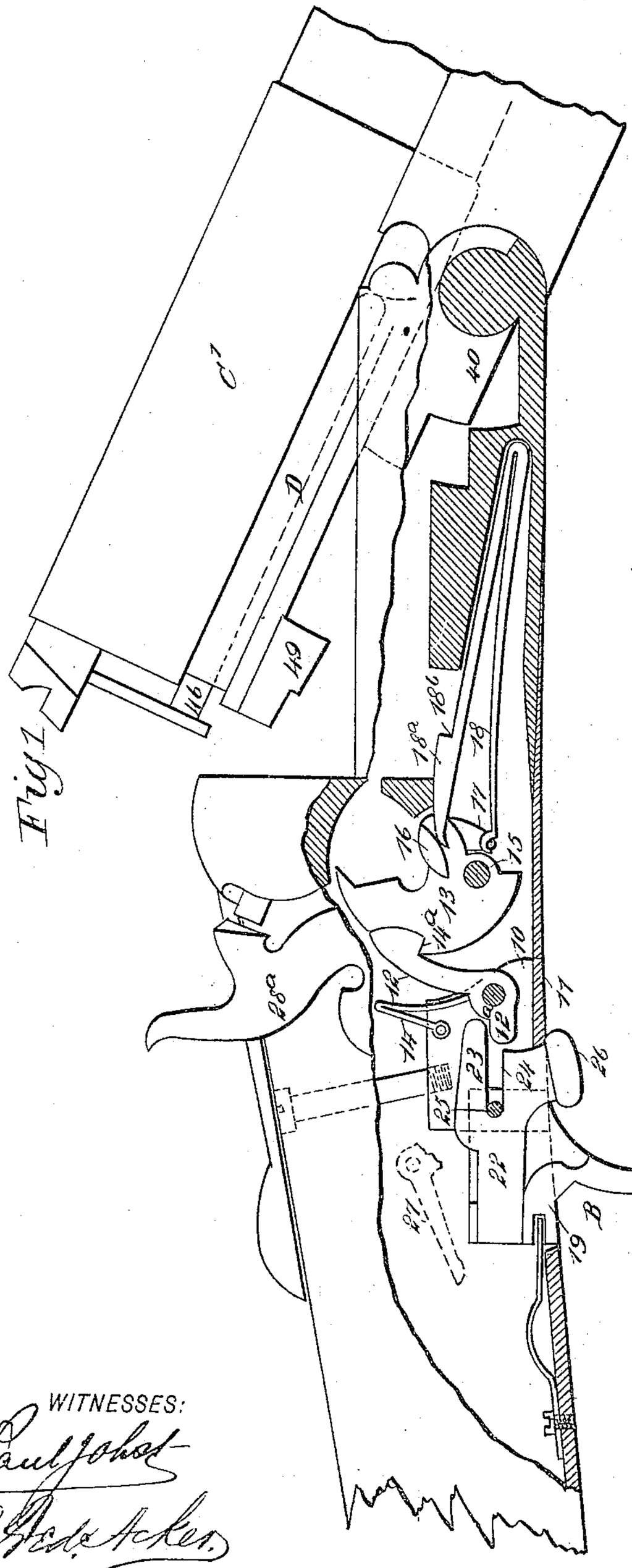
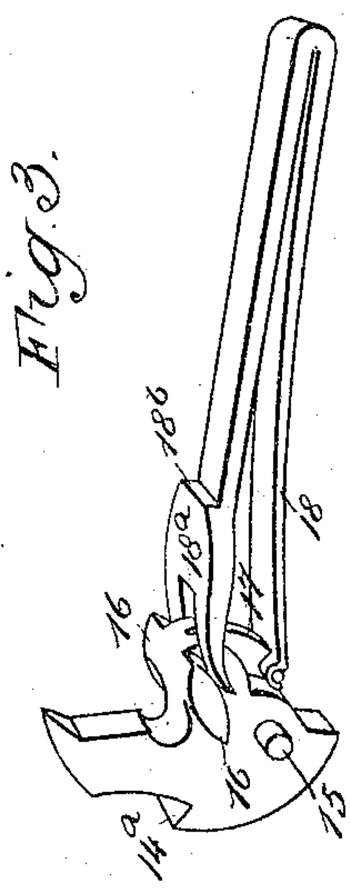


Fig. 3.



WITNESSES:

Paul Johnston

J. Stockton

INVENTOR

C. E. Whilden.

BY

Munn & Co

ATTORNEYS.

(No Model.)

5 Sheets—Sheet 2.

C. E. WHILDEN.

BREAKDOWN FIREARM.

No. 580,538. Patented Apr. 13, 1897.

Fig. 2.

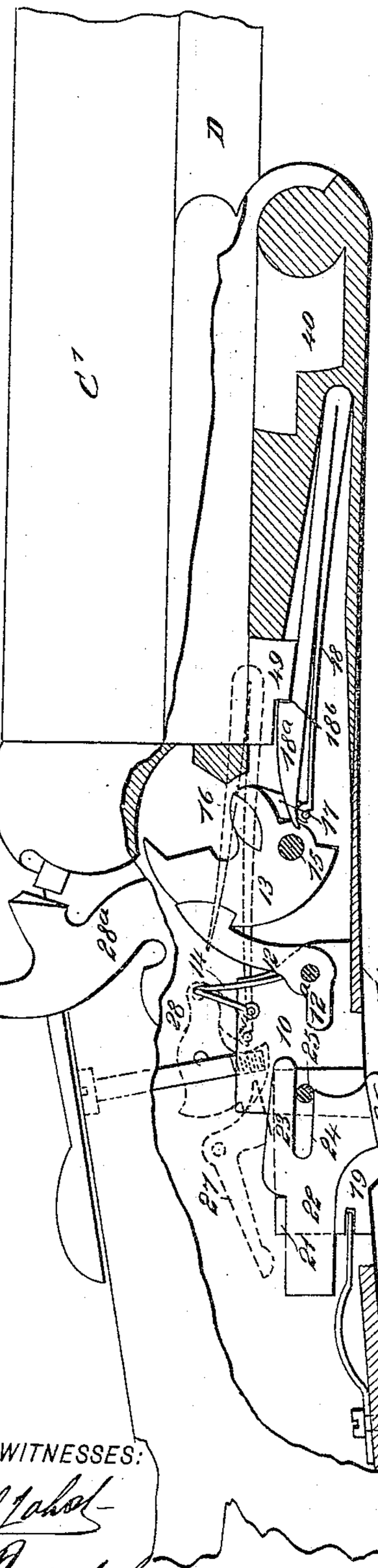


Fig. 5.

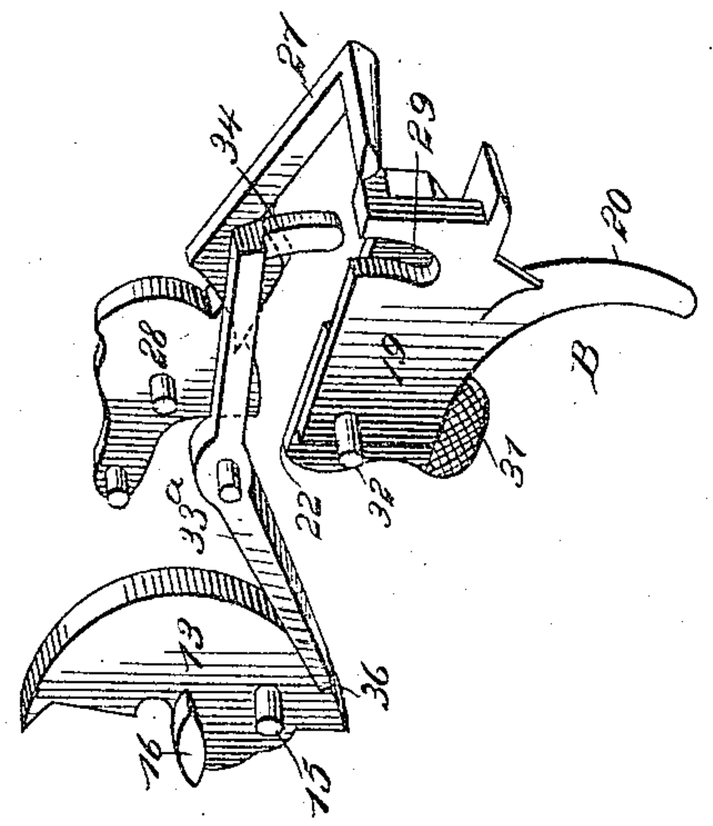
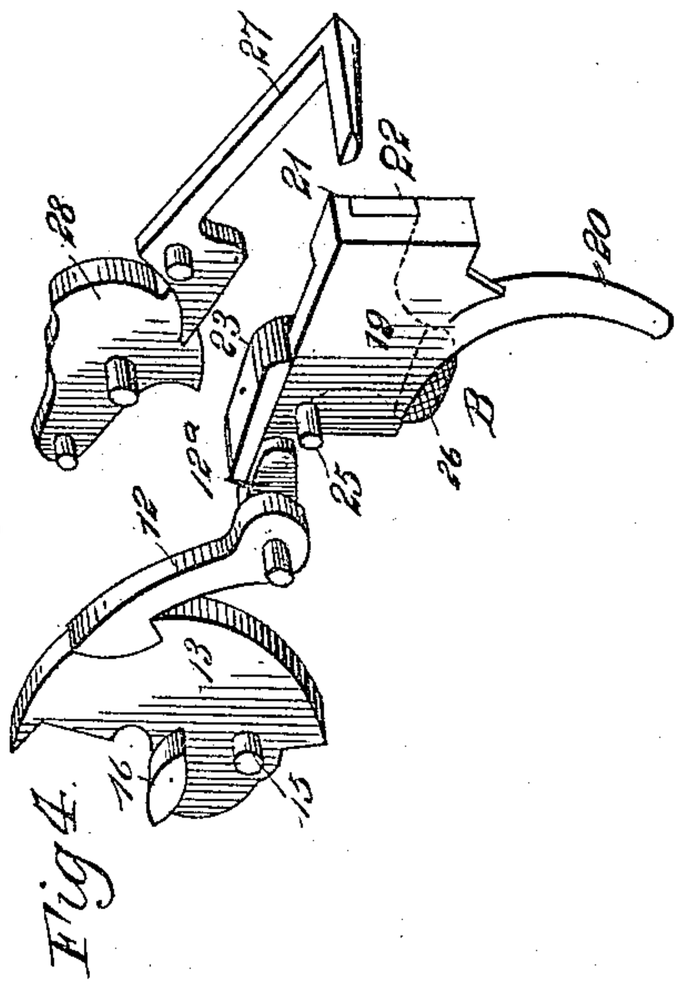


Fig. 4.



WITNESSES:

Paul Jahsel

J. Fredericks.

INVENTOR

C. E. Whilden

BY

Munn & Co

ATTORNEYS.

(No Model.)

5 Sheets—Sheet 3.

C. E. WHILDEN.

BREAKDOWN FIREARM.

No. 580,538. Patented Apr. 13, 1897.

Fig. 6.

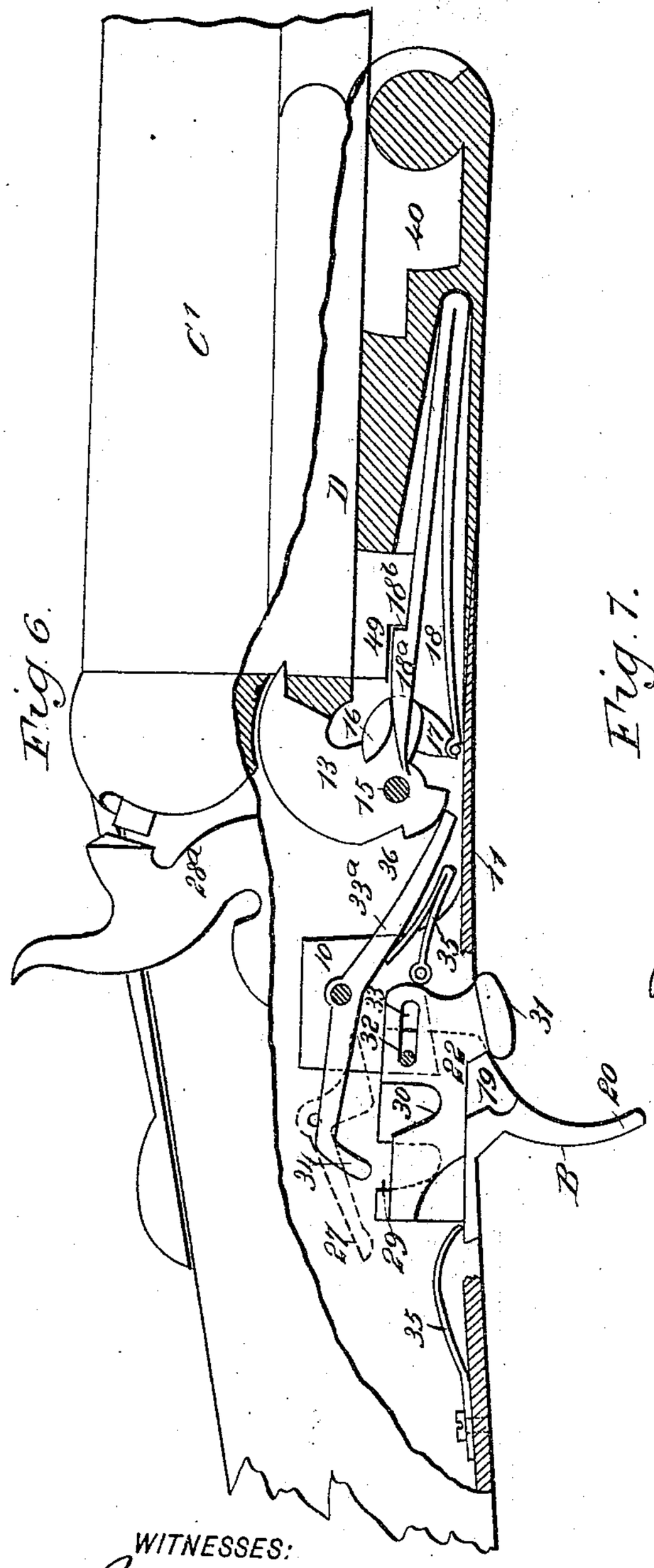
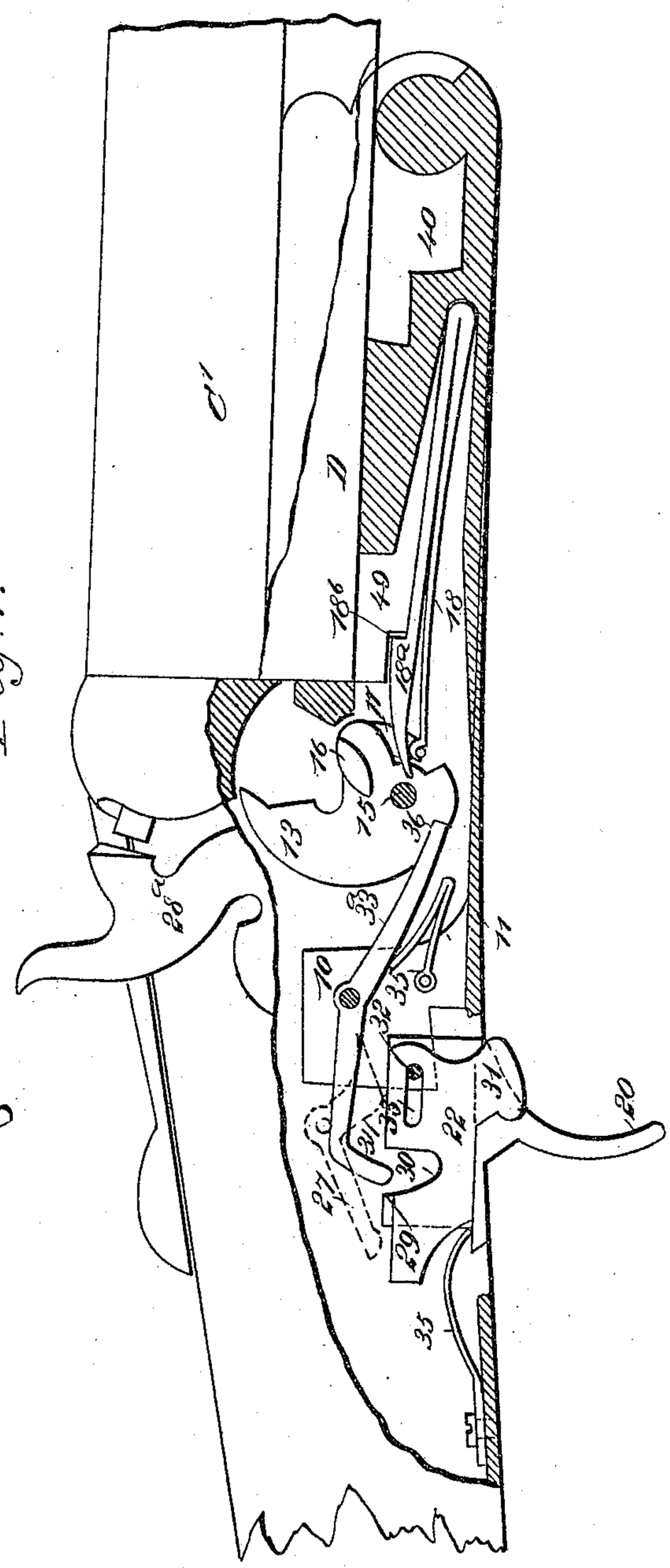


Fig. 7.



WITNESSES:

Paul Jabot

J. Fred. Acker.

INVENTOR

C. E. Whilden

BY

Munn & Co

ATTORNEYS.

(No Model.)

5 Sheets—Sheet 4.

C. E. WHILDEN.

BREAKDOWN FIREARM.

No. 580,538. Patented Apr. 13, 1897.

Fig. 10.

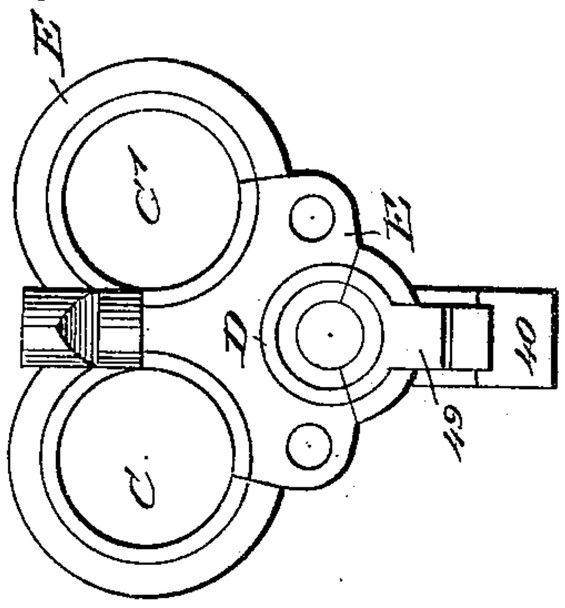


Fig. 12.

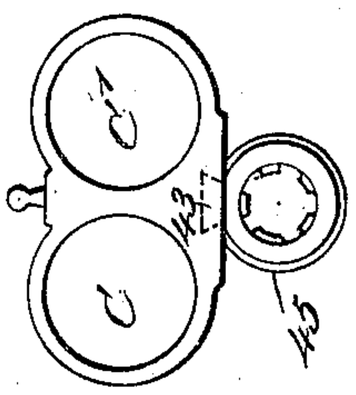


Fig. 8.

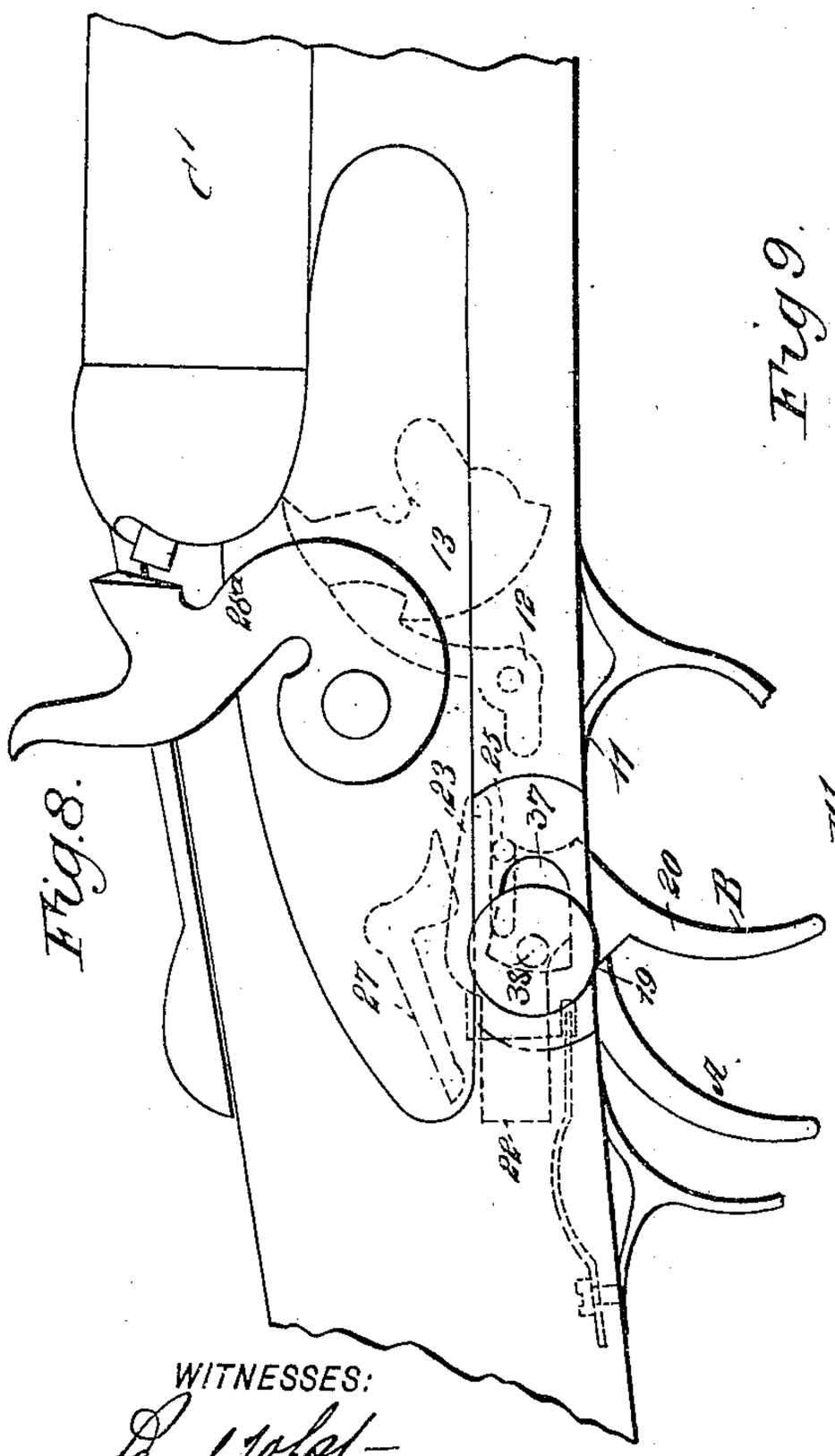


Fig. 9.

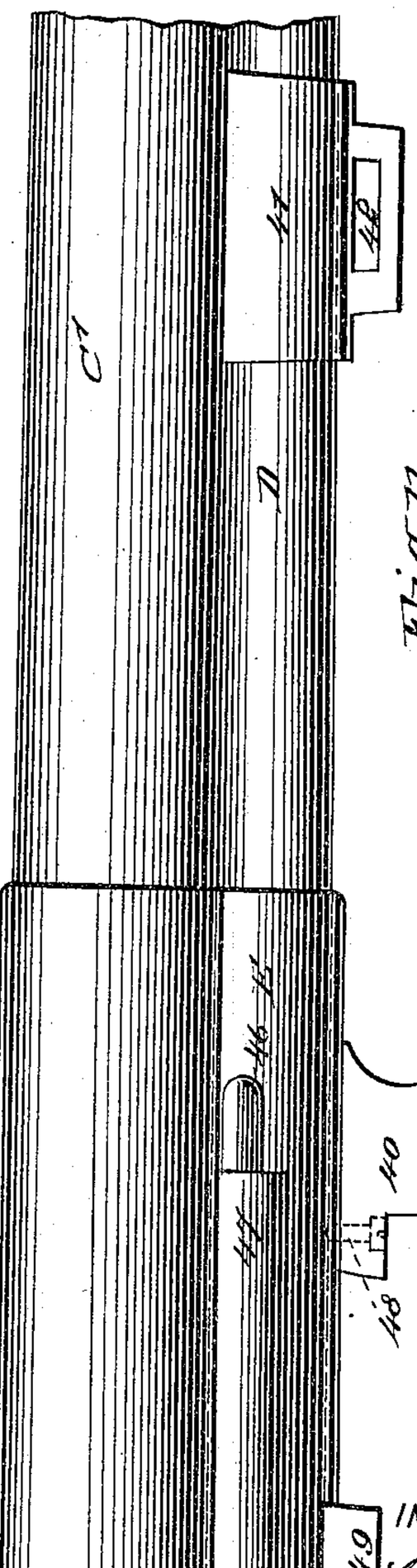


Fig. 11.

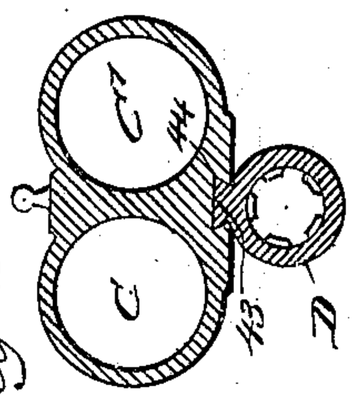


Fig. 13.

WITNESSES:

Paul Jobel

J. Fred. Acker

INVENTOR

C. E. Whilden

BY Munn & Co

ATTORNEYS.

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C. E. WHILDEN.

BREAKDOWN FIREARM.

No. 580,538. Patented Apr. 13, 1897.

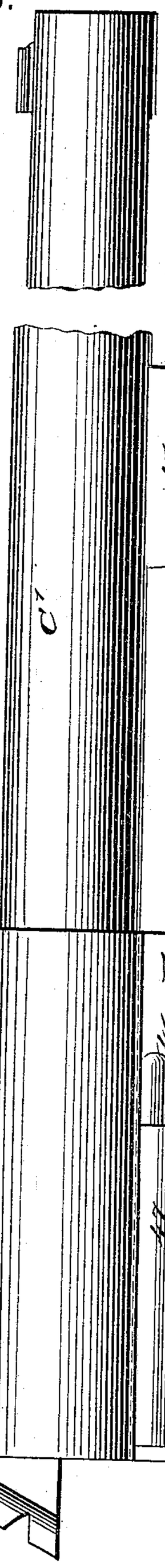

Fig. 13.

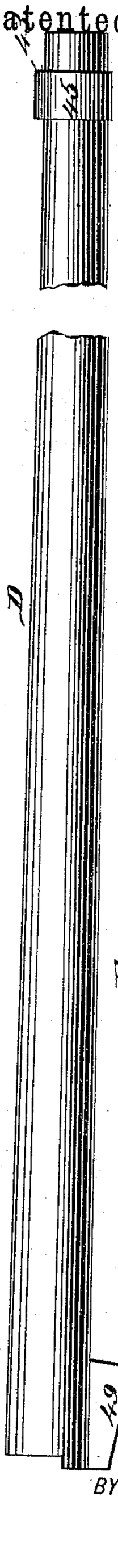

Fig. 14.

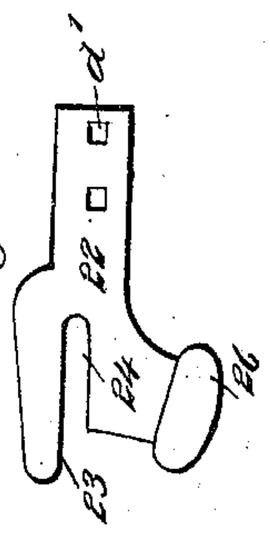

Fig. 16.

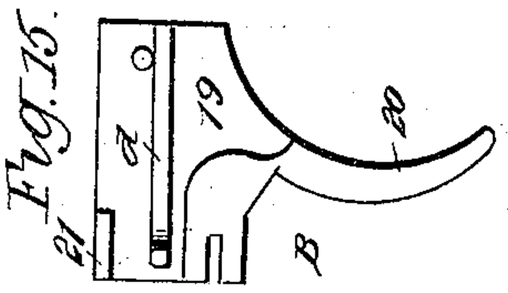

Fig. 15.

WITNESSES:

Paul Jahot

J. Fred. Acker.

INVENTOR

C. E. Whilden

BY

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES E. WHILDEN, OF CHARLESTON, SOUTH CAROLINA.

BREAKDOWN FIREARM.

SPECIFICATION forming part of Letters Patent No. 580,538, dated April 13, 1897.

Application filed March 2, 1895. Serial No. 540,302. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. WHILDEN, of Charleston, in the county of Charleston and State of South Carolina, have invented a new and useful Improvement in Firearms, of which the following is a full, clear, and exact description.

My invention relates to an improvement in firearms, and more particularly to that class of firearms known as "three-barrel" guns, usually provided with two shot-barrels and a rifle-barrel below and between them.

The objects of my invention are to provide a removable rifle-barrel capable of being placed in the same position as the rifle-barrel of the ordinary three-barrel gun coincident with the line of sight, and so place the rifle-barrel in connection with the shot-barrels that it can be attached firmly to a suitable support and in a simple and expeditious manner, and whereby when desired the rifle-barrel may be quickly removed, as, for example, when it is not needed and when it is desirable to lighten the gun, the removal of the said barrel permitting the use of many different calibers of rifle-barrel with the same stock.

A further object of the invention is to provide a cocking and firing mechanism for the rifle-hammer, located within the body of the gun, and to provide for an entirely novel form of trigger, the triggers being so constructed that but two are required for firing the three barrels; and another object of the invention is to so construct the triggers that they may be locked either in position to fire the rifle-barrel or fire one of the shotgun-barrels, it being impossible, when the trigger is fixed or adjusted, to fire other than the barrel intended.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a view of the lock portion of the gun, a portion of the stock and lock-plate being broken away, the barrels of the gun being in open position, or in a position to be loaded, said Fig. 1 likewise showing the right-hand trigger in position for firing the rifle-barrel, being locked with respect to the right-hand shot-barrel. Fig. 2 is a view similar to Fig. 1, illustrating the barrels closed or in firing position and the trigger locked with respect to the firing device of the rifle-barrel and in position for operating the hammer of the right-hand shot-barrel. Fig. 3 is a perspective view of the hammer of the rifle-barrel and the mainspring connected therewith. Fig. 4 is a perspective view of the improved trigger, illustrating its connection either with the hammer of the rifle or that of the right-hand shot-barrel of the gun. Fig. 5 is a view similar to Fig. 4, illustrating a slight modification in the construction of the trigger. Fig. 6 is a view of a portion of the gun, illustrating the application thereto of the modified form of trigger shown in Fig. 5, the trigger being in a position to fire the rifle-barrel. Fig. 7 is a view similar to Fig. 6, the trigger being in position for firing the right-hand shot-barrel. Fig. 8 is a side elevation of a portion of a gun, illustrating a slight modification in the lock or shifting mechanism. Fig. 9 is a side elevation of the barrels of the gun detached from the stock, illustrating both the rifle and the shot barrels connected, a portion of the forward end of the shot-barrels being in section. Fig. 10 is a rear elevation of the barrels shown in Fig. 9. Fig. 11 is a section taken substantially on the line 11 11 of Fig. 9. Fig. 12 is a front elevation of the barrels. Fig. 13 is a side elevation of the shot-barrels, the rifle-barrel being detached therefrom. Fig. 14 is a side elevation of the detached rifle-barrel; and Figs. 15 and 16 are detail views of the trigger, illustrating a lock-latch applied thereto.

In carrying out the invention a block 10 is erected upon the trigger-plate 11, and upon this plate the sear 12, operating in connection with the rifle-hammer 13, is fulcrumed, the said sear, as shown in Fig. 4, being provided with a foot-section 12^a out of the plane of its head. The head of the sear 12 is held by means of a spring 14 in engagement with a notch 14^a, produced in the back of the rifle-hammer 13, the said back being preferably of a segmental shape, whereby the

said back of the hammer may be termed its "tumbler-section."

The rifle-hammer 13 is pivoted at or near its bottom upon a pivot-pin 15, and the said hammer is located entirely within the lock-section of the gun, being inside the center of action, and it is fitted upon opposite sides of the lower portion of its forward face with preferably alining lugs or abutments 16 and with an arm 17, pivoted to the hammer, and upon the said arm 17 the rear end of a main spring 18 has bearing or is attached, while the head portion 18^a of the said spring is bifurcated and engages with the lugs 16 on the said hammer, as shown best in Fig. 3. The head 18^a of the spring is thicker than the remaining portion thereof, forming a shoulder 18^b.

The action of the spring 18, when relieved from downward pressure or tension, is in a direction to throw the hammer 13 to a cocked position or position ready to fire.

The left-hand or rear trigger A may be of the ordinary construction, but the right-hand trigger B is of an improved and peculiar construction, as shown in Figs. 1, 2, 4, and 5. This improved trigger consists of a plate or body-section 19, having integral with or attached to its lower edge a finger-piece 20, and in the right-hand side of the body-section, at what may be termed its "rear," a channel 21 is produced by enlarging or thickening this section of the body. The second section 22 of the trigger may be termed a "slide" or a "tripping" section, it having a sliding movement on the body, and it is adapted to lock the trigger in a predetermined position. This slide or tripping section at its rear end has guided movement in the rear channel 21 of the body of the trigger, while at the top of its forward portion it is provided with a lip 23, which extends over the upper edge of the body-section beyond its forward edge and is adapted for engagement with the heel 12^a of the rifle-sear 12, while immediately below this lip 23 a longitudinal slot 24 is made in the said slide or trip, receiving a pin 25, which serves to pivot the trigger in position within the frame, while the lower forward end of the said slide or trip is provided with a thumb-piece 26, which may be made in the nature of a button or otherwise formed.

The lip 23 of the trigger, when the slide-section 22 is carried forward, will extend over the heel of the rifle-sear, while the rear end of the said slide will be removed out of possible contact with the sear 27, controlling the hammer 28 of the right-hand shot-barrel of the gun, and when the slide is pushed rearward it will be out of possible engagement with the rifle-sear and be brought in engagement with the sear 27, of the shotgun-barrel operating on that sear only. Thus it will be locked in this position relative to the rifle-sear.

If the trigger is in the position shown in Figs. 1 and 4, it will be carried out of possible engagement with the shot-barrel sear 27, and when drawn backward its lip 23 will be depressed, drawing the sear 12 of the rifle-barrel away from engagement with the said hammer of said barrel, permitting the spring to act to carry the hammer to its firing position, and the trigger will be removed from engagement with the shotgun-sear, thus locking the shotgun-hammer safe. When the right-hand barrel of the shotgun is to be used, the slide-section 22 of the trigger is carried rearward, as shown in Fig. 2, the lip 23 being out of possible engagement with the rifle-sear, whereupon by manipulating the trigger B its rear end will be elevated and will engage with the shot-barrel sear 27 and permit the hammer 28 operated thereby to act.

In Figs. 5 and 6 I have illustrated a modified form of trigger B, in which the lip 23 is dispensed with, and in the body-plate 19 of the trigger a notch 29 is produced in its upper edge near the back, and the slide is provided with a like notch or recess 30, this notch being best shown in Fig. 6, capable of registering with the recess 29 in the body-plate of the trigger. The forward lower end of the slide is made to terminate, as in the other case, in a knob or button 31, and the said slide is guided on the body of the trigger by causing the pivot-pin 32 of the trigger proper to pass through a slot 33 in the plate and the rear end of the slide to move in a guideway at the rear of the body of the trigger. The form of the sear for the rifle under this construction of trigger slightly differs from that shown in connection with the form illustrated in Figs. 1 and 2. The rifle-sear 33^a is in this case provided with a foot or extension 34, located some distance at the rear of its pivot, being so placed that the said foot is capable of entering the recess 29 in the said body-plate of the trigger. A spring 35 is made to control the sear 33^a, as shown in Figs. 6 and 7, adapted to normally hold the said sear in engagement with the notch or shoulder 36, produced in the back of the rifle-hammer and nearer the bottom than the notch or recess 14^a, heretofore referred to. Under this modified form of trigger the slide 22 is capable of being carried to the rear of the body of the trigger in the same manner as the slide shown in Figs. 4 and 7, and when carried to this position if the trigger is manipulated the sear 27 for the shot-barrel will be manipulated and the slot or recess 30 in the slide will be brought into registry with the slot or recess 29 in the body of the trigger. Thus when the rear end of the trigger is raised to operate the sear 27 the heel 34 of the rifle-sear 33^a will enter the said slots and the said rifle-sear will not be acted upon or affected by the trigger. If, on the contrary, as shown in Fig. 6, the slide is carried in direction of the forward end of the firearm, the two recesses or slots 29 and 30 will be carried out of registry, and when the rear end of the trigger is elevated it will strike the foot

34 of the rifle-sear 33^a and disconnect said sear from engagement with its hammer, permitting the firing to take place. The movable slide 22 may be held from slipping from its forward or backward position in any approved manner—as, for instance, as shown in Figs. 15 and 16, in which a spring-catch *d* is secured at one end upon the inner face of the body 19 of the trigger B. This catch may be located either on top, bottom, or the middle of the grooved portion of the trigger, and is adapted to snap into two or more notches or recesses *d'* in the slide-section 22 of the trigger, or the spring-catch may be placed upon the slide and the notches or recesses be made in the body of the trigger, or the slide may be held in position by a spring-catch attached to the trigger plate or block snapping into notches in the slide. In any event the notches will be placed apart a distance corresponding to the distance the slide travels from its forward to its backward position.

As shown in Fig. 8, instead of operating the slide of the trigger from underneath the gun or at the trigger-plate it may be operated from the side. In this latter event a slot 37 is made in the side plate of the lock-section to receive a button 38, said button being provided with a shank which extends through the said slot 37 to an engagement with the slide 22, and I desire it to be understood that the button 38 may be of sufficient size to practically cover the opening 37 in whatever position the said button may be placed.

Thus it will be observed that through the medium of the two triggers three barrels may be readily manipulated, one trigger serving for firing one of the shotgun-barrels and the rifle-barrel, and the said trigger performing this dual function may be locked out of possible contact with the sear of the hammer it is intended the trigger shall avoid.

The barrel-section of the gun comprises three combined barrels—namely, two shotgun-barrels C and C' of the ordinary construction and a rifle-barrel D, located beneath the shotgun-barrels coincident with their line of sight. The rifle-barrel D is detachably mounted in the sleeve E, the said sleeve being attached to or formed integral with the under side of the shotgun-barrels at their breech, and the said sleeve serves as a support for the hinge-lug 40. The rifle-barrel D is slid through the sleeve E from the breech end, and said barrel is likewise made to pass through a thimble 41, secured in any approved manner to the bottom portions of the shot-barrels, which thimble is covered by the fore-stock when the barrels are in position thereon.

On the bottom of the thimble 41 a loop 42 or its equivalent is located, through which loop the bolt is adapted to pass to hold the fore-end to the barrels. The loop 42, instead of being shaped as in the drawings, may be shaped so as to catch and retain a spring-clip, or what is known as "patent" fore-ends in any of their different styles.

I do not claim as a portion of my invention the shape of the fore-end catch, but the attachment of the fore-end catch to the bottom of the thimble instead of directly to the bottom of the barrel.

Within about one-quarter of an inch from the muzzle of the upper half of the rifle-barrel a projection 43 is made, preferably of a dovetail character, the said projection being fitted from the rear into a correspondingly-shaped recess 44, made longitudinally in the center of the metal between the shot-barrels. When the muzzle of the rifle provided with the projection 43 is small enough to pass through the sleeve E and thimble 41, the projection will be attached firmly to the muzzle of the rifle-barrel; but when this portion of the barrel is too large to permit of such manipulation the projection is attached to a sleeve 45 and the forward end of the rifle-barrel will be made to enter the said sleeve and fit snugly thereto. This sleeve is separate from both rifle and shot barrels, so as to leave no unsightly projections on the shot-barrels when the rifle-barrel is removed.

An extractor 46 is located in an auxiliary sleeve 47 at each side of the main sleeve E. The said extractors are operated in any approved manner, as, for example, by means of projections on the inner, upper, and fore part of the breech-frame, just above the hinge-pin. A small set-screw 48 is employed to hold the rifle-barrel in position in the main sleeve, the said set-screw being made to enter a depression in the barrel. In this manner the rifle-barrel is prevented from slipping back. A lug 49 is formed on the bottom of the rifle-barrel at the breech, which keeps it from twisting around in the sleeve and also acts to compress the mainspring of the rifle-barrel lock, as shown in Fig. 2, since when the barrels are in position on the fore-stock or in position for firing the lug, which is made to pass downward through a suitable opening in the lock-section of the firing-arm, will engage with the top of the mainspring both forward and rearward of its shoulder 18^b. Thus it will be observed that the tension of this spring is exerted constantly in a downwardly and rearwardly direction on the rifle-hammer at this time, and as soon as the latter is disengaged from its sear the hammer will be forced into the breech of the rifle-barrel by said spring, and when the barrels are broken or carried to loading position, as shown in Fig. 1, the head of the spring, bearing against the abutments 16 on the rifle-hammer, will force the said hammer back to its cocked position by engagement with its sear.

The upper part of the rifle-sleeve E, with the hinge-lug 40 attached, can be either dovetailed or brazed to the bottom of the shot-barrels in the same manner as the lumps or lugs are attached in an ordinary double gun, or

the sleeve may consist of the sleeve proper, provided with a reinforce section E', as shown in Figs. 9 and 10, extending up above and completely around the breech of the gun-barrels, forming a guard around them much thicker at the bottom than at the top, which lower portion can be bored out to proper shape to receive the rifle-barrel and extractor after attachment to the breech of the shot-barrels, and this attachment may be made by either brazing or shrinking the sleeve on the shot-barrels, or both, as may be found most expedient.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In the construction of firearms, double shot-barrels provided with a socket at their breech end, a rifle-barrel removably secured in said socket, and a locking connection between the rifle-barrel and the bottom portion of the shot-barrels near their forward ends, as and for the purpose specified.

2. In the construction of firearms, the combination with double shot-barrels provided with a socket at their breech end and with a longitudinal dovetail recess at their muzzle end, of a rifle-barrel fitting in the said socket and provided with a dovetail projection fitting in the said recess, substantially as described.

3. In the construction of firearms, the combination with shot-barrels, of a removable rifle-barrel on the under side of the shot-barrels and provided with a depending lug, and a rifle-lock and forked double-armed mainspring with which the said lug engages to compress the same, substantially as described.

4. In the construction of firearms, the combination with shot-barrels, of a rifle-barrel detachably secured to the under side of the shot-barrels and provided with a depending shouldered lug and a rifle-lock and a double-armed mainspring having a shoulder near the end of one of its members, and with which member the lug of the rifle-barrel engages to compress the said spring, substantially as described.

5. In a firearm, the combination of a hammer located in the center of action and provided with abutments on opposite faces, and a mainspring having its lower member pivotally connected with the hammer and its upper member forked, the members of which project on opposite sides of the hammer below the abutments thereof, whereby when the spring is relieved of pressure the forked member of the spring will engage the abutments of the hammer and throw it into cocked position, substantially as described.

6. In a three-barrel firearm, the combination with the shot-barrels, a rifle-barrel, and the sear of one of the shot-barrels, of a hammer arranged in the center of action and adapted to fire the rifle-barrel, a spring controlling the said hammer, a sear engaging the hammer, and a trigger formed of a body-section and a tripping-section sliding on one side of the body-section so as to project beyond the rear end of the same and extend into the path of one of the sears when moved rearwardly, the said tripping-section extending into the path of the other sear when moved forwardly, substantially as described.

7. In a three-barrel firearm, the combination with the shot-barrels, a rifle-barrel, and the sear of one of the shot-barrels, of a hammer arranged in the center of action and adapted to fire the rifle-barrel, a sear engaging the hammer, and a trigger, consisting of a body-section having a longitudinal channel in one side, and a tripping-section sliding in the channel of the body-section so as to project beyond the rear end of the same and extend into the path of one of the sears when moved rearwardly, the said tripping-section being provided with a thumb-piece for manipulating it and extending into the path of the other sear when moved forwardly, substantially as described.

8. In a firearm, a trigger, comprising a body-section, and a tripping-section sliding on one side of the body-section so that its rear end will project beyond the end of the said body-section for engagement with one sear, when moved rearwardly, the said tripping-section being provided with a thumb-piece for manipulating it and adapted to extend into the path of the other sear, when moved forwardly, substantially as described.

9. In a firearm, a trigger, consisting of a body-section having a longitudinally-extending channel in one side and provided with laterally-projecting pivot-pins, and a tripping-section fitting in the channel of the body-section and provided with a longitudinal slot to receive one of the pivot-pins of the body-section, and at its forward end with a thumb-piece projecting below the said body-section, said tripping-section extending into the path of one sear when moved forwardly and having its rear end projecting beyond the rear end of the body-section for engagement with the other sear when moved rearwardly, substantially as herein shown and described.

10. In a three-barrel gun, a trigger comprising a body-section having a finger-piece and provided with a channel in one side, and a slide or tripping section fitted to slide in the channel of the body-section and provided with a lip at its forward end, said lip extending over the upper edge of the said body-section, and adapted to engage a rifle-lock sear, the rear end of the tripping-plate being adapted to engage the sear of a shotgun-lock, substantially as herein shown and described.

11. In a three-barrel gun, a trigger, comprising a body having a finger-piece and provided with a channel in one side and a pin projecting from each side whereby it is adapted to be pivoted, a sliding section mounted in the channel and provided at its forward end with a lip projecting over the upper edge of the body and with a slot to receive one of

the pins of the body, and means for locking the parts together, substantially as described.

12. In a three-barrel gun, the combination with the shot-barrels, a rifle-barrel on the under side of the shot-barrels, and the sear of one of the shot-barrels, of a hammer arranged within the center of action and adapted to fire the rifle-barrel, a spring controlling the hammer, a sear engaging the hammer, and a trigger formed of a pivoted body-section having a finger-piece, and a sliding section mounted on the body-section and provided with a lip at its forward end adapted to engage the rifle-lock sear, the rear end of the said sliding section being adapted to engage the shotgun-lock sear, substantially as described.

13. In a three-barrel gun, the combination with the shot-barrels, and a rifle-barrel on the under side of the shot-barrels, of a hammer arranged in the center of action and adapted to fire the rifle-barrel, a spring controlling the hammer, a sear engaging the hammer and provided with a lateral arm, a sear for one of the shotgun-locks provided with a lateral arm, and a trigger formed of a pivoted body having a finger-piece and provided with a channel in one side, and a sliding section mounted in the channel of the body and provided with a lip at its forward end and with a thumb-piece, the lip and rear end of the said sliding section being adapted to be moved to be alternately engaged by the arms of the sears of the rifle and shot barrel locks, substantially as described.

CHARLES E. WHILDEN.

Witnesses:
DUNCAN J. BAKER,
GEO. S. LEGARÉ.