

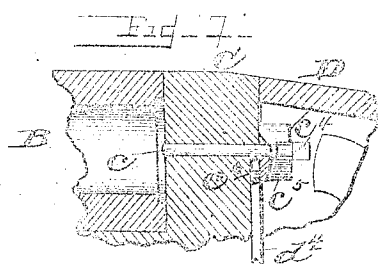
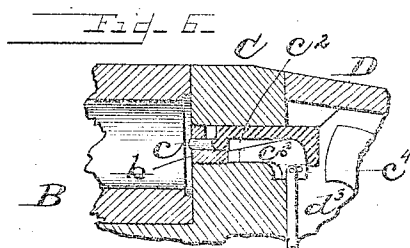
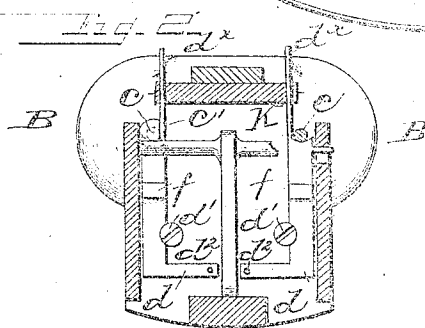
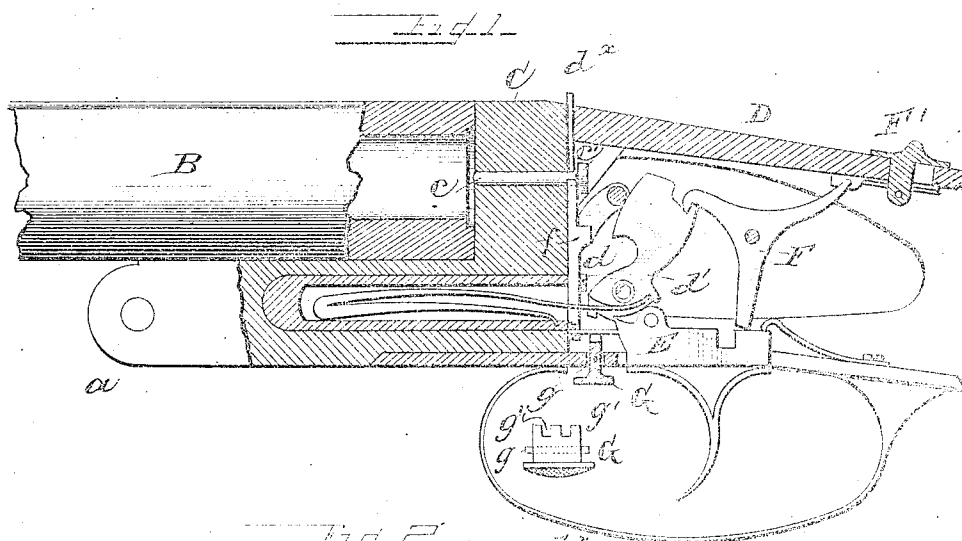
No Model.)

2 Sheets—Sheet 1.

F. A. HOLLENBECK.
LOCK FOR FIRE ARMS.

No. 461,182.

Patented Oct. 13, 1891.



Witnesses

J. A. Taubenschmitt.
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Inventor

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By his Attorneys
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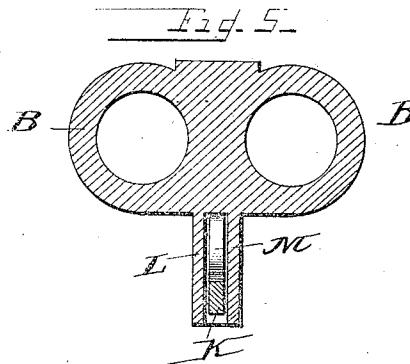
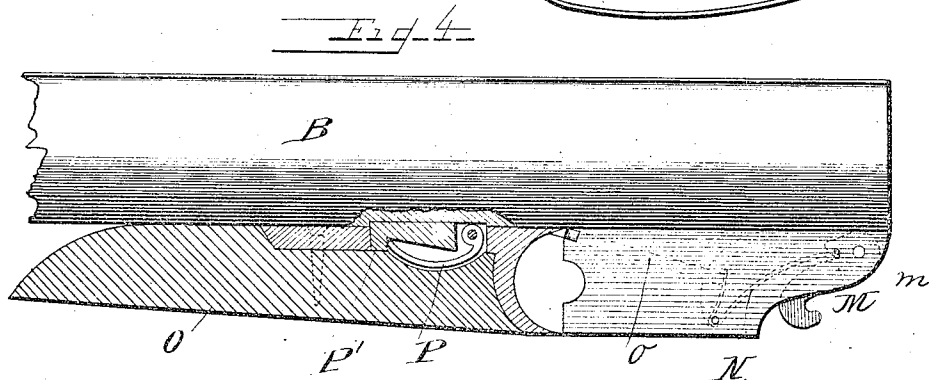
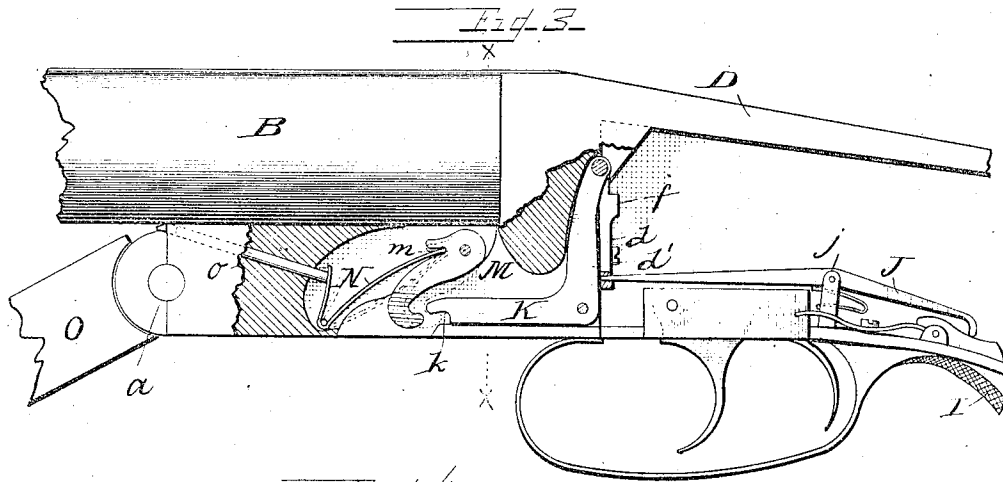
(No Model.)

2 Sheets—Sheet 2.

F. A. HOLLENBECK.
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Witnesses

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J. D. Kungberg

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UNITED STATES PATENT OFFICE.

FRANK A. HOLLENBECK, OF BATAVIA, NEW YORK, ASSIGNOR TO THE
BAKEL GUN AND FORGING COMPANY, OF SAME PLACE.

LOOK FOR FIRE-ARMS.

SPECIFICATION forming part of Letters Patent No. 461,182, dated October 13, 1891.

Application filed January 15, 1891. Serial No. 377,829. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. HOLLENBECK, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, have invented certain new and useful Improvements in Fire-Arms; 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 invention relates to fire-arms, and is an improvement in that class of fire-arms known as "hammerless guns."

It consists, mainly, of certain improved combinations of parts for locking the firing pin or pins against forward movement, whereby the accidental release of the concealed hammers from shock or by reason of parts becoming worn with use is prevented from discharging the gun, and accidents from such cause are thus prevented, and it also consists in an improved means for connecting the cocking-lever and the barrels of the gun and in some other features of construction.

In the accompanying drawings I have illustrated the best modes in which I have contemplated embodying my invention, and said invention is disclosed in the following specification and claims.

Referring to the said drawings, Figure 1 is a partial sectional view of the barrel and lock of a gun, showing my improvements embodied therein. Fig. 2 is a transverse sectional view through the lock, the hammer and its connected devices being removed for the sake of clearness. Fig. 3 is a partial sectional view showing a different mode of operating the safety device and the mode of connecting the barrels and cocking-lever. Fig. 4 is a sectional view of the fore end. Fig. 5 is a transverse sectional view on line *x x*, Fig. 3. Figs. 6 and 7 are views of modified constructions.

In the figures above described I have shown a portion of a double-barreled breech-loading fire-arm having a break-joint at *a*, of any usual or preferred construction. *B B* are the barrels. *C* is the breech-block, and *D* the stock portion, of the gun. In the breech-block are movably mounted the firing-pins *e e*, each

of which is provided with the enlarged head *c'*. Each of these pins is preferably slightly longer than the thickness of the breech-block, and a slide *d*, located at the rear of the breech-block in a vertical position, has a part of its upper end extending between the head of the pin and the breech-block. The relative arrangement of these parts is such that when the head of the pin *c* is forced against the slide *d* the pin will be locked and held out of contact with the fulminate of the cartridge. The slides *d d* are guided in any suitable manner against the breech-block, so as to be capable of the necessary movement downward to withdraw them from beneath the heads of the firing-pins. In this instance I have shown each slide as lying with the side in contact with the wall of the lock-recess in the stock and held and guided on the other by the screw *d'*. The upper end or part thereof of the slides is preferably made to conform to the shape of the head *c'*, as shown. The lower ends of the slides *d* are operatively connected with the triggers of the gun, so that the movement of the trigger to release the hammer or other impelling device for the firing-pin withdraws the slide *d* from under the head *c'* of the pin. This may be accomplished in many ways. I have shown the lower ends of these slides as extending inwardly and provided with an opening *d''* to receive an arm *e*, extending from the trigger forward of its pivot. The spring *e'* of the trigger serves to keep the slide normally in an elevated position.

The trigger and its spring may otherwise be of any preferred constructions, and the hammer and its connections may be of any appropriate form.

The operation of these devices will be at once apparent. The spring connected with the trigger holds the slide normally under the head of the firing-pin and locks it against forward movement, and, notwithstanding the fact that the firing-pin remains constantly in range of its hammer or other impelling device, in case of an accidental forward movement of said hammer the gun will not be discharged, inasmuch as the force of the blow will be received by the slide *d*, and the firing-pin will not be moved thereby. As soon, however, as

the trigger is pulled to fire the gun, the movement of the same will withdraw the slide *d* before releasing the hammer, and the latter will impel the firing-pin forward against the fulminate of the cartridge, as is usual. As soon as the trigger is released, the spring will move the slide *d* up against the head *c'* of the pin, where it will remain until the firing-pin is forced back by the opening of the breech of the gun, when the spring will at the same time that the hammer is cocked force the end of the slide again beneath the head of the firing-pin, and thus lock the pin against forward movement and secure the gun against accidental discharge when again loaded.

If found convenient, a spring may be made to operate directly upon the slide *d* instead of upon the trigger, and the same results will be secured.

This construction, acting automatically without the intervention of manual power on the part of the user, I prefer to term the "automatic safety or locking device."

I have in this instance shown the hammer and trigger with certain peculiarities of construction to co-operate with other devices, and these features can be applied to the form of such devices which is selected for the lock of the fire-arms. These features constitute a manual stop or safety device which holds the parts absolutely from movement.

Below the extensions *e* of the triggers *E*, I place the slide *G*, which moves in a guiding recess and is supported in position by the pin *g*, on which the slide *G* moves. The upper edge or end of the slide *G* is provided with notches *g' g'*, and they are so arranged that when the slide is moved in one direction to the full extent of its movement the notches *g' g'* come beneath the extensions *ee* of the triggers, and the triggers can then be moved and the gun fired; but when the slide is moved to its full extent in the opposite direction the projecting parts of the slide or safety device come beneath the extensions *ee* and hold the triggers from all movement.

The automatic safety device serves to prevent the accidental discharge of the gun when in use between the time of loading and discharging the gun. When, however, the user desires to transport the gun from one place to another, the slide *G* is brought into operation by moving it by hand, so as to bring the elevated portion beneath the extensions, and the parts of the lock are then held against all possibility of movement until released by the reverse movement of the slide.

The three-armed lever *F* and slide *F'* also constitute another manual safety device whose operation will be readily understood; but such device forms no part of the invention claimed therein, as it is fully described and claimed in my patent, No. 446,166.

I prefer to give the hammer a face of considerable extent, as shown, and to promote the slide *d* with the projection *f*. This pro-

jection is so located that when the slide is in its highest position, if the hammer should be thrown forward without depressing the trigger, the lower part of the operative face of the hammer would come in contact with said projection and the hammer be arrested before reaching a position in which it would engage the firing-pin. Thus two devices are provided, either of which would prevent the accidental releasing of the hammer or hammers from actuating the firing-pin.

In Fig. 3 I have shown another method of operating the slide *d*. In this modification a part of the hand-grasp is slotted, and a spring-lever *I* is pivoted therein, as has been done heretofore. A lever *J* is pivoted at some suitable point, as at *j*, and has its forward end engaging the aperture *d'* in the slide *d* and its rear end in contact with the lever *I*. A spring *j'* is provided to hold the lever *J* in contact with the lever *I* and thus keep the forward end of the lever *J* and the slide *d* in an elevated position except when the pressure is applied by the hand of the user to the lever *I*. The actuating device is in both of these cases a lever, and the operations are substantially the same, except that one is automatically operated in the act of firing and the other is not.

In Fig. 6 I have shown a modification of the construction of automatic safety devices. In this figure the recess in the breech-block is considerably enlarged, and a bush *b* is inserted in the forward end of this recess, said bush having an aperture for the forward end of firing-pin, which is of small size. The rear end of the firing-pin is enlarged to fit loosely within the recess in the breech-block, and this portion of the pin is provided with a slot *c'*, in which is pivoted the bell-crank lever *c'* for locking the pin. The rear end of this lever has a horizontal slot *c'*, which is engaged by a pin projecting from the slide *d'*, which is in turn connected with the trigger in the same manner as the slide *d* in the construction first described. The spring of the trigger tends to keep the forwardly-extending arm of the lever *c'* in the position shown in Fig. 6, in which position it engages with an inwardly-projecting portion of the brush *b* and locks the pin. Should the hammer be thrown forward by accident, the lever *c'* would receive the force of the blow and hold the pin from being impelled against the cartridge. When, however, the trigger is pressed backward to fire the gun, the slide *d'* will elevate the forward end of the lever above the projection of the bush engaged thereby, and the firing-pin will then be at liberty to be impelled by the hammer in the usual manner.

In Fig. 7 the firing-pin is made a little longer than in the other instances and is provided with a projection *c'*, extending at one or both sides of the pin. Between this projection *c'* and the breech-lock a collar *c'* is loosely mounted on the pin. The side of the

collar adjacent to the projection c^4 is provided with a recess adapted to receive that projection when turned into alignment therewith. A pin c^5 at one side of the collar is engaged by the slide d^4 , connected as in the other constructions with the trigger. The spring of the trigger normally holds the recess in the collar c^2 out of alignment with the projection c^4 , and thus locks it, so that when the hammer is thrown forward the collar intercepts the force of the blow and prevents the discharge of the gun; but when the trigger is pressed in the act of firing the collar is turned until its recess is brought into alignment with the projection c^4 , as shown in Fig. 7, in which position the pin c is free to be driven forward by the hammer to discharge the gun in the usual way. When the breech of the gun is opened, the pin c is forced back, and the spring of the trigger turns the collar, so that its recess is out of alignment with the projections c^4 , and the pin will be again locked and held against movement unless the trigger is again pressed in the act of firing.

The devices which I employ to connect the cocking-lever and the barrels of the gun are shown in Figs. 3, 4, and 5. The cocking-lever K is pivoted in a slot in the breech-block and extends to the rear of the same to engage the hammers F . The barrels are provided on the under side with a rigid lug L , which is slotted vertically, as shown in Figs. 3 and 5, and the forward end of the cocking-lever is provided with a hook k to engage with the hooked end of link M , pivoted in the slot in the lug L . On the front side of this hook M is a recess m , which receives the end of the longer arm of the spring N . This arm of the spring is made of such length that it normally presses against the bottom of the recesses m and tends to throw the hook M into the position shown in full lines in Fig. 3. The shorter end of the spring N is engaged by the rod or pin o , which is mounted to slide in an aperture in the lug L forward of the slot in which the spring N and hook M are placed. This rod or pin extends forward in an upwardly-inclined direction to a point just beneath the barrels, where it is in position to be engaged and forced backward by the fore end O when that device is secured in its proper position. When this has been effected, the spring N is caused to take a position approximately that shown in dotted lines in Fig. 3, causing the outer end of the long arm of the spring to press downwardly and rearwardly upon the hooked link, causing it to engage with the hook on the front end of the cocking-lever. When it is desired to remove the barrels and the fore end O is removed preparatory thereto, the rod or pin o is released, and the spring N and the hook M resume the position shown in full lines, thereby releasing the barrels from engagement with the cocking-lever.

The means which I employ for holding the fore-end in place is the spring P , secured to

the fore-end and engaging with the notch p in the lug P' , secured to the barrels, all in a well-known way. I provide the pin or rod o with a T-shaped head, which is beveled, as shown in Fig. 4, for a function in connection with the fore-end retaining devices just described. When the barrels are separated from the stock, it is desirable in packing the gun in its case to have the fore-end retained in position on the barrels. The retaining device and the rod or pin o , with its beveled T-head, and the spring N enable this to be done, as by placing the rear end of the fore-end upon the inclined T-head or rod o and then placing the spring P in engagement with the lug P' the pressure of the spring N forces the rod forward against the under side of the rear portion of the fore-end with sufficient force to hold the fore end in place upon the barrels.

In order to provide indicators which shall enable the user of the gun to see at any moment if the automatic safety device is working, so as to secure the results desired, I may provide the slides d with the extensions d^x , which extend upward to the exterior of the gun through proper openings in rear of the breech-block. When this construction is employed, the heads of the pins C are cut away on the side adjacent said extensions, so that the pin can be forced forward the proper distance to effect the discharge of the gun. While I have shown this construction as applied to only one form of my invention, it is to be understood that it may be applied to all the forms shown, if desired.

Instead of extending to the top of the breech-block, the slide might be provided with a projection extending through the side of the locking recess, as shown at the right of Fig. 2.

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

1. In a fire-arm, the combination, with the breech-block, of the firing-pin movably mounted therein and a movable device for locking said pin against forward movement, substantially as described.

2. In a fire-arm, the combination, with the breech-block, of the firing-pin movably mounted therein, a movable device for locking said pin against forward movement, and a lever extending to the outside of the stock, said lever and locking device being operatively connected, substantially as described.

3. In a fire-arm, the combination, with the breech-block and the firing-pin located movably therein, of a movable device interposed between a portion of the firing-pin and a portion of the breech-block to lock the firing-pin against forward movement, and a lever extending to the outside of the stock and operatively connected with the locking device, substantially as described.

4. In a fire-arm, the combination, with the breech-block and the firing-pin movably located therein, of an automatic safety device

consisting of a movable part interposed between a portion of the firing-pin and a portion of the breech-block to lock the firing-pin against forward movement and operatively connected with the trigger for movement therewith in the act of firing, substantially as described.

5. In a fire-arm, the combination, with the breech-block and the firing-pin movably located therein, of an automatic safety device for holding the firing-pin out of operative relation with the fulminate of the cartridge, consisting of a movable part located between a portion of the firing-pin and the front face of the breech-block, said movable part being connected with the trigger for movement therewith in the act of firing, substantially as described.

6. In a fire-arm, the combination, with the breech-block and firing-pin movably located therein, of an automatic safety device consisting of a movable part normally located between a part of the firing-pin and a portion of the breech-block and connected with the trigger for movement therewith in the act of firing, substantially as described.

7. In a fire-arm, the combination, with the breech-block and the firing-pin movably located therein, having a part extending over a portion of the breech-block adjacent to said pin, of a movable part normally located between such part of the pin and the breech-block and connected with the trigger, whereby said movable part is withdrawn from between the pin and breech-block in the act of firing, substantially as described.

8. In a fire-arm, the combination, with the breech-block and a firing-pin movably located therein, having a part extending over a part of the breech-block adjacent thereto, of the slide normally extending between such part of the firing-pin and breech-block, and a lever operatively connected with said slide and extending to the outside of the stock, whereby said lever can be operated by hand to remove the slide in the act of firing, substantially as described.

9. In a fire-arm, the combination, with the breech-block and the headed firing-pin, of the slide extending between the head of said pin and the breech-block and the trigger operatively connected with said slide, substantially as described.

10. In a fire-arm, the combination, with the breech-block and the firing-pin located movably therein, of an automatic safety device consisting of a slide interposed between the firing-pin and breech-block, having a projection lying in the path of the impelling devices, and the trigger operatively connected with said slide, substantially as described.

11. In a fire-arm, the combination, with the breech-block and a firing-pin movably mounted therein, of an automatic safety device for said firing-pin, connected for operation with the trigger, and a safety device adapted to be

operated by hand for preventing all movement of the trigger and automatic safety device, substantially as described.

12. In a fire-arm, the combination, with the trigger, of a slide mounted to move transversely of the stock, having the notched edge adjacent to said trigger, whereby said trigger can be positively held against all movement and be released when desired, substantially as described.

13. In a breech-loading fire-arm, the combination, with the pivoted barrels and the cocking-lever, of the hooked link, the pin, the fore-end engaging said pin, and the two-armed lever having one arm engaging said link and the other engaging the said pin, substantially as described.

14. In a breech-loading fire-arm, the combination, with the pivoted barrels and cocking-lever, of the hooked link having a recess therein, the two-armed spring having its longer arm engaging the bottom of the said recess, the pin engaging the short arm of said spring, and the fore-end engaging said pin, substantially as described.

15. In the fire-arm, the combination, with the pin movably mounted in the barrel-lug, having the beveled forward end, of a spring operating therewith, the fore-end, and the retaining-spring therefor, substantially as described.

16. In a fire-arm, the combination, with the barrels, of the link and spring, the pin movably mounted in the barrel-lug, having the beveled forward end, the fore-end, and the retaining-spring therefor, substantially as described.

17. In a fire-arm, the combination, with the barrels, of the link, the spring, the pin movably mounted in the barrel-lug, having at its forward end a T-shaped head beveled on its upper side, the fore-end, and the retaining-spring therefor, substantially as described.

18. In a fire-arm, the combination, with the breech-block, of a firing-pin movably mounted therein, an automatic safety device therefor, and an indicator connected with said safety device, substantially as described.

19. In a fire-arm, the combination, with the breech-block, of a firing-pin movably mounted in the breech-block, a movable part connected with the trigger for controlling the operation of the firing-pin, and an indicator connected with said movable part, substantially as described.

20. In a fire-arm, the combination, with the breech-block, of a firing-pin movably mounted therein, a slide connected with the trigger controlling the operation of the firing-pin, said slide being provided with a projection extending to the outside of the gunstock, substantially as described.

21. In a breech-loading fire-arm, the combination, with the breech-block and the headed firing-pin, of the slide provided with an indicator extending to the outside of the gun-

stock, a part of said slide extending between
the head of said pin and the breech-block, the
hammer, the trigger operatively connected
with said slide, the barrel, the cocking-lever,
5 and devices operatively connecting said cock-
ing-lever and barrel, substantially as de-
scribed.

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

FRANK A. HOLLENBECK.

Witnesses:

L. P. WHITAKER,
G. A. PREVOST.