

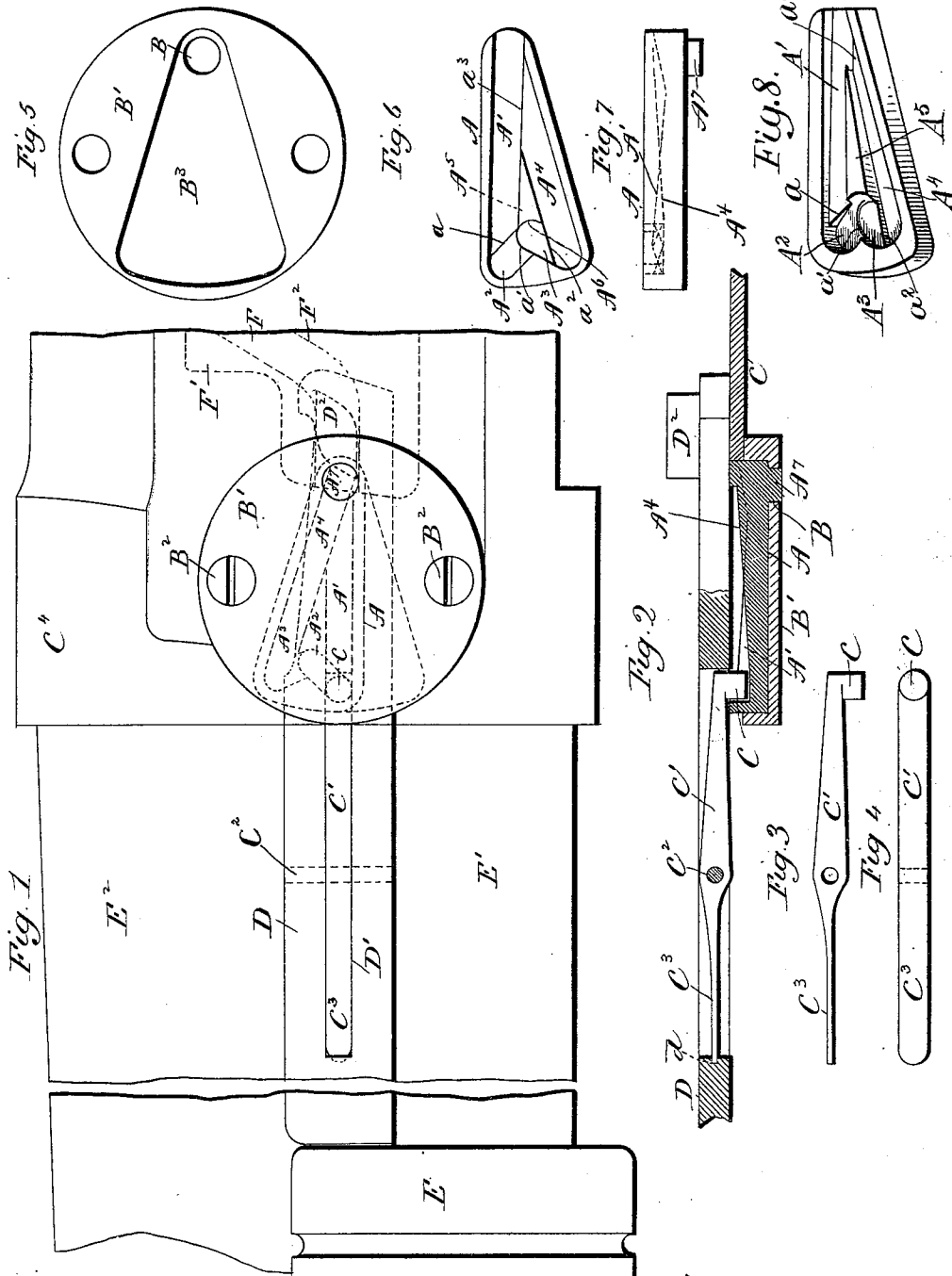
(No Model.)

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SAFETY DEVICE FOR ACTION BARS OF BOLT GUNS.

No. 565,767.

Patented Aug. 11, 1896.



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SAFETY DEVICE FOR ACTION-BARS OF BOLT-GUNS.

SPECIFICATION forming part of Letters Patent No. 565,767, dated August 11, 1896.

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To all whom it may concern:

Be it known that I, WILLIAM MASON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Firearms, (Case D;) and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a broken view in side elevation of a gun containing my improvement, showing a portion of the sliding handle, the action-bar, and the forward end of the gun-frame; Fig. 2, a view in horizontal section through the action-bar on the forward end of the frame and showing the action-bar hook and the oscillating abutment-lever; Fig. 3, a detached plan view of the hook; Fig. 4, a view thereof in side elevation; Fig. 5, a detached view in inside elevation of the recessed lever-containing plate; Fig. 6, a detached view in inside elevation of the abutment-lever; Fig. 7, a plan view thereof, and Fig. 8 an inside perspective view thereof.

My invention relates to an improvement in that class of firearms in which the action mechanism is operated by means of a sliding supporting-handle located in front of it and adapted to be grasped by the hand and moved back and forth in a right line parallel or substantially parallel with the longitudinal axis of the gun-barrel, the object being to provide simple and reliable means for locking the gun against being prematurely opened in the interval which elapses between the falling of the hammer and the explosion of a cartridge by the untimely exertion by the user of rearward draft upon its sliding handle.

With these ends in view my invention consists in the combination, with an action-bar, of an abutment-lever containing an island-groove and an island, and coacting with the said bar to prevent the handle from being drawn back as required for opening the gun until it has been first given a preliminary forward unlocking movement.

My invention further consists in the combination, with an action-bar, of an action-bar hook mounted therein and an abutment-lever

pivotally connected with the gun-frame and coacting with the said hook to prevent the handle from being drawn back as required for opening the gun until it has been first given a preliminary forward unlocking movement.

My invention further consists in certain details of construction and combinations of parts as will be hereinafter described, and pointed out in the claims.

In carrying out my invention as herein shown I employ a vertically-oscillating abutment-lever A, constructed upon its inner face with a groove, which for convenience I shall call an "island groove," because it forms a feature of the movement known to mechanics as an "island movement." The said groove comprises arms A', A², A³, and A⁴, as best shown in Fig. 6. The rear end of the straight lower arm A' extends through the rear end of the lever, while its forward end intersects the outer end of the arm A², the inner end of which intersects the inner end of the arm A³, whereof the outer end intersects the forward end of the arm A⁴, the rear end of which intersects the rear end of the arm A'.

The bottom wall of the arm A' rises gradually to the top of a shoulder a, separating it from the arm A², the bottom wall of which rises from its outer to its inner end to the top of the shoulder a', which separates it from the arm A³, the bottom wall of which rises from its inner end to the top of a shoulder a², which separates it from the arm A⁴, the bottom wall of which rises from its forward end to the top of the shoulder a³, which separates it from the arm A'. The said arms of the island-groove inclose a small arrow-head-shaped island A⁵, the forward end of which is concaved to form a seat A⁶, while its rear end is pointed. The said abutment-lever is constructed at its rear end with an outwardly-projecting stud or trunnion A⁷, which enters a suitable opening B, formed to receive it in a disk-shaped lever-containing plate B', (but the shape is immaterial,) which is attached by screws B² B², or in some other equivalent manner, to the left-hand side wall of the forward end of the frame C⁴ of the gun. The said stud forms the center upon which the lever swings in its oscillating movement,

while the said plate connects the lever with the frame of the arm. The inner face of this disk is constructed with a recess B³, adapted in depth to receive the abutment-lever A and in width to permit the required oscillation of the same.

The island-groove formed in the inner face of the abutment-lever, as described, receives the outwardly-turned stud-like beak C of the rear end of the spring-controlled action-bar hook C', which is hung to swing upon a pin C², mounted in the action-bar D, which is constructed with a longitudinal recess D' for the reception of the hook, the forward end of which is reduced in size to form a spring C³, the extreme forward end of which is entered into a notch *d*, formed in the action-bar for its reception, as shown in Fig. 2. The power of the said spring C³ exerts an effort to keep the end of the beak C of the hook in constant engagement with the bottom of the island-groove, the variations in the inclinations of the bottom walls of the arms thereof and the shoulders separating the said arms being relied upon to cause the hook to make its island movement in right direction. The forward end of the action-bar is connected with the sliding handle E, which, as shown, is mounted upon the magazine E'; but this is not imperative, although it is essential that the sliding handle should be constructed and arranged to move substantially in line with the longitudinal axis of the gun-barrel E². The operating-lug D², located at the rear end of the action-bar, enters a path-cam slot F, formed in the left-hand side wall of the carrier F', which is also a "locking-block" and may be so termed. This lug and path-cam slot are constructed and arranged in this gun so that when the gun is closed the lug will clear the inclined portion of the lower wall F² of the path-cam slot F by a sufficient distance to permit the sliding handle and action-bar to be moved back and forth enough for the oscillation of the abutment-lever without disturbing the carrier itself. It will be understood from this that the distance between the said lug and wall must at least be equal to the pitch of the short arms A² and A³ of the island-groove.

At the beginning of the closing movement of the gun the stud-like beak of the hook travels in the longitudinal groove formed in the inner face of the frame for the reception of the action-bar. This groove is not shown, nor is that necessary, because it is a well-known feature of guns of the class being described. As the action-bar moves forward the hook enters the arm A' of the island-groove in the inner face of the abutment-lever, being prevented from entering the arm A⁴ of the groove by the shoulder *a*³, which separates the rear ends of the two arms. Now, as the action-bar continues to move forward, the beak will travel until it reaches the forward end of the said arm A', as shown in Fig. 1, at which time the gun will be fully closed, with

the operating-lug D² of the action-bar separated from the inclined forward portion of the rear wall of the path-cam slot of the carrier, as shown by broken lines in Fig. 1. At this time the beak of the hook will stand directly in front of the shoulder *a*, which separates the arms A' and A² of the island-groove. Now, when the user pulls rearward upon the sliding handle, the beak C of the operating-hook C' will be immediately engaged with the said shoulder *a*, causing the abutment-lever to be elevated and the pin to ride up the inclined bottom wall of the arm A² and drop over the shoulder *a*' into the inner end of the arm A³. The pin is in this way brought into line with the seat A⁶ of the island A⁵, which now stands directly in the way of any further rearward movement of the stud-like beak, which in turn blocks any further rearward movement of the action-bar or sliding handle. To bring the beak into alinement with the island, as described, has required a slight rearward movement of the handle and action-bar, but this handle locking movement has not disturbed the carrier, inasmuch as the operating-lug D² of the action-bar is in the closed position of the gun, cleared from the inclined portion of the path-cam slot in the carrier for a sufficient distance to permit the said locking movement of the sliding handle and action-bar without disturbing the carrier itself.

To open the gun, the handle must be given a preliminary forward unlocking movement to cause the beak of the hook to ride up out of the arm A³ of the island-groove and drop off the shoulder *a*², which separates the said arm from the forward end of the arm A⁴ of the groove. Then, as the handle is pulled rearward again, the beak of the hook rides rearward through the arm A⁴, drops off the shoulder *a*³, enters the rear end of the arm A', and thence passes out of the abutment-lever and into the long groove formed for the clearance of the action-bar in the frame of the gun. It will thus be seen that after the gun has been closed it cannot be opened without first locking it, and then unlocking it by a short preliminary forward movement of the sliding handle. If, therefore, the user of the gun exerts an untimely rearward draft upon the sliding handle, the gun will be automatically locked against opening in the interval between the falling of the hammer and the explosion of the cartridge.

The action of the gun in being locked, and under the circumstances just suggested is the same as the action of the gun after it has been fired, the only difference being one of time for in the ordinary and normal use of the gun the sliding handle will be first locked and then unlocked after the gun has been fired, while in case the user of the gun exerts an untimely rearward draft upon the sliding handle the gun will be locked against being prematurely opened and kept locked until unlocked by a forward movement of the handle.

It is apparent that in carrying out my in-

vention I may make some changes from the construction herein shown and described. I would therefore have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention. Thus I may embody my improvement in guns in which the locking-block does not have the function of conveying the cartridges from a tubular magazine to the gun-barrel. I do not therefore mean by my use of the word "carrier" to limit myself to a locking-block having the said conveying function, but hold myself free to use any other type of locking-block in connection with my improvement.

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

1. In a firearm, the combination with an action-bar, of an abutment-lever formed with an island-groove surrounding an island and

receiving a projection from the bar which coacts with the lever, substantially as described. 25

2. In a firearm, the combination with an action-bar of a hook mounted therein, and a vertically-oscillating abutment-lever containing an island-groove surrounding an island, and coacting with the said hook, substantially as described. 30

3. In a firearm, the combination with an action-bar, of a spring-controlled hook mounted therein and a vertically-oscillating abutment-lever pivotally connected with the frame of the arm, and containing an island-groove surrounding an island and coacting with the said hook, substantially as described. 35

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 40

WILLIAM MASON.

Witnesses:

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N. I. WARD.