

O. E. SCOTT.

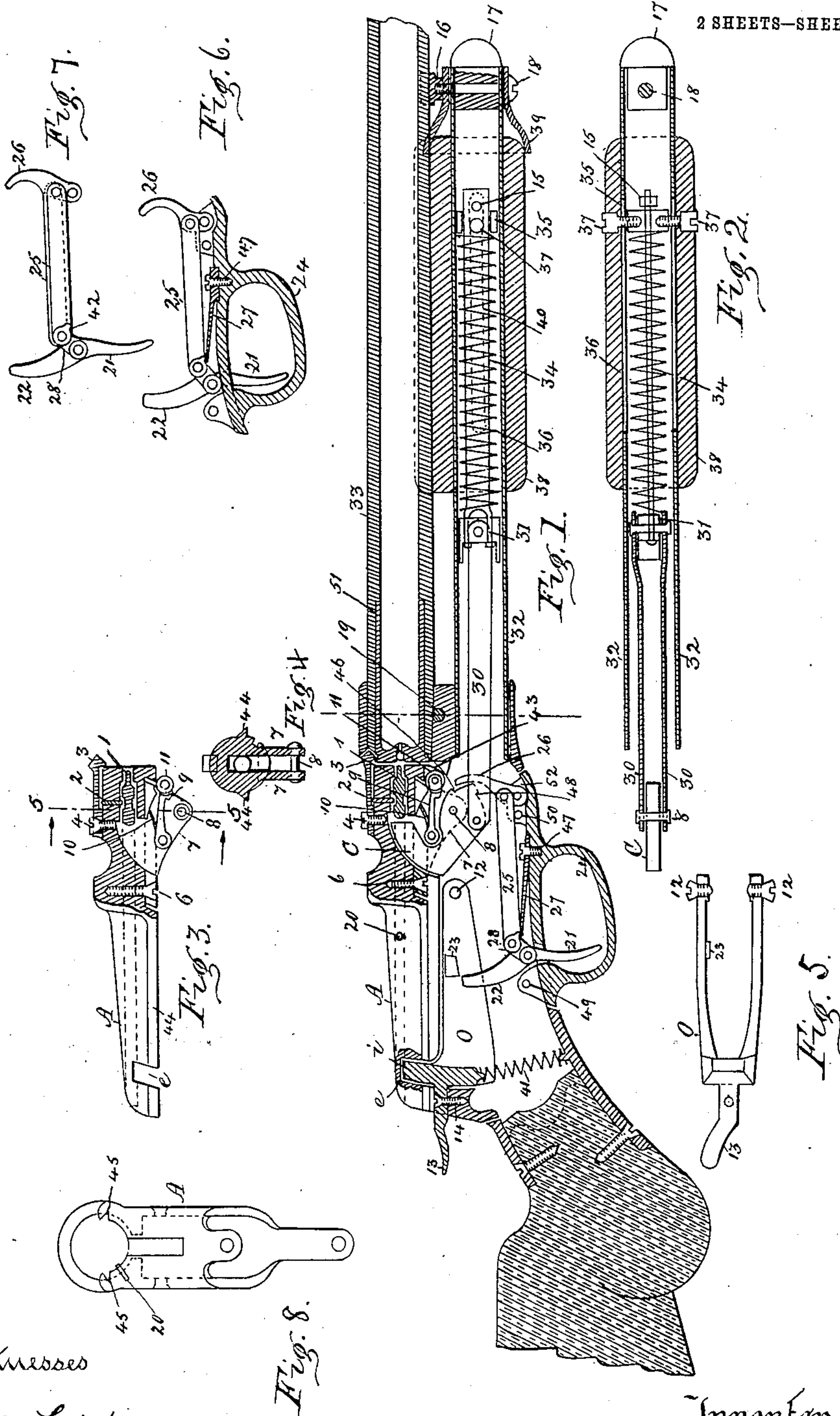
SAFETY GUN.

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901,043.

Patented Oct. 13, 1908.

2 SHEETS—SHEET 1.



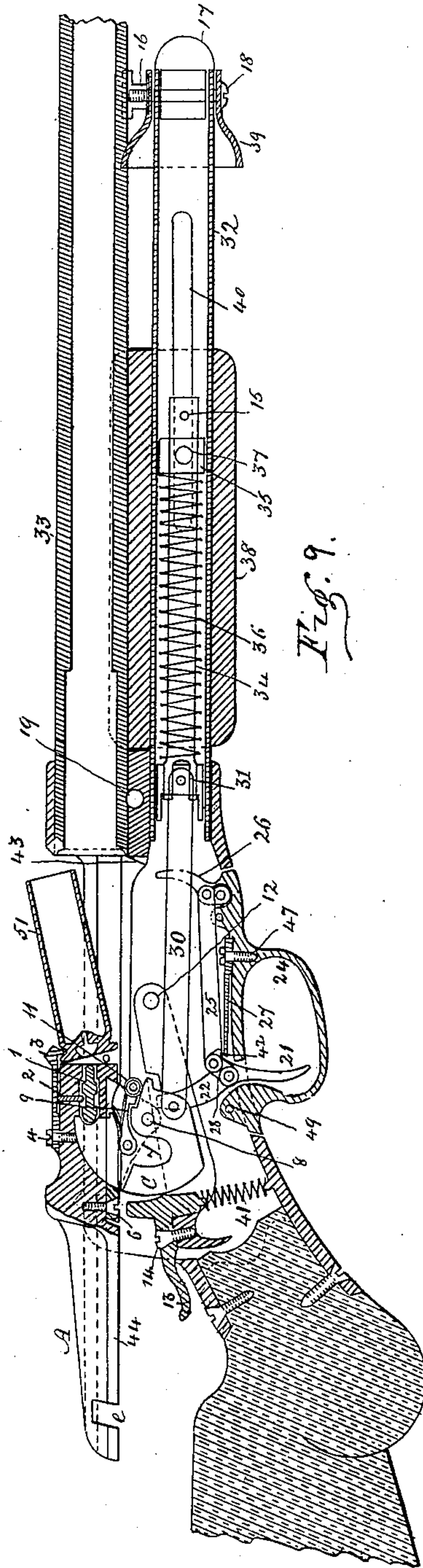
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ORLANDO E. SCOTT, OF HAMILTON, ONTARIO, CANADA.

SAFETY-GUN.

No. 901,043.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed July 27, 1907. Serial No. 385,863.

To all whom it may concern:

Be it known that I, ORLANDO ELBURTON SCOTT, a citizen of the Dominion of Canada, residing at 267 Victoria avenue north, in the city of Hamilton, in the county of Wentworth, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Safety-Guns; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

The invention relates to such improvements in guns as will thoroughly and effectually prevent premature or accidental discharge of the gun, thus preventing accidents to life and limb, and is adapted to shot guns, military and sporting rifles, and while reliable and durable, is comparatively economical to manufacture.

The invention consists in first, a mechanism case open at top and bottom and secured at the rear end to the stock in the usual manner by screws, and at the front end to the barrel tube by encircling it, and secured by a pin. Second, the arrangement and construction of a locking bolt, with thumb piece, a sliding breech block, a hook on the breech block to extract cartridge; a sear to engage with the hammer; a safety trigger arm; a safety stop action block on the locking lever, a safety catch pawl to engage with notch in hammer, and devices to release it; a safety device on the locking lever to hold the breech block, a spiral main spring inclosed in a tube attached to the stock and barrel of a gun to drive the hammer, when compressed. I attain these objects by the mechanism illustrated in the accompanying drawing, in which:—

Figure 1, is a longitudinal section of the mechanism of a gun embodying my invention. Fig. 2, is a top view, detached of the sliding hand grip, bars, main spring, connecting bars and hammer. Fig. 3, is a side view of the breech block having attached thereto a hammer bracket, safety catch pawl, firing pin, shell extractor and spring to cause the pawl to engage with the hammer. Fig. 4, is a cross section of the forward end of the breech block taken on the line 5—5 looking in the direction of the arrow. Fig. 5, is a top view of locking lever with thumb piece attached. Fig. 6, is a side view of trigger frame, guard, trigger and actuating spring, connecting bars and trigger pawl. Fig. 7, is a side view of trigger, pawl and

connecting bars. Fig. 8, is a rear end view of the case detached, showing grooves on two opposite sides for the breech block to slide in. Fig. 9, is a longitudinal section of the mechanism showing the relative position of the parts on ejecting the shell.

In the drawing A, represents the breech block made with side projections to slide in grooves 45, in the frame or case. It contains the firing pin 1, a vertical pin 2, to retain the firing pin in position, an extractor 3, secured by a screw bolt 4, through the rear end of the extractor into the breech block. It is made of spring steel with a hook on the forward end of it to catch on the flange of the cartridge to tilt it and allow it to be thrown out or ejected immediately after firing.

7, is a hammer bracket secured to the under side of the breech block at the front end by a dove tail, at the rear end by a screw bolt 6. The said hammer bracket has two downward lugs 7, to which is pivoted the hammer C, at the pivot point 8; also pivoted to the said lugs 7, is a safety hook catch pawl 9; a small spring 10, is fastened to the catch pawl on the top side, one end of it impinges on the hammer bracket, the forward end on the pawl 9. The front end of the pawl has a small wheel or roller 11, pivoted thereto, which is caused to impinge on and slightly rise on an upward incline (43), formed on the case in front of it, and when the said wheel rides up on the said incline, its purpose is to release the catch pawl 9, from a notch (46) in the hammer C, when the breech block A, is in position for firing, and it may be further noted about this part of the mechanism that the real purpose of the said pawl 9, made to catch in a notch of the hammer, is a safety device to hold the hammer to prevent premature explosion of a shell during the operation of ejecting a loaded shell, which, when about to take place, the breech block A, is slightly moved backwards when the safety catch pawl 9, falls in the upper notch (46) in the hammer thereby keeping the hammer from oscillating on its pivot pin and preventing it from striking the firing pin.

The locking lever O, is pivoted to the case by a screw bolt 12, one on each side passing through the case from the outside and threaded into the two arms of the said locking lever. A thumb piece 13, is attached to the outer end of the said locking lever by a screw bolt 14, for the purpose when depressing it,

of causing the disengagement of the projection *i*, from the recess or cavity *e*, in the sliding breech block A; this is done when the breech block is required to be moved back for any purpose.

5 C, is the hammer pivoted by pin 8, to the bracket 7, of the breech block A, and to the extreme bottom of the said hammer at one end is pivoted two parallel bars (30) the opposite ends of the same being pivotally attached to a block 31, made to slide in a tube 10 32, underneath, parallel with and secured to the gun barrel 33, and case.

34, is a rod attached to the block 31, at one 15 end, and the outer end made to pass through a sliding block 35, in the forward end of the tube and be held from going farther forward by a pin 15, through the said rod. A spiral main spring 36, is made to surround the said 20 rod 34, in the tube 32, between the two sliding blocks 31, and 35, this spring acts as a motive power to drive the hammer against the firing pin when the trigger pawl 26, releases the hammer C.

25 37, 37, are two screws which hold the front sliding block 35, their heads made to project through a horizontal slot 40, on each side of the tube 32, and through the hand grip 38 surrounding the tube 32. The short tube 32, 30 is held to the gun at the forward end by a threaded bolt 18, screwed into the rigid post 16, and the end of the tube 32, stopped with a wooden plug 17, and guard 39, the said bolt 18, securing the said parts together.

35 23, is a projection on the inside of one of the arms of the locking lever O, and is for the purpose of a stop action of the trigger when the said locking lever O, is depressed, which, when done, so causes the said projection 40 23, to come in front of the trigger arm 22, of the trigger 21, and thus prevent the trigger from being pulled.

When the stop action is removed by elevating the locking lever to its normal position as in Fig. 1, the trigger arm 22, is drawn 45 forward under the projection 23, and stops the action or depression of the said locking lever O, and holds the parts in a positive position while the gun is being fired.

50 26, is a trigger pawl pivoted to double lugs 52 of trigger frame made to engage with the lower notch 48, of the hammer, and is pivotally connected to the lug 28, on the trigger by connecting bars 25, so that when pulling 55 the trigger 21, backwards, the said pawl 26, is thrown forward out of engagement with the said notch 48, of the hammer C.

27, is the trigger actuating spring secured by a screw 47, to the trigger frame 24, the 60 rear end impinging on a lug 28, of the trigger, for the purpose of throwing the arm 22, backwards, which has the effect of causing the pawl 26, to engage with the notch 48, of the hammer C, when the latter is in a cocked 65 position.

49, and 50, are pins for securing the trigger frame 24, to the case.

39, is a guard on the end of tube 32, for the purpose of keeping the hand grip 38, from being accidentally pushed backwards 70 when it is not desired to be.

20, is a small pin made to pass into a slot in the side of the breech block A, for the purpose of catching on the rim of the cartridge (51) to eject it after firing. 75

The practical operation of my safety gun may be described as follows:—Suppose the gun to be unloaded and it is desired to load and fire it, the first thing to be done is to depress the thumb piece 13, of the locking 80 lever O, which oscillates on its pivot screws 12, inside of the main case, thereby causing the projection *i*, on the upper side of the said locking lever to disengage from the breech block recess *e*, also the depression of the rear 85 end of the locking lever O, causes stop action block 23, to come in front of the projecting arm 22, of the trigger and engage with the same thereby stopping the action of the trigger. The breech block is then drawn back 90 for the purpose of putting a cartridge in its chamber.

The rearward movement of the hand grip 38, causes the forward slide 35, (connected by screws 37 to the said hand grip) to move 95 rearward which in turn operates on the spiral main spring 36, to compress it, the said main spring 36, in turn thrusts the rear slide 31, rearward, and thence the connecting bars 30, pivotally connected to the said slide 100 and to the hammer C. The thrust rearward of the said bars causes the hammer C, with breech block A, and all of the parts connected therewith and attached to the breech block A, and bar 34, inside of main spring 105 36, to move rearwards thereby sliding back and opening the breech block A, of gun, the cartridge is then placed in the cartridge chamber of the gun, after which the breech A, is required to be slid forward to a closed 110 position which is done by pushing the hand grip 38, forward, which causes the forward slide 35, to engage with pin 15, in the forward end of the pull bar 34, thereby pulling upon said bar, which in turn pulls on the 115 breech block A, through the several connections of the same. When the breech block is pulled to closed from open position, if the hammer is in an uncocked position, it will oscillate on its center pivot bringing it 120 to a cocked position and causing the safety catch pawl 9, to engage with the upper notch 46, of the hammer. When the breech block A, is drawn to a closed position the 125 extractor hook 3, is caught on the flange of the cartridge and the safety catch pawl 9, is raised or disengaged from the notch 46, in the hammer by the small wheel or roller 11, coming in contact with the incline 43, on the 130 main case. When the breech block A, is in

closed position and the gun ready to be fired, the trigger pawl 26, is engaged with the notch (48) in hammer, the locking lever O, is also returned to its normal position, its projection *i*, engaged with the recess *e*, in the breech block A, by the upward thrust of the small spiral spring 41, underneath it at its rear end. The gun being now cocked and ready to be fired, the gunner pulls the hand grip 38, rearward to its full stroke, thereby causing the main spring 36, to be powerfully compressed while the remaining parts are at rest with the exception of the forward slide 35, which is slidably attached to the said hand grip by two screw bolts 37. The stationary position of the remaining parts, when the spiral power spring 36, is compressed, is caused by the trigger pawl 26, being caught in the notch (48) of hammer. The trigger is pulled when the arm 22, of the trigger is drawn under the stop action block 23, on the locking lever O, which prevents the said lever from being depressed or disengaged from the breech block A. Simultaneously the trigger pawl 26, is released from the notch (48) in the hammer, through the connecting bars 25, being connected to and between the said trigger pawl and trigger; and the pressure caused upon the rear slide 31, by the compression of the spiral main spring 36, causes the hammer to oscillate on its center pivot pin 8, bringing the striking part of the hammer in contact with the firing pin 1, with sufficient force to explode the percussion primer of the cartridge.

After the gun is fired, if the hand grip 38 is held rigid the expansive force of the spiral main spring 36, is only partly spent, the remaining reserve power of the said main spring will cause the shell to be ejected by depressing the thumb piece 13, which disengages the locking lever O, from the breech block A, allowing the main spring to push back the breech block, at the same time the extractor hook 3, attached to it, draws the shell out of the cartridge chamber of the barrel, the small pin 20, in the breech frame assisting to tip up the shell as it comes against the pin, when it will be thrown out without turning the gun over on its side. The aforesaid power of the main spring 36, operated by the hand grip 38, will eject a loaded cartridge from breech of gun, when the hammer is in a cocked or uncocked position without exploding it; to do so, the thumb piece 13, of the locking lever O, is depressed and when the breech block starts to move rearward, the safety catch pawl 9, instantly engages with notch (46) in hammer C, in a manner that it cannot strike the firing pin 1; the wheel or roller 11, on the forward end of the safety catch pawl 9, is released from the incline 43, on the main case thereby allowing it to descend and catch

in the upper notch 46, of the hammer C, before the trigger pawl 26, leaves the lower notch 48, of the hammer.

It will be observed that the safety catch pawl 9, is for the prevention of accidental discharge of a loaded cartridge when in the act of removing the same from the breech of gun, and is a very essential part of my safety mechanism. The guard 39, on the forward end of the tube 38, surrounding the end of the hand grip is also of much importance as it will prevent the hand grip from being driven or drawn back accidentally. Thus it will be seen that my gun is absolutely safe against premature and accidental discharge, which by its use would prevent the great annual loss of life which is caused by the premature explosion of ordinary fire arms.

It will be observed that the roller 11, on the catch 9, could be dispensed with by making the end of the latter at a suitable angle to ride up on the incline plane to disengage the hook from the hammer.

Having thus described my device and its advantages, what I claim as my invention and desire to secure by Letters Patent, is,—

1. In a breech loading safety fire-arm, a locking bolt pivoted at one end to the interior of the gun case, constructed with a projection to lock the trigger, a thumb piece to depress the locking lever, a projection to enter and lock the breech block, and a spring connecting the locking bolt and the case under it, to return the locking bolt to its horizontal position after being depressed by the thumb piece, for the purpose specified.

2. In a breech loading safety fire-arm, a trigger having a rigid up-standing arm and a pivoted locking bolt having a projection thereon to engage said trigger arm and lock the trigger when the locking bolt is depressed and the said projection comes in front of the trigger arm and locks the trigger, to prevent premature explosion of cartridge, as specified.

3. In a breech loading safety fire-arm, a trigger pawl (26) pivotally attached to the trigger frame and connected to the trigger by connecting bars, the said pawl made to engage with a notch in the hammer, until released and a flat spring under the said connecting bars made to impinge on a lug (28) of the trigger to throw the trigger arm (22) backwards to cause the said pawl to engage with a notch (46) of the hammer (C) substantially as and for the purpose specified.

4. In a breech loading safety fire-arm, in combination with the hammer, and breech block, of lugs formed on the breech block, a hooked catch pawl (9) pivotally attached to the lugs, a roller (11) pivotally secured to the said catch pawl, an incline plane formed in the case to receive the said roller

and disengage the hook of the pawl from the hammer, and a spring made to impinge on the said catch pawl, substantially as and for the purpose specified.

5 5. In a breech loading safety fire-arm in combination with an oscillating hammer, an auxiliary tube (32) attached to the stock and barrel, a rear sliding block (31) in the said tube, a pair of horizontal bars (30) piv-
10 otally connected to the hammer, and to the said sliding block, a forward sliding block (35) also inclosed in the said tube, a horizontal rod (34) made to connect both front and rear sliding blocks, a stop pin (15)
15 through the said rod at the outer end of it, a spiral main spring (36) made to surround the said rod (34) between the rear sliding block, and the front sliding block, a sliding hand grip (38) made to surround the outer
20 portion of the auxiliary tube (32) and slide on the barrel of the gun, a horizontal slot (40) formed on each side of the tube (32), a screw 37 made to pass through each of said slots and into the forward sliding block
25 (35), so that the sliding block can move back and forth to compress the main spring and oscillate the hammer.

6. In a breech loading fire-arm, comprising a sliding breech block, an oscillating
30 hammer pivoted to the breech block, a

hooked safety catch pawl pivoted to the breech block to engage with a notch in the hammer to hold it, a power main spring, (inclosed in a secondary tube) connected to the hammer, and inclosed between two slides 35 in said tube, a hand grip surrounding said tube to slide on the barrel of the gun to compress the said spring to produce power to actuate the hammer, a pivoted locking lever with devices attached to lock the breech 40 block, a spring to push the locking device into engagement with the breech block, a trigger stop action block on the locking lever, an arm attached to the trigger to operate with the inner projection (23) of the 45 locking lever for a stop trigger action, a pawl (26) attached to the trigger by connecting bars, a hook to catch the cartridge, a pin made to project into a groove in the breech block to tilt the forward end of the 50 cartridge upwards when the bottom rear part of the cartridge comes in contact with the pin on the drawing back of the breech block, to eject the cartridge after firing.

Dated at Hamilton, Ontario, Canada, the 55 21st day of June, 1907.

ORLANDO E. SCOTT.

Signed in the presence of—

W. E. HEDGES,

WM. BRUCE.