(No Model.)

T. G. BENNETT.

SAFETY LOCKING DEVICE FOR MAGAZINE FIREARMS.

No. 564,420. Patented July 21, 1896.

Fig. 1

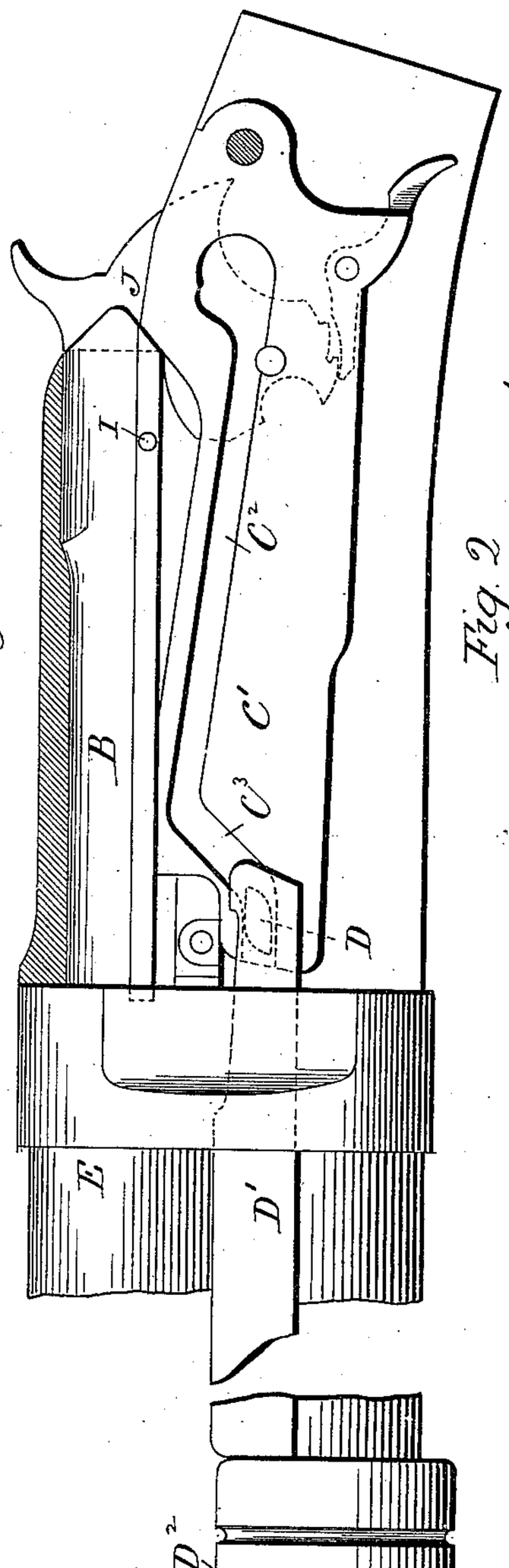

Fig. 2

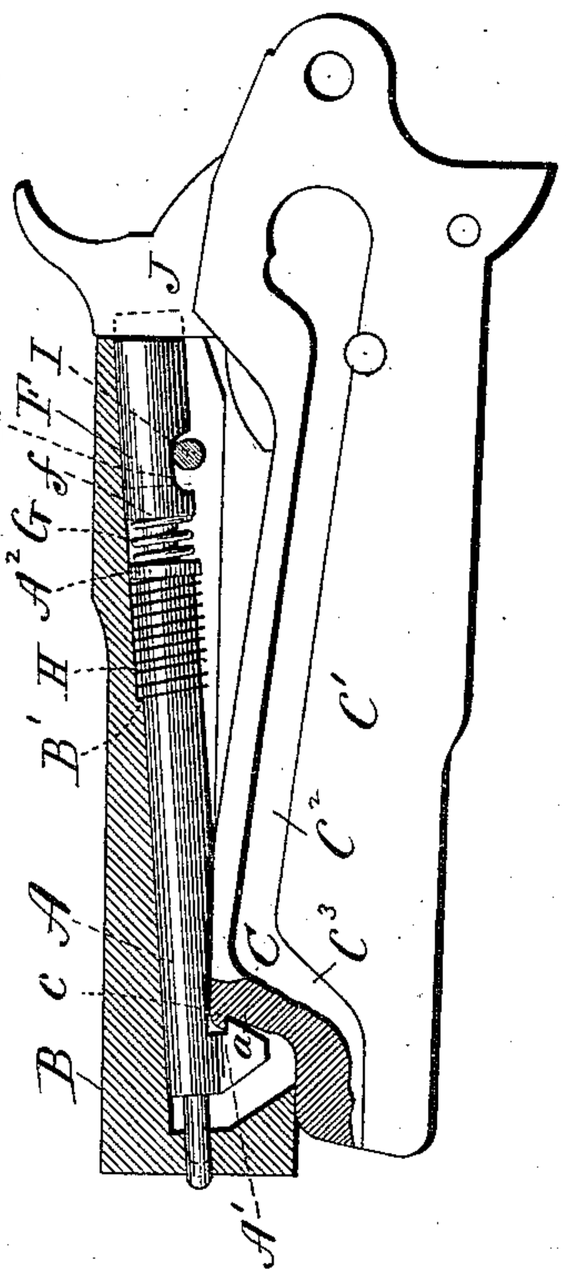

Fig. 5

Fig. 3

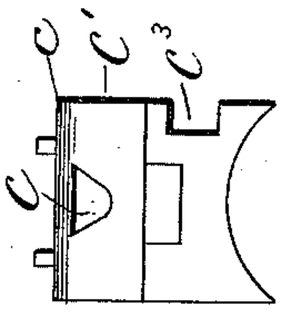

Fig. 4

Witnesses—
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UNITED STATES PATENT OFFICE.

THOMAS G. BENNETT, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE WINCHESTER REPEATING ARMS COMPANY, OF SAME PLACE.

SAFETY LOCKING DEVICE FOR MAGAZINE-FIREARMS.

SPECIFICATION forming part of Letters Patent No. 564,420, dated July 21, 1896.

Application filed January 31, 1896. Serial No. 577,506. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. BENNETT, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Firearms; 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 view, partly in side elevation and partly in section, of a gun constructed in accordance with my invention; Fig. 2, a detached view, partly in section and partly in elevation, of the breech-bolt and locking-block of the said gun, the breech-bolt being shown in its closed position and the locking-block in its lifted and locked position; Fig. 3, a view in front elevation of the locking-block; Fig. 4, a detached view in side elevation of the sleeve; Fig. 5, a corresponding view of the firing-pin.

This invention relates to an improvement in that class of firearms in which the action mechanism is operated by means of a sliding handle located forward of the frame of the arm and arranged to be reciprocated back and forth in a line substantially parallel with the axis of the gun-barrel, the object of my present invention being to provide simple, strong, reliable, and effective means for preventing the user from prematurely opening the gun in the interval between the falling of the hammer and the explosion of the cartridge by exerting an untimely rearward draft upon the sliding handle.

With these ends in view my invention consists in a longitudinally-movable sleeve mounted in the breech-bolt, coacting with the firing-pin, and constructed at its forward end with a depending hook which engages with the locking-block to hold the same in its highest position, and which coacts with the locking-block to prevent the gun from being prematurely opened at the time of firing in case the user is exerting an untimely rearward draft upon the handle.

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 sleeve A, mounted in the breech-bolt or breech-closure B, so as to have longitudinal movement therein within narrow limits. The forward end of the said sleeve is provided with a depending rearwardly-projecting hook A′, having a beveled face *a*, and adapted to enter a locking-notch C, formed in the upper edge of the forward end of the locking-block C′, which is constructed at a point directly above the said notch with a bevel *c*, coacting with the bevel *a* before mentioned. It is sufficient to say of the locking-block that it may be of any approved construction, and that, as herein shown, it also performs the office of a carrier. It is constructed with a path-cam slot C^2, downwardly inclined at its forward end, as at C^3, and receiving an operating-lug D, projecting inwardly from the rear end of the action-bar D′, which is connected at its forward end with a sliding handle D^2 of any approved construction and arrangement, so long as it is adapted to be moved back and forth in a line substantially parallel with the axis of the longitudinal axis of the gun-barrel E. The firing-pin F, also mounted in the breech-bolt B, passes at its forward end through the sleeve A, and is longitudinally movable independently thereof. A comparatively heavy spiral spring G is interposed between the shoulder *f* at the rear end of the firing-pin and a fixed collar A^2, located at the extreme rear end of the sleeve A. A lighter spiral spring H is interposed between the forward face of the collar A^2 and a shoulder B′, formed in the breech-bolt. The firing-pin F is limited in its longitudinal movement by a stop-pin I, passing through a notch F′, formed in the lower face of its enlarged rear end. The hammer J and the other features of the action mechanism of the arm may be of any approved construction.

With reference, first, to the action of the sleeve in locking the locking-block in the highest portion thereof, it is to be said that the breech-bolt reaches its closed position before the locking-block is lifted into its closed

position, at which time the bevel *c* of the locking-block engages with the bevel *a* of the hook A′ of the sleeve with such force as to overcome the tension of the light spring H, allowing the sleeve to come forward and the locking-block to rise into its highest position, at which time the sleeve is retracted by the spring H, so as to enter its hook A′ into the notch C of the locking-block, whereby the locking-block is firmly locked in its highest position. Now, when the trigger is pulled and the hammer released, the same strikes the firing-pin, causing the latter to move forward, its motion being transmitted through the stiff spring G to the sleeve, so that the pin and sleeve move forward as though they were in one piece. The light spring H is at this time compressed to a degree corresponding to the extent of the forward movement of the pin and sleeve. The described forward movement of the hammer explodes the cartridge, while the corresponding forward movement of the sleeve disengages the hook A′ from the locking-block, and permits the gun to be opened by the rearward movement of the action-bar and sliding handle. Now, when the hammer is cocked, the light spring H recovers and retracts the sleeve and pin, the heavy spring being at this time practically inert.

The above description applies to the action of the arm when it is being operated under normal or right conditions, that is to say, when the user is not exerting any rearward draft upon the sliding handle at the time he pulls the trigger.

With reference now to the action of the gun in case the user is pulling rearward on the handle at the time he pulls the trigger, it may be said that at this time the sleeve takes on an additional function, namely, a safety function, for a rearward draft upon the sliding handle impinges the operating-lug D of the action-bar D′ against the inclined portion C^3 of the path-cam slot C^2 in the locking-block, and exerts an effort to push the locking-block downward, directly proportioned in its strength to the force with which the user is pulling rearward. This downward push of the locking-block causes the hook A′ of the sleeve to be bound in the notch C of the locking-block with a force superior to the force required to compress the heavy spring G, encircling the firing-pin. Now, when the hammer falls and strikes the firing-pin, the said spring G will be compressed, and the pin will move forward through the sleeve independently thereof and explode the cartridge without unlocking the locking-block, which will, however, be released by the recoil following the explosion. It will be clear that inasmuch as the pin moves forward independently of the sleeve the sleeve will remain at rest and in the position in which it locks the locking-block in its elevated position, and hence blocks the opening of the gun, notwithstanding that the user may be pulling rearward upon the sliding handle. It requires some force to open the gun, and it is expected that the force to open the gun will be always greater than the force that is required to bind the sleeve, as described, so that the sleeve will remain stationary while the firing-pin is passing forward through it.

It will be understood from the foregoing that the sleeve and hook automatically operate to lock the locking-block in its highest position when the gun is closed, and that the sleeve is automatically operated to unlock the locking-block by the forward movement of the firing-pin when the gun is fired under right conditions, that is to say, without any rearward draft upon the sliding handle. It will also be clear that in case the user is exerting a rearward draft upon the sliding handle the said draft will be transmitted to the sleeve in such a manner that it will not be automatically operated to release the locking-block, but will remain in its locked position until released by the recoil consequent upon the explosion of the cartridge.

I would 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.

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 the breech-closure and the locking-block thereof, of a longitudinally-movable sleeve mounted in the breech-closure and constructed with a hook to engage with the locking-block to lock the same in its highest position, substantially as described.

2. In a firearm, the combination with the breech-closure and the locking-block thereof, of a longitudinally-movable sleeve mounted in the breech-closure and constructed with a hook to engage with the locking-block to lock the same in its highest position, and a firing-pin passing through the sleeve and moving the same to unlock the locking-block, substantially as set forth.

3. In a firearm, the combination with the breech-closure and the locking-block thereof, of a longitudinally-movable sleeve mounted in the breech-closure, and provided with a depending hook which engages with the locking-block to lock the same in its highest position, and an action-bar connected with a sliding handle and engaging with the locking-block to force the same downward into its unlocked position when the bar is under rearward draft, substantially as described.

4. In a firearm, the combination with the breech-closure and the locking-block thereof, of a longitudinally-movable sleeve mounted in the breech-closure, and provided with a depending hook which engages with the locking-block to lock the same in its highest position, an action-bar connected with a sliding

handle and engaging with the locking-block to force the same downward into its unlocked position when the bar is under rearward draft, a firing-pin mounted in the breech-closure and passing through the sleeve, a spring interposed between the firing-pin and sleeve, which under normal conditions is moved forward with the firing-pin through the medium of the said spring, and a lighter spring combined with the sleeve for retracting the same and the firing-pin, substantially as set forth.

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

THOMAS G. BENNETT.

Witnesses:
DANIEL H. VEADER,
PERCY S. RAY.