

No. 842,287.

PATENTED JAN. 29, 1907.

G. E. WITHERELL.

FIREARM.

APPLICATION FILED MAY 24, 1902.

Fig. 1

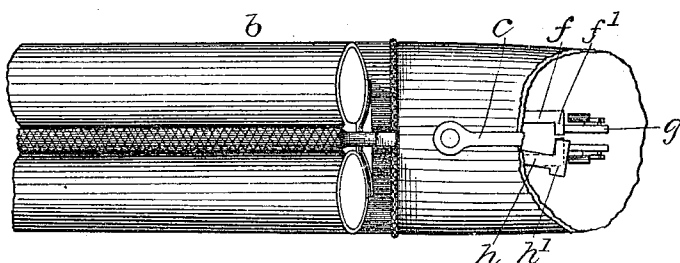


Fig. 2

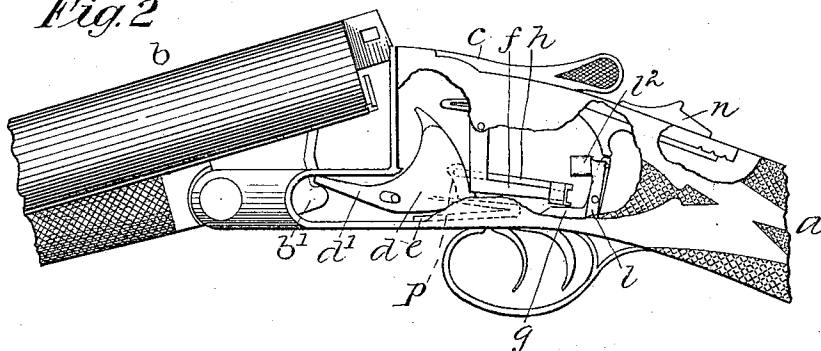


Fig. 3

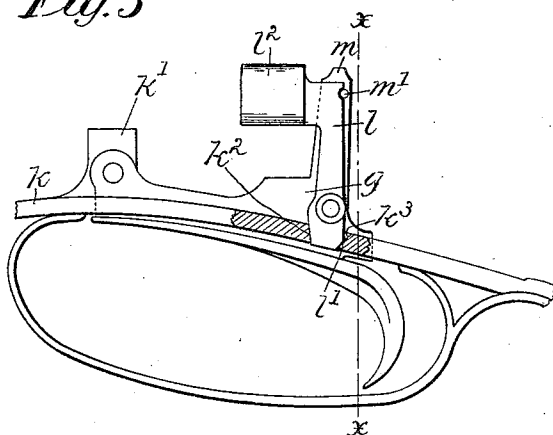
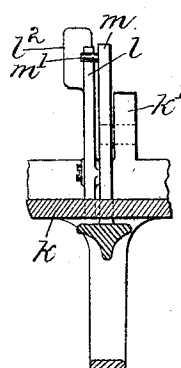


Fig. 4



Witnesses:

Erina P. Coffin
Harmon B. Freeman

Inventor:

George E. Witherell.
by Jenkins & Barker.
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE E. WITHERELL, OF HARTFORD, CONNECTICUT, ASSIGNOR TO REMINGTON ARMS COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

FIREARM.

No. 842,287.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed May 24, 1902. Serial No. 108,828.

To all whom it may concern:

Be it known that I, GEORGE E. WITHERELL, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Firearms, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates more particularly to that class of firearms in which a plural number of sets of firing mechanisms are employed, and more especially to that class in which a single device, as a trigger, may be employed for operating a number of firing mechanisms; and the object of my invention is to provide a device of this class that shall prevent the unintentional operation of a set of firing mechanisms and the consequent discharge of the piece.

To this end my invention consists in details of construction of several of the parts making up the device as a whole and in the combination of the parts hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a top or plan view of a double-barreled shotgun with parts broken away to show construction and with my improvement attached thereto. Fig. 2 is a view in side elevation of the same with parts broken away to show construction. Fig. 3 is a detail side view, on an enlarged scale, of a single trigger bearing my improved attachment. Fig. 4 is a detail view in section through the device on line *xx* of Fig. 3.

In the accompanying drawings the letter *a* denotes the stock of a gun, and *b* the barrel, pivoted thereto in the usual manner. Locking means are provided on the barrel and stock for holding the former in its closed position, the parts being unlocked, as by means of a thumb-lever *c*, pivoted on the stock.

A hammer *d* is pivoted in the stock and has a forward-projecting cocking-arm *d'*, adapted to engage a cocking-lug *b'* on the barrel and a firing-pin at its upper end. The hammer is actuated in one direction by the spring *e*, and a sear *f* is pivoted in the frame and provided with a sear-tail *f'*, located at its rear end in position to be operated by the trigger *g*.

The above description refers to a single

set of firing mechanism, and a duplicate thereof is appurtenant to each barrel, with the exception that the sear-tails project in opposite directions—that is, toward each other. The mechanism described is old and well known and a detailed description is deemed unnecessary herein, as it forms, except in combination, no part of the invention.

A coupler *h* is pivoted on one or both sears, the forward end of the coupler being operated by a cam-surface on the inner side of the hammer, as indicated in dotted outline at *p*, against the force of a suitable spring, and the rear end *h'* of the coupler is adapted to pass underneath the opposite sear, acting on one of the sears only when both hammers are set for firing. It will thus be seen that the coupler *h* when formed as shown in the drawings couples the two sets of firing mechanism, including the sears, so that when the two sears are coupled by the coupler the firing mechanisms are joined together to operate simultaneously.

The trigger *g* is pivoted on an upward projection *k'* from the plate *k* and extends upward, a portion of the trigger lying within the frame. An opening *k²* is formed through the plate and bears on its upper edge a cam-surface *k³*.

A recoil-operated trigger-brake *l* is pivoted to the trigger, and its lower end has a cam-surface *l'*, adapted to coöperate with the cam-surface *k³*, thus temporarily locking the trigger in its upward position. A counterpoise-weight *l²* is borne on the upper end of the trigger-brake *l*, and a stop-pin *m'* is located in the path of movement of the trigger-brake to prevent backward movement beyond a certain distance. The pin in this instance is located on an upward projection *m* from the trigger in connection with which a positive lock located on the slide *n* is used to lock the trigger.

In the use of prior devices in which a single trigger has been employed for the purpose of operating more than one set of firing mechanisms a difficulty has been found to exist from the fact that an involuntary discharge of the piece is liable to follow the action of the first set of firing mechanism. In a case of this kind the recoil following the first discharge throws the trigger backward away from the finger, loosening the grasp of the

latter thereon and allowing the trigger to swing forward. This forward movement of the trigger sets the parts in position to operate a second set of firing mechanism. The counter-recoil of the gun occasioned by the resistance of the shoulder of the user against the stock throws the trigger forcibly against the finger, causing the trigger to be pressed backward and operating the second set of firing mechanism. This operation is performed so quickly that the discharge of the two barrels is almost simultaneous. A fault of this kind is entirely obviated by the use of my improved device. As the trigger is pulled back to discharge the first barrel the lower end of the trigger-brake *l* is carried above the plate *k*, so that the cam-surface *l'* comes in contact with the cam-surface *k'*. The counterpoise-weight *l'* tends to throw the lever forward on its pivot, and the recoil of the gun aids in this action. The trigger, however, will be located in this position for only an instant, but sufficiently long to enable the counter-recoil to act. The counter-recoil will assist in throwing the counterpoise-lever backward, and this movement is also aided in the tendency of the trigger to move downward. It will be seen from this construction that the trigger is momentarily locked by the recoil of the gun and remains locked for a time sufficient to prevent the action of the coupling devices until after the counter-recoil has operated to unlock the trigger-brake.

It is obvious that a spring or springs may be used in a device of this character as an equivalent of the counterpoise-weight or that other means may be employed for temporarily locking the trigger, and I do not desire to limit myself to the precise construction herein described, as any device for temporarily locking the trigger will come within the scope of my invention.

In the within construction the trigger-brake has been shown as applied to each of the triggers; but my invention is not limited to such construction, as it contemplates the use broadly of a brake device so arranged as to control the action of each of the triggers while they act to fire their corresponding barrel.

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

1. In combination with the firing mechanism of a firearm, a trigger, and means mounted upon the trigger and automatically actuated by the firing of the piece for locking the trigger before its return movement after having operated the firing mechanism.
2. In combination with the firing mechanism

of a firearm, a trigger, means carried by the trigger and automatically actuated by the firing of the piece for locking the trigger before its return movement after having operated the firing mechanism, and means for automatically unlocking it.

3. In combination with the firing mechanism of a firearm, a trigger, and means mounted upon the trigger automatically actuated by the firing of the piece for locking the trigger through the recoil of said piece and unlocking the trigger through the counter-recoil of the piece.

4. In combination with the firing mechanism of a firearm, a trigger, a counterpoise-lock mounted on the trigger to operate by the action of the recoil and counter-recoil of the piece.

5. In combination with the firing mechanism of a firearm, a trigger, a lever pivoted on the trigger and weighted at its upper end, and a stop to engage the lever.

6. In combination with the firing mechanism of a firearm, a trigger, a lever pivoted on the trigger and weighted at its upper end, a cam-surface on the opposite end of the lever, and a stop having a cam-surface to engage the cam-surface on the lever.

7. In combination in a firearm having a plural number of firing mechanisms, means for coupling said firing mechanisms whereby both may be operated by a single trigger, a trigger to operate said mechanisms, and a lock mounted on the trigger to act through the action of the recoil to lock said trigger and operate on the counter-recoil to unlock the trigger.

8. In combination in a firearm having a plural number of firing mechanisms with means for coupling the mechanisms together, a trigger to operate both mechanisms through the medium of the coupling means, a lever pivoted on the trigger and weighted at its upper end, and a stop to engage the lower end of the lever.

9. In combination in a firearm having a plural number of firing mechanisms, means for coupling the mechanisms together, a trigger to operate either of said mechanisms through the medium of the coupling means, a lever pivoted on the trigger and weighted at its upper end, a cam-surface on the opposite end of the lever, and a stop having a cam-surface to engage the cam-surface on the lever.

GEORGE E. WITHERELL.

Witnesses:

ARTHUR B. JENKINS,
ERNEST R. SEWARD.