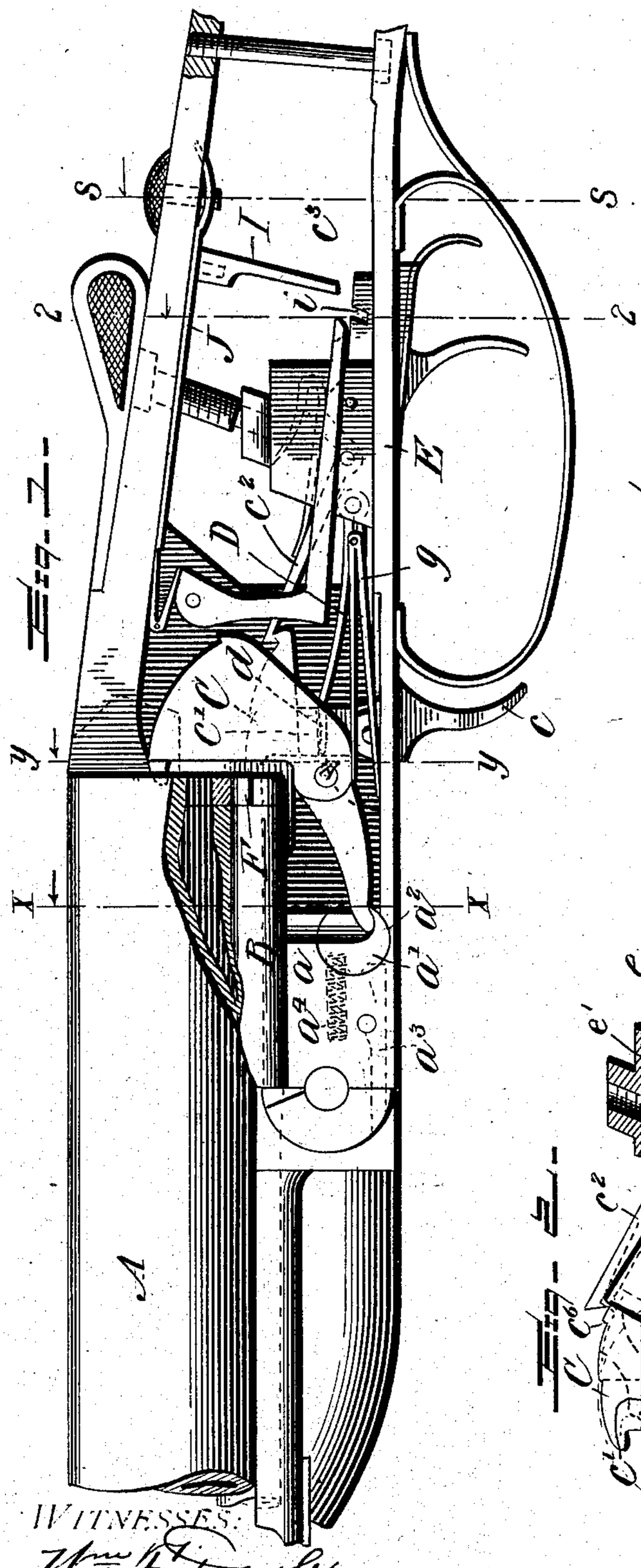
No. 753,492. PATENTED MAR. 1, 1904.

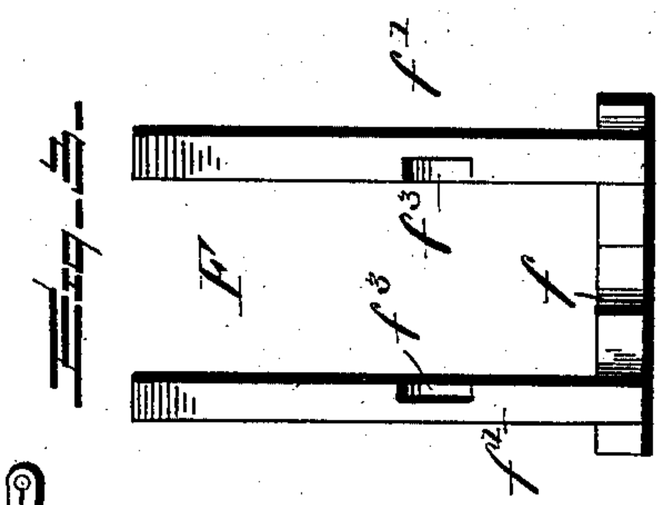
F. A. HOLLENBECK.

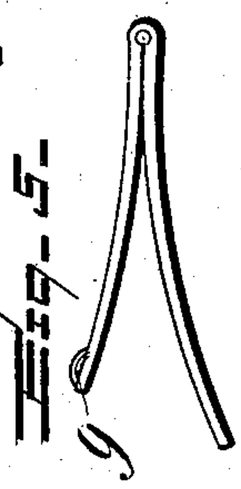
BREAKDOWN FIREARM.

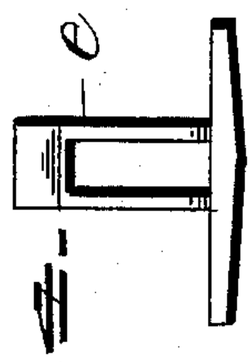
APPLICATION FILED MAY 28, 1901.

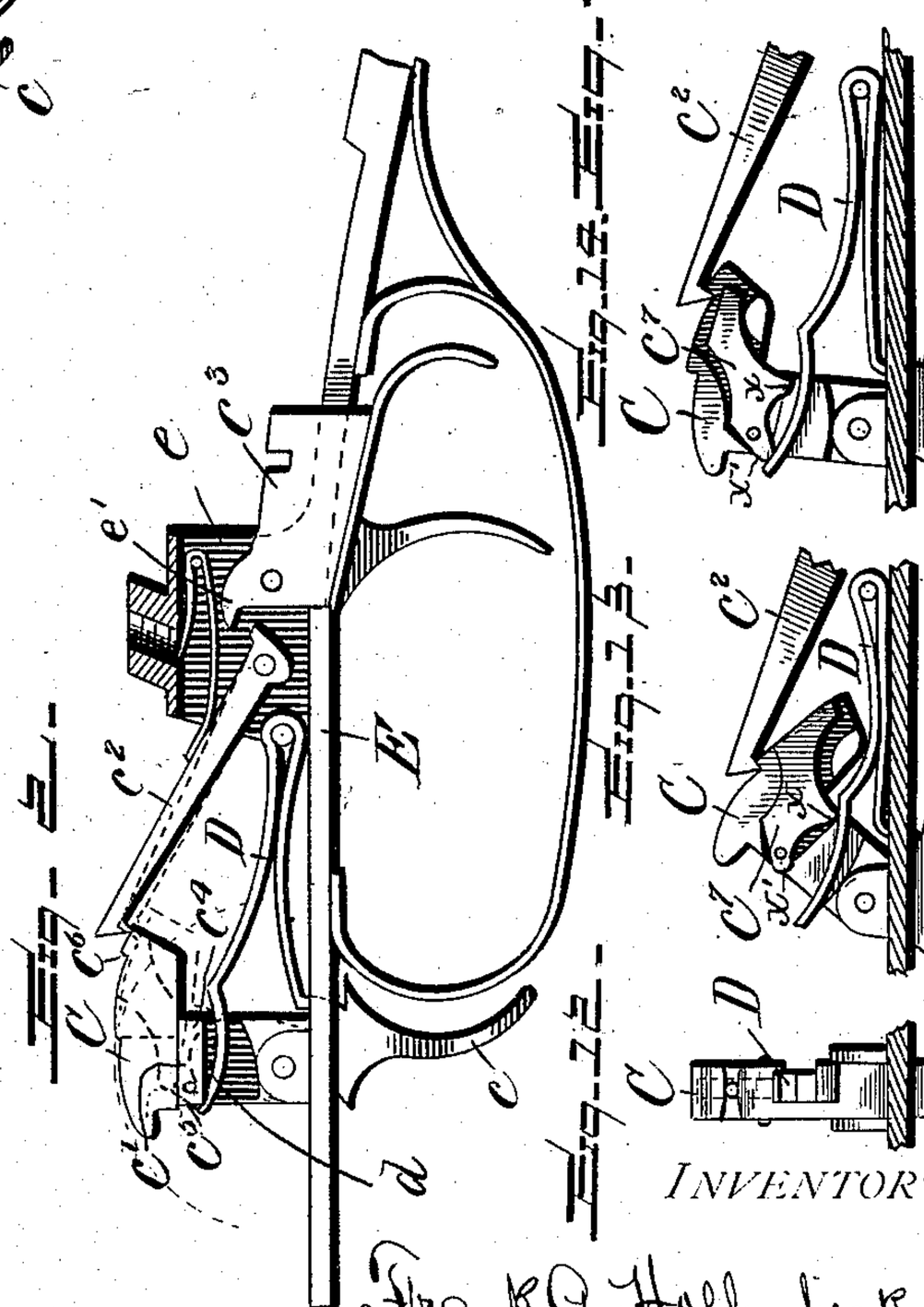
NO MODEL. 2 SHEETS—SHEET 1.











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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 10.

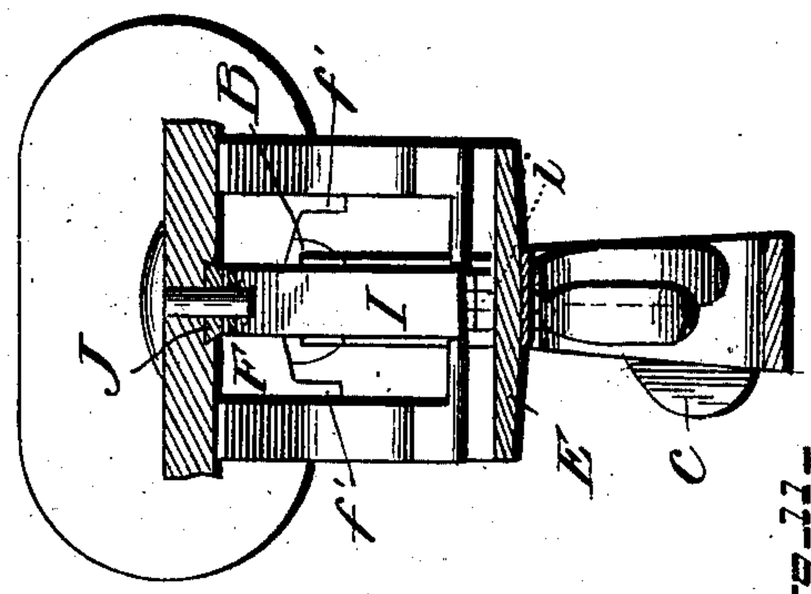


Fig. 9.

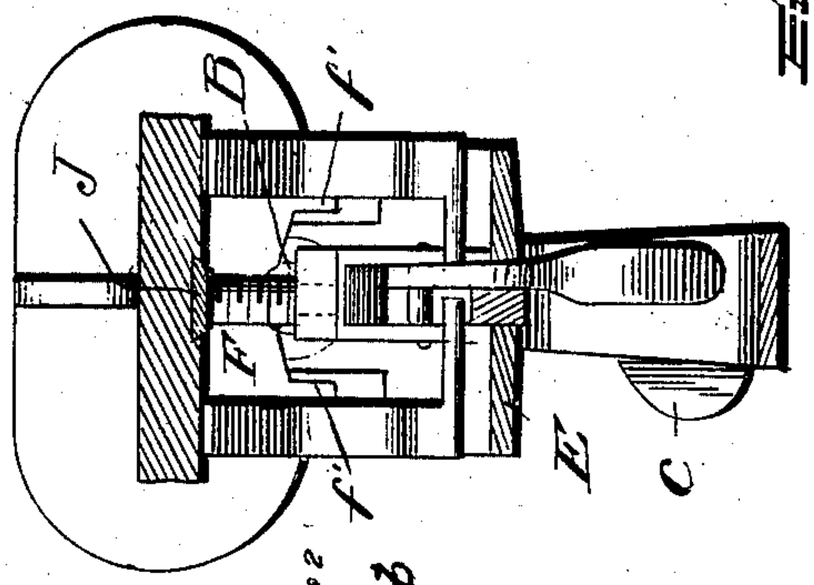


Fig. 11.

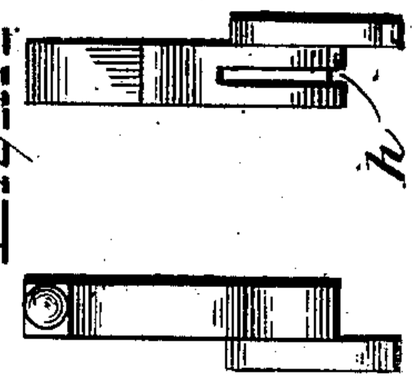


Fig. 8.

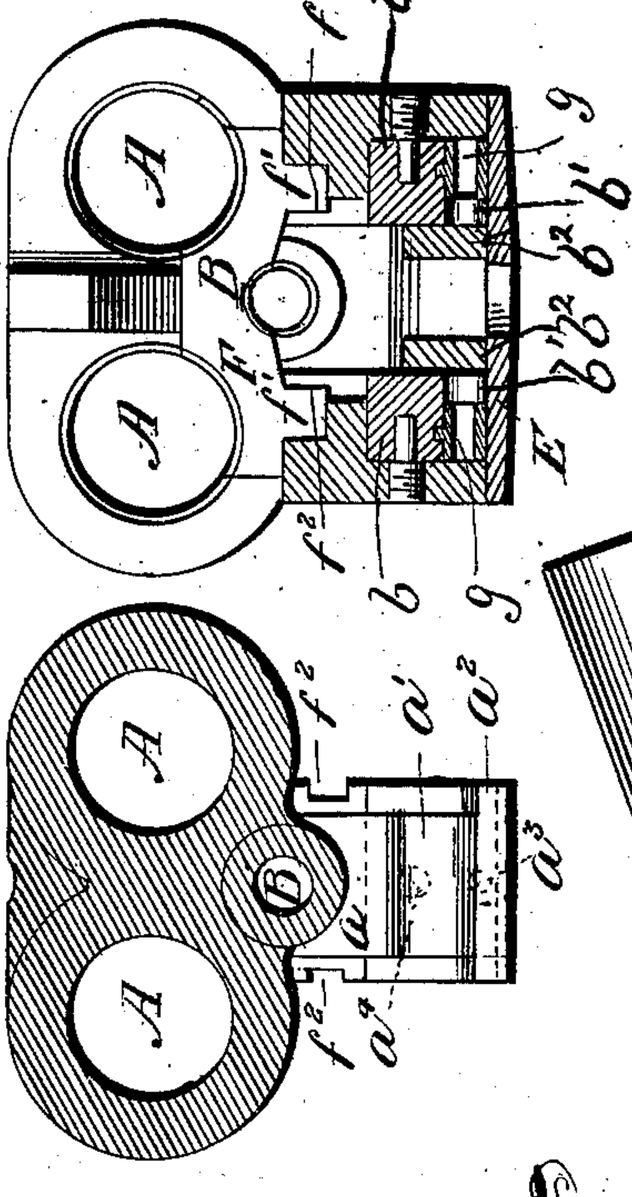
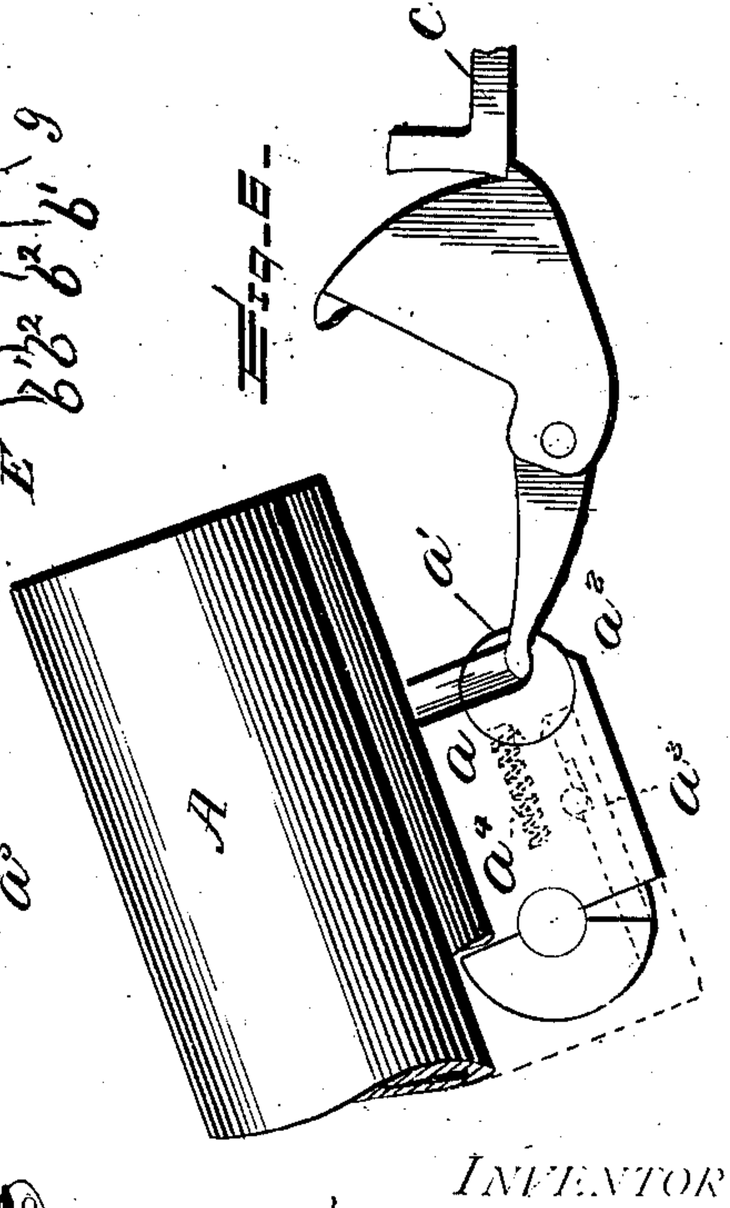


Fig. 7.

Fig. 5.



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No. 753,492. Patented March 1, 1904.

UNITED STATES PATENT OFFICE.

FRANK A. HOLLENBECK, OF WHEELING, WEST VIRGINIA.

BREAKDOWN FIREARM.

SPECIFICATION forming part of Letters Patent No. 753,492, dated March 1, 1904.

Application filed May 28, 1901. Serial No. 62,282. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. HOLLENBECK, a citizen of the United States, residing at Wheeling, in the county of Ohio and State of West Virginia, have invented certain new and useful Improvements in Breech-Loading Firearms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention is an improvement in breech-loading firearms; and it consists in certain novel features of construction and combination of parts whereby a three-barreled gun is secured which is effective in operation, the parts of which are easily assembled, and which is durable when in use.

The best form in which I have contemplated embodying my said invention is illustrated in the accompanying drawings, and said invention is disclosed in the following description and claims.

Referring to the drawings, Figure 1 is a side elevation of my improved gun with parts broken away to show the arrangement of the locks and devices coacting therewith. Fig. 2 is a side elevation of the third or rifle barrel lock. Fig. 3 is a plan view of the extractor. Fig. 4 is an end view of the trigger-plate lug. Fig. 5 is a side elevation of the mainspring of the shot-barrel locks. Fig. 6 is a side view of parts when the barrels are opened. Fig. 7 is a transverse section on line $x\,x$, Fig. 1. Fig. 8 is a transverse section on line $y\,y$, Fig. 1. Fig. 9 is a transverse section on line 2 2, Fig. 1. Fig. 10 is a transverse section on line $s\,s$, Fig. 1. Fig. 11 is a front and back view of the hammer of the shot-barrel lock. Fig. 12 is a front view of the rifle-hammer. Fig. 13 is a partial longitudinal view of the same and in cocked position. Fig. 14 is a like view in normal position or when at rest.

In the drawings, A indicates the shot-barrels, and B the third or rifle barrel lying beneath the two.

a is the barrel-lug.

In the making of three-barreled guns the barrels are ordinarily fitted or soldered together and the barrel-lug is brazed to the under side of the barrels. In constructing my gun as aforesaid, after the two shot-barrels are finshed and united, I braze the barrel-lug to the under side of the two barrels. I then bore an opening through the upper part of the barrel-lug or between the lug and the barrels of a size slightly less in diameter than the exterior diameter of the rifle-barrel. I then heat the barrel-lug to expand the same and pass the rifle-barrel through the opening therein to the position desired. The barrel-lug is then cooled and shrunk upon the rifle-barrel, securing it and holding it firmly in place. The forward part of the rifle-barrel is then secured to the other barrels in the usual manner. By this means the rifle-barrel is more firmly secured and at the same time can without much expense or trouble be removed by unsoldering the same and then heating the barrel-lug and removing the barrel therefrom.

In hammerless guns where the hammers are cocked by the barrel-lug in the act of opening the gun when the barrels are removed from the stock much trouble is experienced in putting the barrels again in position if the hammers or either of them should be found in the fired position. This I avoid by the following construction: In the rear end of the barrel-lug a cylindrical opening is made transversely of the same. This opening is not wholly within the lug, but cuts a portion of the rear face of the lug away. In this opening is mounted the cylinder a'. The ends of the cylinder a' and the barrel-lug above the cylinder are cut away, as shown, leaving the cocking-shoulders a^2 a^2 to receive the ends of the cocking-levers. The cylinder a' turns freely in the opening in the barrel-lug. Midway of its length the cylinder a' is provided with a shoulder, which is engaged by a rod a^3, sliding freely in an opening extending longitudinally of the barrel-lug. This rod engages the fore end of the gun and is of such length that when the fore end is in place it holds the cylinder in the proper position to enable the cocking-shoulders a^2 a^2 to raise the cocking-arms and cock the hammers for the shot-barrels when the gun is opened. The rod a^3 engages the cylinder a' below the axis of the same. Above the axis the cylinder is provided with another

shoulder, and a spring a^4, operatively mounted in an opening in the barrel-lug, engages therewith. When it is desired to remove the barrels from the stock, the fore end is removed, and the spring a^4 immediately so far revolves the cylinder a' as to withdraw the cocking-shoulders from under the cocking-arms. When the parts are again assembled, the barrels are placed in position and the gun closed. The fore end is then secured in position, thereby forcing the rod a^3 rearwardly, turning the cylinder a' to bring the cocking-shoulders under the forward ends of the cocking-arms.

The hammers are pivoted in recesses in the frame of the gun, the cocking-arms extending through slots into the opening which receives the barrel-lug. The construction of the parts is most clearly shown in Fig. 8, in which $b\ b$ are the hubs of the hammers, $b'\ b'$ the cocking-arms, and $b^2\ b^2$ the inner walls of the recess in which the hammers and cocking-arms are pivoted. The hammer C for the third or rifle barrel is pivoted upon the trigger-plate E and has a cocking-arm or trigger c extending below the said plate. This trigger extends laterally beyond the trigger-guard to enable it to be conveniently operated, as shown in Figs. 9 and 10. This hammer is controlled by the spring D and the sear c^2 and the said sear is released to fire the gun by one of the shot-barrel triggers. The hammer C is caused to rebound after firing by reason of the peculiar construction of the end of the spring and its manner of engaging the hammer. The free end of the arm of the spring D, which engages with the hammer, is provided with the curved portion d. This part of the spring engages a shoulder c^4 of the hammer, which is either straight on its under side or of a less curvature than that of the part d of the spring. When the hammer is in the cocked position, the end c^4 of the shoulder bears upon the curved portion d of the spring. On releasing the hammer it is thrown forward until it strikes the cartridge in the rifle-barrel. In this position the forward end c^5 of the shoulder c' is alone engaged by the spring. In this position the force of the spring tends to move the hammer backward, and this force, with the natural rebound of the hammer, causes the latter to move backward until the end c^4 of the shoulder nearly engages with the spring. The hammer is provided with a notch c^6, which is caught by the sear c^2 on the rebound of the hammer and holds the latter securely in this position.

The gun is provided with an extractor F, which on opening the gun starts all the cartridges or shells which may be in the three barrels, so that such shells as may be desired can be removed. The extractor-plate f is provided with two guide rods or bars $f'\ f'$, and these guide-rods are mounted and slide in ways $f^2\ f^2$ at each side of the barrel-lug. In order to give room for the extreme ends of the cocking-levers, each of the guide-bars is provided with a recess f^3. These recesses are of sufficient length to permit the extractor to move rearwardly to extract the cartridges or shells when the cocking-arms are in the cocked position.

In constructing the springs and the hammers I provide the spring with a narrow upwardly-extending flange g, as shown in Fig. 5. The hammer is also provided with a slot or deep groove h to receive this flange. This construction prevents any sidewise movement of the spring upon the hammer and aids in providing a lubricant for the bearing-surfaces of the hammer and spring. Oil dropped upon the spring-flange g is retained within the groove h and is gradually fed to the point of bearing between the spring and hammer. While this construction is shown as applied to a single spring, it may be applied to all.

The lug e of the trigger-plate is recessed, as best shown in Fig. 4, and the sear for the rifle-hammer is pivoted within it, the said sear preferably being at that point of the width of the recess. The triggers for the shot-barrels are also pivoted in this recess, and one of them is provided with a nose or extension e', extending above the upwardly-projecting rearward end of the rifle-sear c^2. I propose to make the right or left hand shot-barrel trigger with the nose e' to suit the wishes of purchasers—that is, in the manufacture of the gun there will be triggers for both shot-barrels of both forms of construction with and without the nose e', in order that they may be placed in the gun as the purchaser may desire. As the rifle-sear is the full width of the recess in the lug e, either trigger when provided with the nose e' will release the sear. The upper or outer face of the head of the hammer is eccentric to the axis of the hammer, the true circle being shown in the drawings by the dotted line x. Thus it will be seen that when in its cocked position the forward end of the sear will be lower than when in the fired or at-rest position. It will also be seen that the rearward end of the sear is very short as compared with the forward or hammer-engaging end, so that a very slight movement of the trigger will release the rifle-hammer. When in the at-rest position—that is, when the sear engages the notch c^6 by reason of the eccentricity of the upper face of the hammer—the forward end of the sear is raised and the rearward end depressed. The nose e' projects but a little way forward of the pivot of the trigger and will move a much less distance when the shot-barrel is fired than the portion acting upon the shot-barrel sear. The lowering of the rearward end of the rifle-sear is of such an amount that the movement of the trigger to fire the shot-barrel will only bring the nose e' in contact with or close proximity to the sear c^2 without moving it, while the act of cocking the rifle-hammer raises the rear-

ward end of the sear close up beneath the nose e', so that a slight movement of the trigger will fire the barrel. The eccentricity of the head of the rifle-hammer C would under ordinary conditions prevent the firing of the rifle-barrel, as the sear c^2 being but slightly raised to withdraw it from the firing-notch as the hammer moves forward the sear would engage the notch c^6 and hold the hammer in its normal or neutral position. In order that this may be avoided, the hammer is provided with a recess in which is pivoted the fly c^7. This fly has two points of bearing x x', which are closely related to the ends c^4 c^5 of the shoulder c'. The point x' when the fly is in the position shown in Fig. 13 extends slightly below the end c^5 of the shoulder c', and the point x extends slightly below the end c^4 of the shoulder c' when the hammer and fly are in the position shown in Fig. 14. The point x' being forward of the point of pivoting of the fly c^7, the pressure of the spring D against it serves to throw the rear end of the fly below the upper surface of the hammer, in which position the sear c^2 can engage the notch c^6. On the other hand, when the hammer is forced backward in the act of cocking the hammer the point x is brought in contact with the spring and the upper end of the fly is forced upward. The upper end of the fly when in this position conforms to the general curvature of the upper face of the hammer, and as it is not provided with a notch corresponding to the notch c^6 so long as it is held in this position it prevents the sear from engaging said notch in the hammer. The fly c^7 is held in the position shown in Fig. 13 by the pressure of the spring D so long as the spring acts to throw the hammer forward, which forces the forward end of the sear upward to the plane of the highest part of the hammer. When the hammer has reached the point in its forward movement that the end c^4 of the shoulder c' leaves, the sear will be bearing upon the fly in close proximity to the notch c^6; but the movement of the hammer is at this moment so swift that the fly cannot be depressed and the sear engage the notch, and the hammer therefore completes its forward movement. The contact of the spring D with the point x' of the fly causes the upper end of the latter to instantly drop, and on the rebound of the hammer the pressure of the spring and the friction of the two parts retain the fly in this position until the sear engages the notch c^6. In this position the point x of the fly will lightly engage the spring, but not with sufficient force to dislodge the sear, in which position the parts will remain until the hammer is again cocked to fire the rifle-barrel. It is to be further noted that the leverage of the rifle-sear is the reverse of the leverage of the sears for the shot-barrels. In other words, the leverage of the rifle-sear is such that an extremely small movement of the trigger releases the hammer, while a very considerable movement of the trigger is required to effect the release of the shot-barrel hammer.

The gun is provided with an automatic safety locking device acting in much the same manner as those now widely in use. I have shown this locking effected by the arm I, secured to the safety-slide J. (See Fig. 1.) This arm is secured to the slide by providing the upper end of the arm with a screw-threaded socket, and this is screwed to the stud j on the plate J after the latter has been secured in its proper position and before the trigger-plate is put in place. This I find to be of considerable importance in assembling the parts of the gun. The arm I extends to near the upper edges of the triggers, a sufficient space being provided between the two to permit of the rifle being fired by a pull on the trigger sufficient to bring the trigger against the arm I. The arm I, however, secures the shot-barrels from premature discharge, as it prevents a movement of either trigger sufficient to release the hammers of the shot-barrels.

The operation of all parts of the gun embodying my improvements will be understood without further description.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a double-barreled hammerless gun, of a third barrel located beneath the two barrels and a rebounding hammer for said third barrel having a part connected therewith extending beyond the gun-frame for cocking the same by hand, substantially as described.

2. In a hammerless gun, the combination with the barrel-lug, of a part revolubly mounted therein provided with cocking-shoulders and means for holding said cocking-shoulders in operative position, substantially as described.

3. In a hammerless gun, the combination with the barrel-lug, of the cylinder provided with cocking-shoulders revolubly mounted in said lug, and means for holding said cylinder in operative position, substantially as described.

4. In a hammerless gun, the combination with the barrel-lug, of the cylinder provided with cocking-shoulders revolubly mounted in said lug, a spring for turning said cylinder to throw said cocking-shoulders out of operative position, and means for holding said shoulder in operative position against the force of said spring, substantially as described.

5. In a hammerless gun, the combination with the barrel-lug, of the cylinder provided with cocking-shoulders revolubly mounted in said lug, a spring tending to turn said cylinder to bring the said shoulders out of operative position, and the sliding rod engaging the cylinder and fore end to hold the said shoulders in operative position against the force of said spring, substantially as described.

6. In a gun-lock, the combination with the hammer, of an actuating-spring provided with a narrow lug extending longitudinally of the spring, the part engaged by said spring being slotted or grooved to receive said lug, substantially as described.

7. In a multiple-barrel gun, the combination with a single trigger and two sears operated thereby, one having a leverage requiring a short movement of the trigger, and the other a long movement, of a hammer combined with the said short-movement sear provided with an eccentric notched portion, whereby the hammer when in the fired position holds its sear away from the trigger, substantially as described.

8. In a multiple-barrel firearm, the combition with a single trigger, of the sears for the hammer, of two barrels and a safety device, a space being provided between the trigger and safety device and one of the sears being in close relation to the trigger, whereby one of the sears is actuated in the act of bringing the trigger against the safety device, substantially as described.

9. In a multiple-barrel firearm, the combination with two barrels, of two hammers therefor, a sear for each hammer, said sears having different leverages on both sides of their pivotal points, the sear having a short trigger-engaging arm, also having said arm lying in close proximity to the said trigger, a safety device having a space between it and said trigger whereby one of said sears may be actuated by the act of bringing the trigger into contact with the safety device, substantially as described.

10. In a gun-lock, the combination with the hammer provided with notches, of the sear for engaging said notches, the fly and means for actuating said fly to close one of said notches on the forward movement of the hammer, substantially as described.

11. In a gun-lock, the combination with the hammer notched as described, the sear for engaging said notches, the fly, and the spring for actuating said hammer and fly, substantially as described.

12. In a gun-lock, the combination with the hammer provided with the eccentric portion notched as described, of the sear for engaging said notches and the fly for closing one of said notches, substantially as described.

13. In a gun-lock, the combination with the hammer having an eccentric portion as described, of the sear for engaging said notches, the fly pivoted to said hammer and the spring for actuating said fly and hammer, substantially as described.

14. In a gun-lock, the combination with the hammer provided with an eccentric portion, having a retaining-notch and a firing-notch, of its engaging-sear and the trigger for actuating said sear to release said hammer, and means preventing the said sear from engaging the retaining-notch when released from the firing-notch, substantially as described.

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

FRANK A. HOLLENBECK.

Witnesses:
G. O. SMITH,
V. K. SMITH.