

No. 864,940.

PATENTED SEPT. 3, 1907.

W. H. WHITTIER.
BREECH LOADING FIREARM.

APPLICATION FILED APR. 30, 1907.

2 SHEETS—SHEET 1.

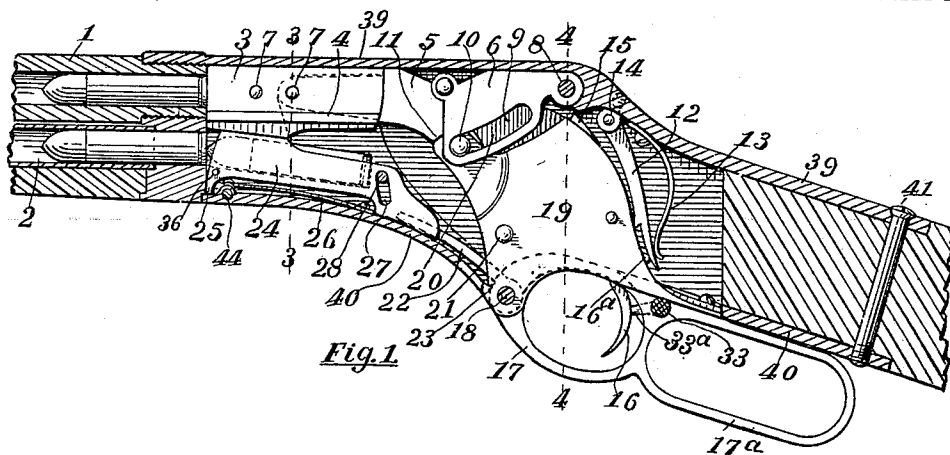


Fig. 1

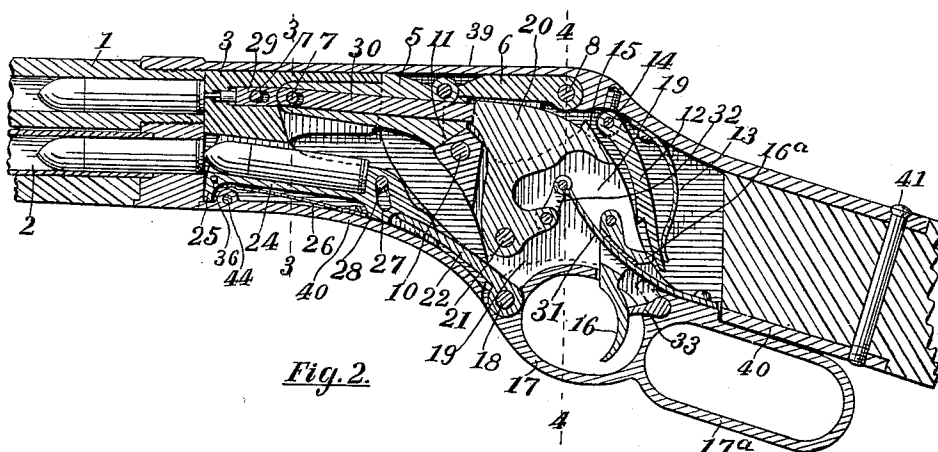


Fig. 2

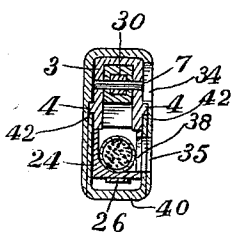


Fig. 3

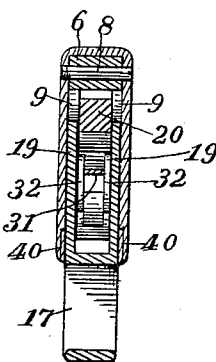


Fig. 4

Witnesses
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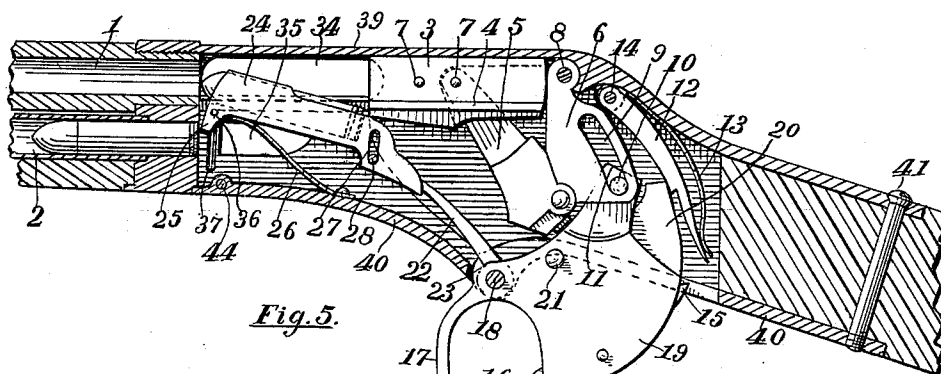


Fig. 5.

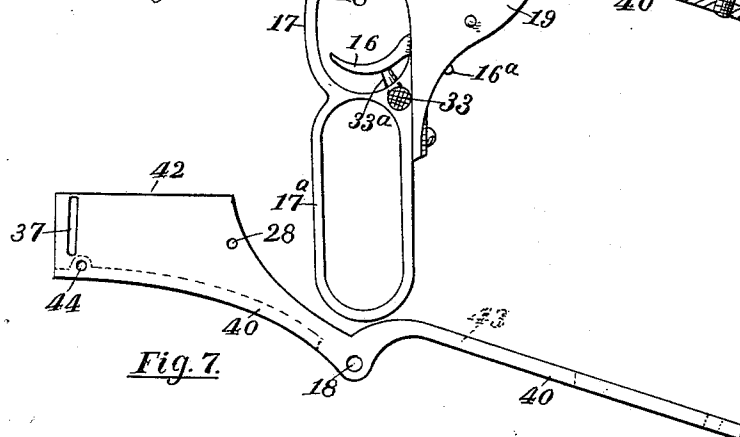


Fig. 7.

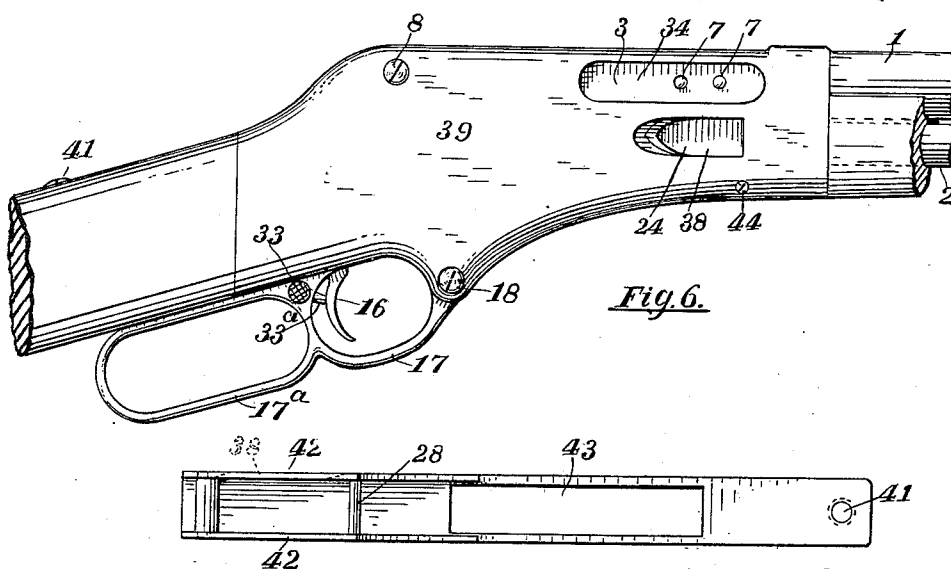


Fig. 6.

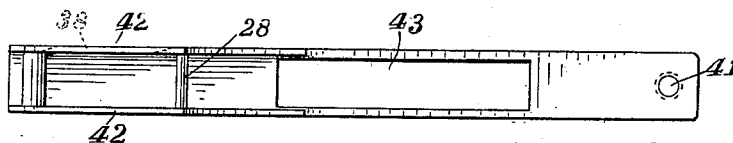


Fig. 8.

Witnesses

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UNITED STATES PATENT OFFICE.

WALTER H. WHITTIER, OF GRAND RAPIDS, MICHIGAN.

BREECH-LOADING FIREARM.

No. 864,940.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed April 30, 1907. Serial No. 371,197.

To all whom it may concern:

Be it known that I, WALTER H. WHITTIER, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, 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 invention relates to improvements in breech loading firearms, and more particularly to such having a rearwardly sliding breech block and a pivoted hammer; and its object is to provide the same with an improved frame or receiver; improved means for operating the breech block; improved firing mechanism, and various new and useful features hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which:

Figure 1. is a side elevation of a device embodying my invention with parts in closed position and the frame, barrel and magazine in longitudinal vertical section; Fig. 2. a longitudinal vertical section of the device; Fig. 3. a transverse section on the line 3—3 of Figs. 1 and 2; Fig. 4. the same on the line 4—4 of Figs. 1 and 2; Fig. 5. the same as Fig. 1. with the parts in opened position; Fig. 6. a side elevation of the device; Fig. 7. a side elevation of the detachable bottom part of the frame; and, Fig. 8. a plan view of the same.

Like numbers refer to like parts in all of the figures.

1 represents a rear portion of the gun barrel; 2 the same of the magazine arranged beneath the barrel, and opening at the rear into the lifter 24; 3 represents the breech block longitudinally and rearwardly movable in a hollow frame 39 and guided by tongues 4 at its respective sides slidable in grooves in the interior of the frame and supported therein by the upper edges 42 of the removable lower portion 40 of the frame 39; 5 and 6 are the respective members of a toggle lever, which serves to operate and hold the breech block, said lever being provided on the under side of the rear member 6 with parallel slotted members 9, spaced apart to receive therebetween the hammer and operating lever. In the said slots and traversing the same, is a pin 10 carried by the bell crank operating lever 17 pivoted in the lower part of the frame, as at 18, and extending rearward beneath the frame in a loop 17^a, whereby the said lever is manually operated. When the device is closed for firing, the upper end of this lever 17 engages a shoulder 11 on the toggle lever and beneath its joint and thus securely locks said toggle lever in position.

The forward end 5 of the toggle lever extends within a recess in the rear of the breech block 3 and is pivoted near the middle of the breech block as at 7 to turn downward in the recess, being provided with a rounded end concentric with the pivot and engaging a concave

socket in the breech block. The rear member 6 of this lever is also rounded and engages a socket in the upper part of the frame 39 and is pivoted therein as at 8, the middle joint of the lever being adapted to turn downward when operated by the pin 10.

The lever 17 is upwardly extended within the frame and is chambered out to form broad parallel sides 19 between which sides is mounted the hammer 20 pivoted as at 21 near the front of the sides 19 and provided with a shoulder 15 engaged by a sear 12 pivoted in the upper part of the frame as at 14 and held yieldingly in engagement with said shoulder by a spring 13. Between the sides 19 and near the rear thereof is pivoted the trigger 16 which latter extends downward within an opening in the lever 17 adjacent to its pivot 18. The trigger is provided with a rearward projection 16^a to engage and move the sear to release the hammer.

To prevent accidental release of the hammer, I provide a safety stop 33 rotative in the lever 7 and having a projection 33^a adapted when turned toward the trigger 16 to engage the same and prevent its rearward movement. The hammer 20 is actuated by a main spring 31 attached to the lever 17 and extending through an opening in the trigger and having its movable end connected by links 32 to a rearwardly projecting arm on the hammer.

Extending longitudinally through the forward end of the breech block 3 and the forward member 5 of the toggle lever is a firing pin divided concentric with the rear pin 7 into two parts 29 and 30, and each provided with a longitudinally extended opening in which are the transverse pins 7, which retain the firing pin in place and permit limited longitudinal movement of the same when struck by the hammer, the firing pin being inclosed in the breech block and lever, is protected and prevented from lateral vibration. The front end of this pin projects from the breech block to engage the primer of the cartridge, and the rear end projects into a recess in the rear member of the toggle lever into which recess the hammer swings to engage said pin. To discharge the empty shell I provide a side opening 34 in the frame and any convenient extracting mechanism (not shown). To insert cartridges into the magazine, I also provide another opening in the frame in the horizontal plane of the magazine 2, and a corresponding opening 38 in the side of a lifter 24, which lifter is adapted to transfer the cartridge from the magazine to the barrel, being vertically movable and guided at the rear by a pin 28 extending through a vertical slot 27 in the lifter, and guided at the front by a transverse pin 36 traversing vertical slots 37 in the sides of the removable part 40 of the frame. The forward end of the lifter is yieldingly supported upon a spring 26 attached to the removable bottom of the frame and extending beneath the lifter, and the rear of the same is raised by an arm 22 engaging the lifter

and turning on the pivot 18 of the lever 17. A shoulder 23 on the lever 17 engages and raises the arm 22 as the lever 17 is turned downward to open the breech and discharge the shell. As the breech block slides forward, the under side of the same engages the top of the lifter and forces the same down to proper position to receive a cartridge from the magazine. As the breech block recedes the spring raises the front of the lifter and the arm raises the rear of the same to a position shown in Fig. 5, in which the downwardly projecting lug 25 on the lifter retains the cartridges in the magazine, and the ball end of the cartridge is brought opposite the open rear end of the barrel. The rear end of the cartridge projects above the lifter sufficient to be engaged by the end of the breech block and thereby the cartridge is forced forward into the barrel as the breech block advances. It will be noted that the hammer, the trigger, the mainspring and firing mechanism are all within the operating levers and breech block and that when the toggle lever is in closed position to support the breech block against the force of the charge that the same is securely held by the upper end of the lever 17 engaging the shoulder 11 thus taking any strain from the pin 10 and insuring a substantial support for the breech block. Also that the firing pin being inclosed in a tubular support throughout is not liable to spring, bend, or be vibrated by the blow of the hammer, and can be made very light, and also that the entire structure is simple, very strong, and not likely to get out of order. It will also be noted that the spring support for the lifter at one side and engagement of the lifter by the breech block at the other side, makes the device work without noise or lost motion therein and further that the frame is very strong, being integral and closed at the top and sides, except the side openings referred to and that the removable bottom portion 40 of the frame, carries and supports the entire operating mechanism except the rear end of the toggle lever, the sear and its spring, whereby by removing the screws 8, 18, 41 and 44, the same may be readily removed for cleaning, oiling or repairing, as occasion requires.

What I claim is:

1. In a gun, a hollow frame, a manually operated lever extending within the frame and pivoted thereto, a hammer and a trigger carried by the lever, a sear pivoted to the frame and engaging a shoulder on the hammer and also released by the trigger, and a firing pin engaged by the hammer.
2. In a gun, a hollow frame, a manually operated lever extending upward within the frame and pivoted thereto and also having parallel sides spaced apart, a hammer and a trigger each pivoted between said sides and carried thereby, a sear pivoted in the frame and engaging a shoulder on the hammer and also engaged by the trigger to release the hammer, and a firing pin engaged by the hammer.
3. In a gun, a hollow frame, a manually operated lever extending upward within the frame and pivoted thereto, and also having broad parallel sides spaced apart, a hammer between said sides and pivoted thereto, a sear pivoted in the upper part of the frame and engaging a shoulder on the hammer, a trigger pivoted between said sides and having a projection to engage the sear, a spring extending through an opening in the trigger and attached at its respective ends to the lever and to the hammer, and a firing pin engaged by the hammer.
4. In a gun, a hollow frame, a manually operated lever pivoted to the frame and extending upward therein the upper part of the said lever having parallel sides spaced apart, and the lower part having transverse openings, a

hammer and a trigger between said sides and pivoted thereto, said trigger having a rearward extension to engage a sear and an opening to receive a spring and also extending within one of the openings in the lever, a spring extending through the trigger and attached to the lever and hammer at its respective ends, a sear pivoted in the upper part of the frame and engaging a shoulder on the hammer, and also engaged by the projection on the trigger, and a safety stop rotative in the lever and having a projection to engage and hold the trigger.

5. In a gun, a slidable breech block, a toggle lever pivoted at one end to the breech block and having a fixed pivot at the other end, said lever also having a shoulder beneath its joint and a manually operated lever connected to the toggle lever to operate the same, and also having one end engaging the said shoulder to hold the toggle lever in place.

6. In a gun, a hollow frame, a breech block movable in the frame, a toggle lever to operate the breech block, a firing pin, divided into two parts, and extending within the breech block and toggle lever, a hammer to engage the firing pin and means for operating the hammer and breech block.

7. In a gun, a hollow frame, a breech block slidable in said frame, a toggle lever pivoted at its respective ends to the breech block and frame, a transversely divided firing pin extending through the breech block and the adjacent member of the lever, a manually operated lever connected to the toggle lever and having its end engaging a shoulder on the lever to rigidly hold the same, a hammer mounted on the lever to engage the pin and means for operating the hammer.

8. In a gun, a hollow frame, a breech block slidable therein and having a recess in its rear portion, a toggle lever pivoted at its respective ends to the breech block and frame, and having its forward member in the said recess and a recess in the under side of its rear member, a divided firing pin extending longitudinally through the forward part of the breech block and the forward member of the lever, a manually operated lever pivoted in the frame and extending within the recess in the said rear member, a hammer pivoted within said last named lever and engaging the pin, a sear pivoted in the frame and engaging the hammer, and a trigger pivoted in the last named lever and engaging the sear to release the hammer.

9. In a gun, a hollow frame having a concave socket, a breech block slidable in the frame and having a recess and a concave socket in its rear part, a toggle lever having rounded ends engaging the concave sockets in the block and frame, and pivoted therein, a transversely divided firing pin extending through the front of the breech block and the front member of the toggle lever, a hammer to engage the pin, means for operating the hammer and means for operating the toggle lever.

10. In a gun, a hollow frame, a breech block slidable in the frame, a toggle lever pivoted at its respective ends to the block and to the frame, a firing pin extending through the breech block and through the forward member of the toggle lever, and divided concentric with the axis of the forward pivot of said lever, a manually operated lever connected to the toggle lever to operate the same and having its end engaging a shoulder on said lever, a hammer and a trigger pivoted in the manually operated lever, a sear pivoted in the stock and engaging the hammer to hold the same, and also engaged by the trigger to release the hammer, and a spring to operate the hammer.

11. In a gun, a hollow frame, a breech block slidable in the frame and having a recess in the under side of its rear portion, a toggle lever pivoted at its respective ends to the breech block and the frame and having downwardly extended slotted sides on its rear portion, a manually operated lever extending between said sides and engaging a shoulder on the toggle lever, a pin in said lever and engaging the slots, a transversely divided firing pin extending through the breech block and forward members of the toggle lever, a hammer pivoted in the manually operated lever, a sear pivoted in the frame and engaging the hammer to hold the same, a spring to operate the hammer, and a trigger to move the sear and release the hammer.

12. In a breech loading gun, a barrel, a hollow frame, a tube beneath the barrel and open at the rear end, a

lifter opposite the said end and vertically movable, a pin in the front end of the lifter and traversing vertical grooves in the frame, a spring beneath the lifter, a breech block slidably engaging the upper side of the lifter to depress the same, and means for operating the breech block.

13. In a breech loading gun, a barrel, a hollow frame, a tube below the barrel and open at the rear, a lifter opposite the tube, a breech block slidable in the frame and engaging the upper side of the lifter to depress the same, a spring to raise the front of the lifter, a pivoted lever to raise the rear of the lifter, and a manually operated lever to move the breech block and having a shoulder to engage and move the lifter operating lever.

14. In a breech loading gun, a barrel, a hollow frame, a tube beneath the barrel and open at the rear, a lifter, having a pin at one end traversing grooves in the frame and a vertical slot at the other end traversed by a pin in the frame, a spring and lever to raise the lifter, a slidable breech block engaging the upper side of the lifter, and a manually operated lever to operate the breech block and lifter lever.

15. In a breech loading gun, a hollow frame having its top and side portions integral and a removable bottom portion having an opening and upwardly projecting sides, a breech block slidable upon the upwardly projecting sides, an operating lever pivoted in the opening, and a toggle lever operated by the operating lever and engaging the breech block at one end and engaging the integral upper part of the frame at the other end.

16. In a breech loading gun, a frame having its top and sides integral, a removable bottom portion to the frame and having an opening therethrough and also having upwardly projecting sides within the sides of the frame, a breech block slidable in the frame and supported on said upwardly projecting sides, an operating lever pivoted in said opening, a hammer and a trigger mounted within said lever, a toggle lever attached to the breech block at one end and pivoted to the frame at the other end, and a sear pivoted to the frame and engaging the hammer, and also engaged by the trigger.

17. In a breech loading gun, a hollow frame having its top and sides integral, a removable bottom portion to said frame and having an opening for the operating lever and upwardly projecting sides to slidably support the breech block, a lifter mounted on said removable portion and vertically movable between the said sides, an operating lever pivoted in said opening, a breech block slidably supported by said upwardly projecting sides, a hammer and a trigger mounted in the operating lever, a sear pivoted to the upper part of the frame, and a toggle lever attached to the breech block at one end, and pivoted to the upper part of the frame at the other end.

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

WALTER H. WHITTIER.

Witnesses:

LUTHER V. MOULTON,
GEORGIANA CHACE.