

No. 894,530.

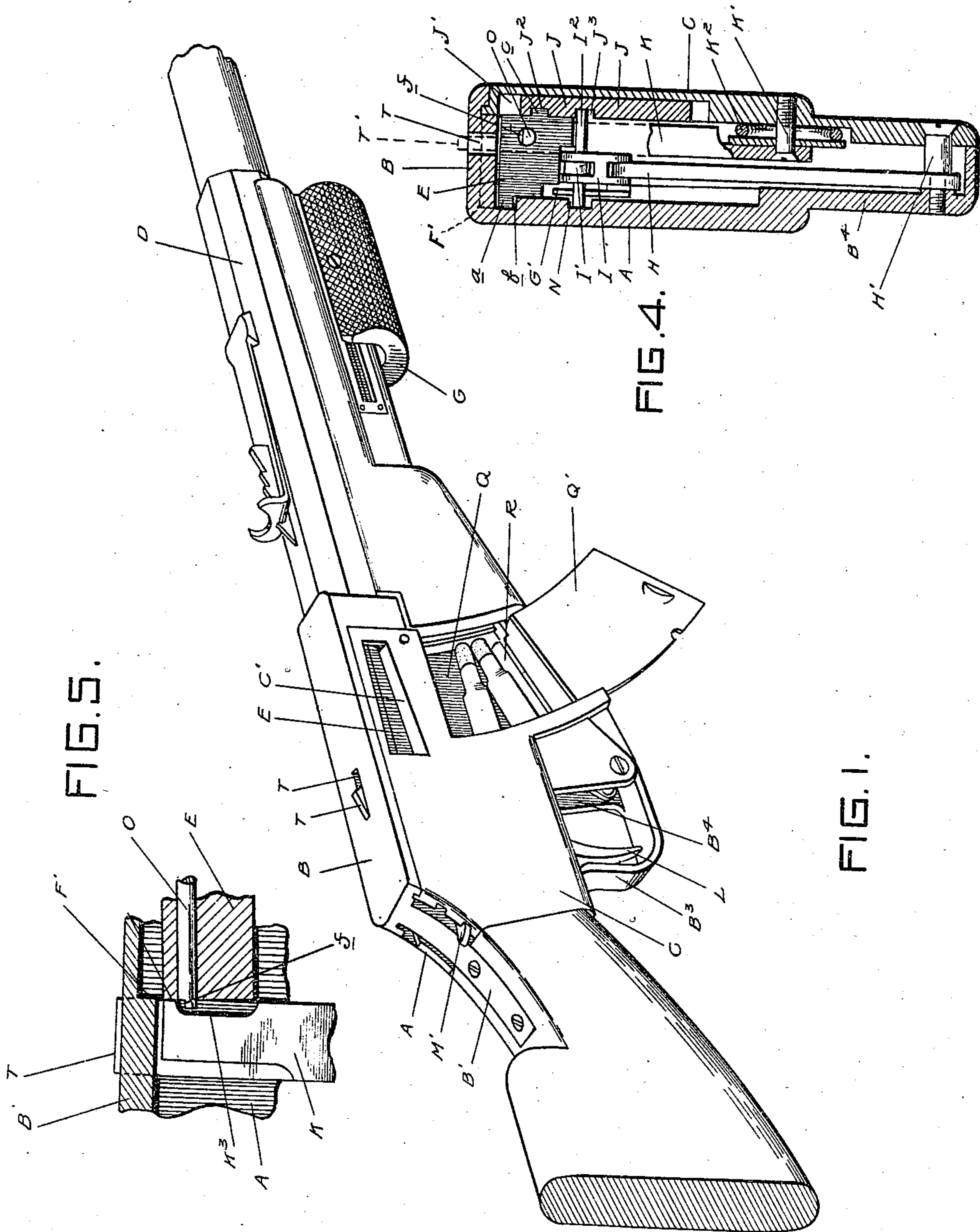
B. W. PUNCHES.

PATENTED JULY 28, 1908.

GUN.

APPLICATION FILED OCT. 21, 1905.

3 SHEETS—SHEET 1.



WITNESSES
Geo. H. Gurnea
James O. Barry

BY

INVENTOR
BERT W. PUNCHES
James Whittington

ATTY.

No. 894,530.

B. W. PUNCHES.
GUN.

PATENTED JULY 28, 1908.

APPLICATION FILED OCT. 21, 1905.

3 SHEETS—SHEET 2.

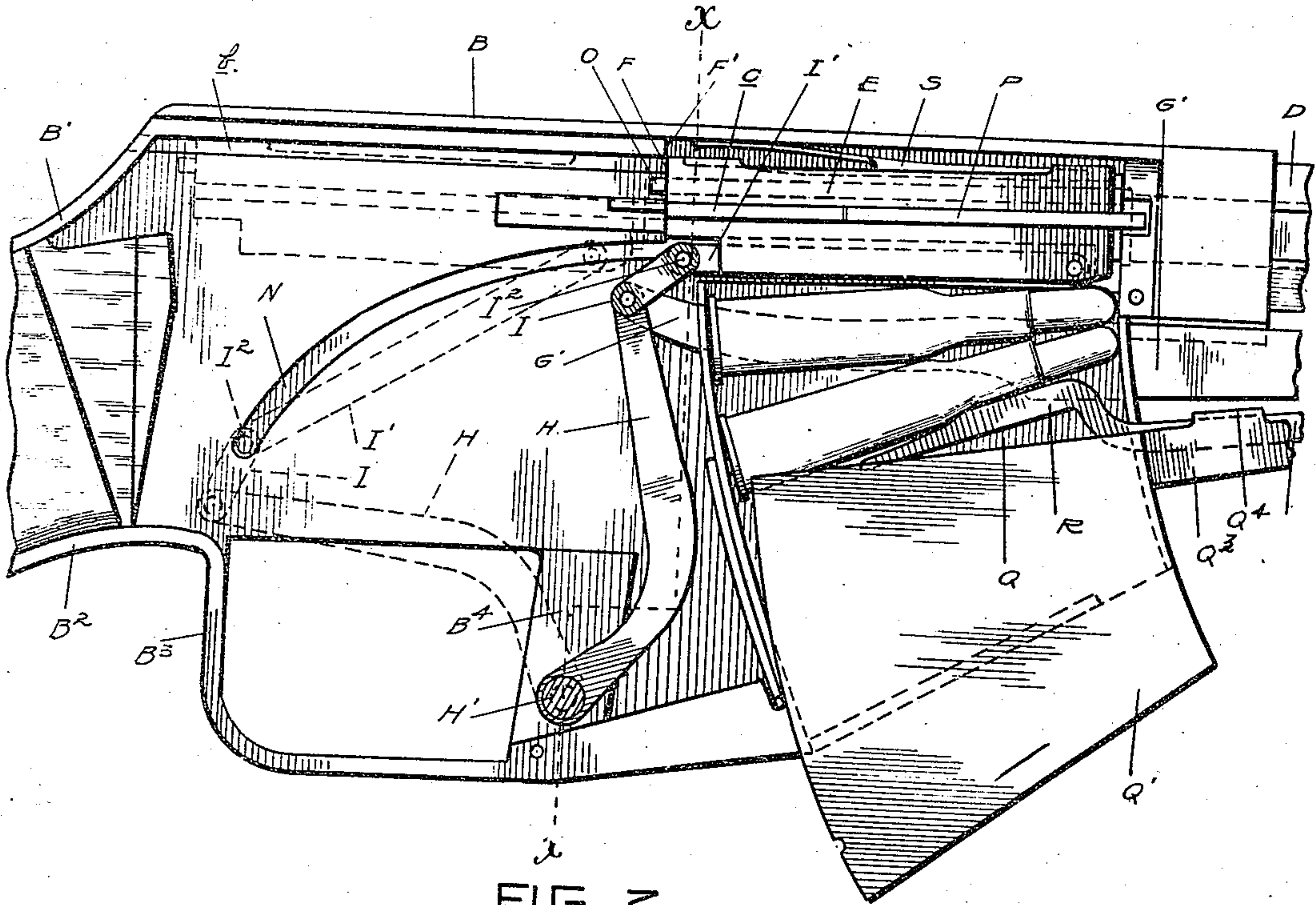


FIG. 2.

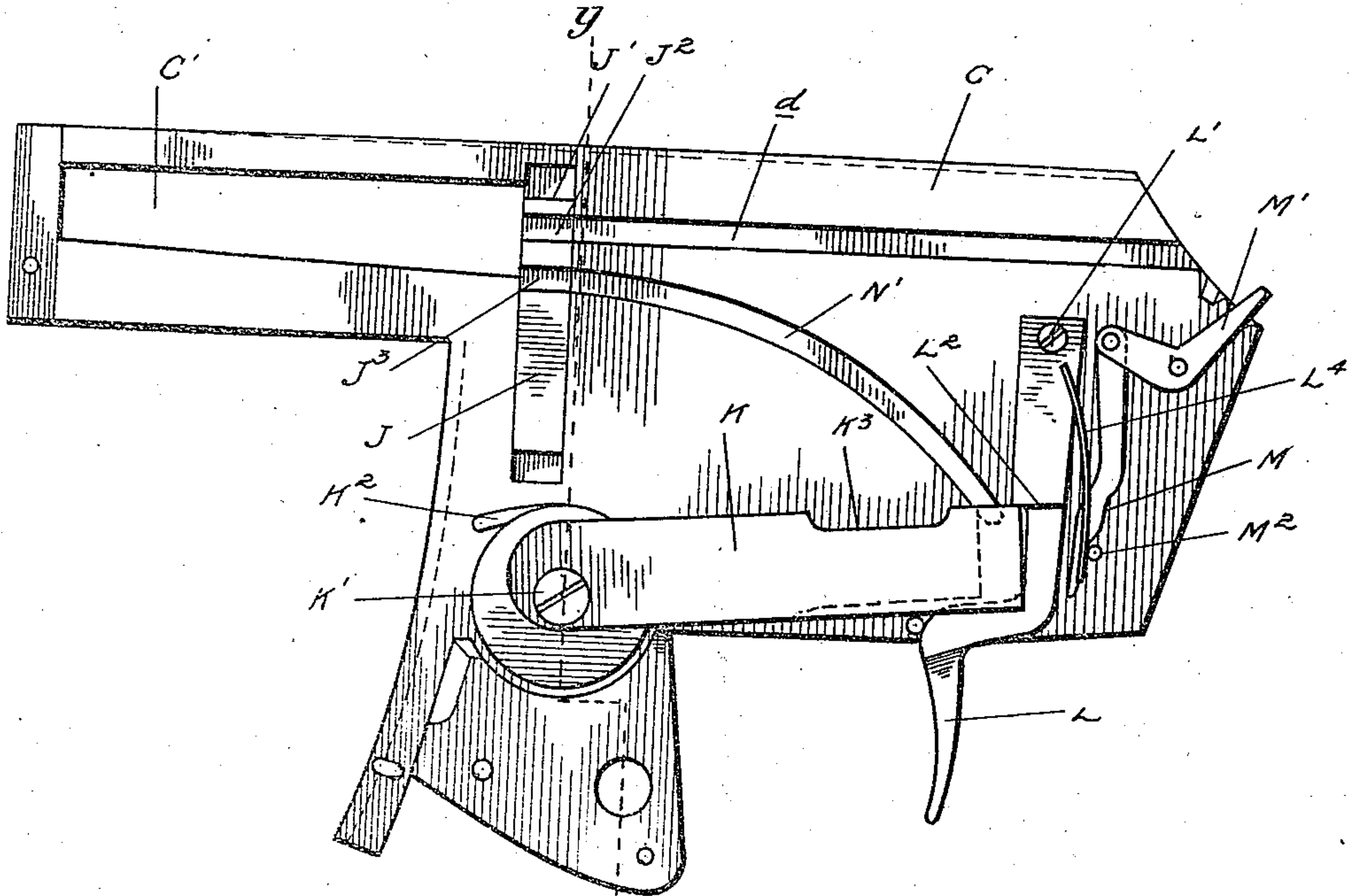


FIG. 3.

WITNESSES
Geo. H. Langer
James O. Barry

BY

INVENTOR
BERT W. PUNCHES.
James Whittier

ATTY.

No. 894,530.

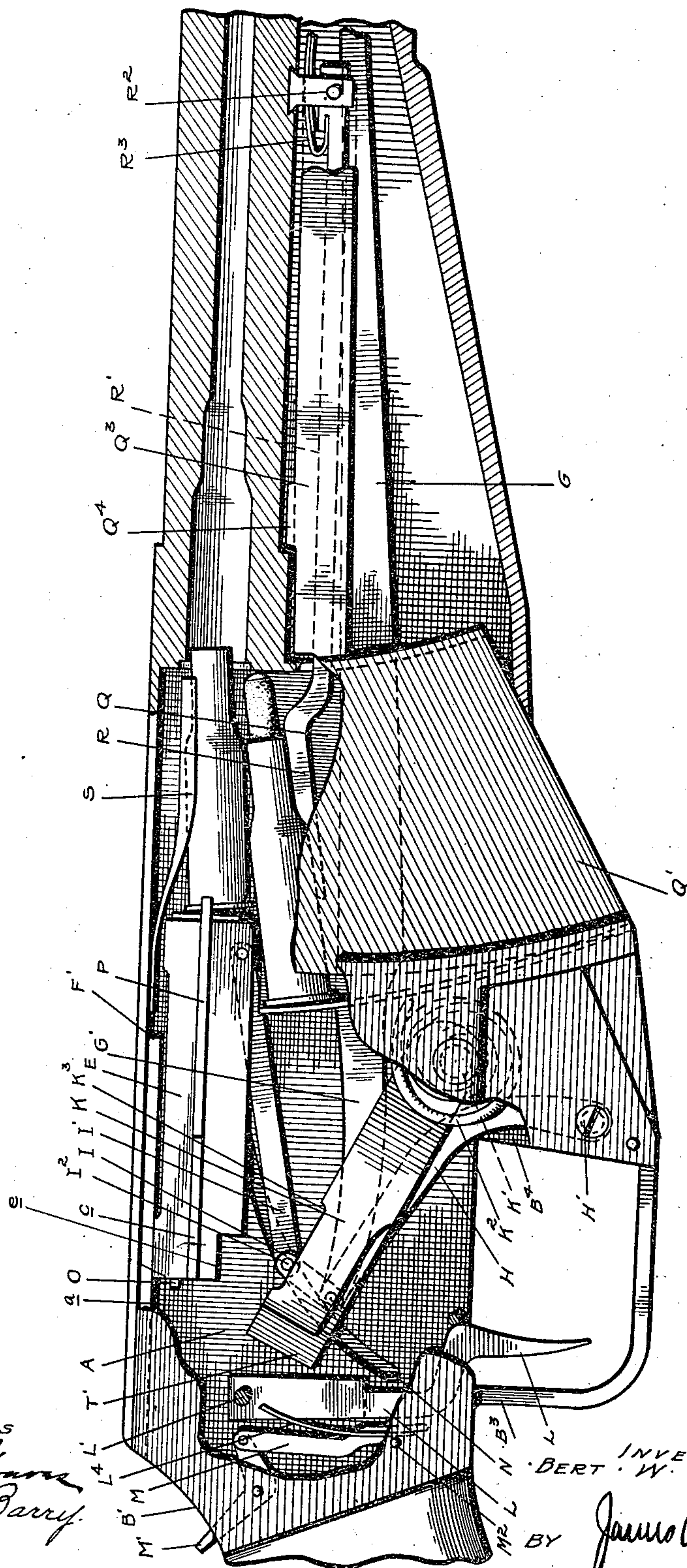
B. W. PUNCHES.
GUN.

PATENTED JULY 28, 1908.

APPLICATION FILED OCT. 21, 1905.

3 SHEETS—SHEET 3.

யி
யி
யி



WITNESSES

Geo. M. Gunn
James P. Barry.

INVENTOR

BERT W. PUNCHES.

BY

James Whitmore

ATTY

UNITED STATES PATENT OFFICE.

BERT W. PUNCHES, OF TOLEDO, OHIO.

GUN.

No. 894,530.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed October 21, 1905. Serial No. 283,722.

To all whom it may concern:

Be it known that I, BERT W. PUNCHES, a citizen of the United States of America, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Guns, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to guns and has more particular reference to constructions of relatively large caliber and the invention consists in certain novel features of construction as hereinafter set forth.

Figure 1 is a perspective view of a portion of the gun; Fig. 2 is a side elevation of the frame, with the detachable plate thereof removed; Fig. 3 is an elevation of the detached plate, looking at its inner face; Fig. 4 is a cross section taken substantially in the plane indicated by the lines $x-x$ and $y-y$ of Figs. 2 and 3; Fig. 5 is a detail view, illustrating the safety appliance for preventing accidental firing; Fig. 6 is a sectional elevation of the frame and magazine, showing the parts in a different position from Fig. 2.

Among the particular objects of the present invention are, first, the reduction of the length of frame; second, the incasing of all the mechanism in a practically-closed housing with the opening for the ejected shells at the side of the frame; third, the provision of a breech-actuating mechanism which is operable while the gun is held in firing position and one in which the breech-block, when closed, is rigidly locked to the frame; fourth, a compact arrangement of magazine within the frame and opening at the side.

To these ends the invention consists in the novel construction, arrangement and cooperation of the parts of the mechanism as hereinafter described and particularly set forth in the claims.

By attaining these objects I am able to use a relatively longer barrel without increase in the total length of the gun and the mechanism is protected from dust and dirt.

The frame of the gun comprises a side plate A, a top plate B preferably integral, together with an opposite side plate C which is detachable. The top plate B is provided with a downwardly and rearwardly-extending shank B' which is secured to the stock, while a complementary shank B^2 is attached to the lower side of the stock and is fashioned to form a trigger guard B^3 secured to the

plate A by the upwardly-extending portion B^4 . The top plate B extends the full width of the frame throughout its entire length and thus, when the barrel D is secured to this top plate and the side plate A, a strongly-braced connection is formed between the same and the stock.

E is the breech-block which is longitudinally slidable within the frame, being guided by a flange a engaging a channel b cut in the frame plate A adjacent to the top plate and, further, by the flange c on the opposite side of the block engaging a longitudinal channel d in the detachable frame plate C. The block is locked in closed position by a rigid shoulder F' depending from the top plate B, the rear end of the block abutting against this shoulder and being engaged and disengaged therefrom by a vertical movement. This vertical movement is permitted by a lateral enlargement of the guide channel b in the forward portion thereof, while the channel d in the plate C terminates in an aperture C' in the plate C, through which the shells are ejected and which is opposite the breech-block in closed position.

As has been stated, it is one of the objects of the construction to provide an actuating mechanism for the breech-block and associated parts, which is readily operable while the gun is held in firing position. I therefore replace the actuating-lever (usually employed with guns of relatively large caliber) by a sliding handle G such as frequently used on small caliber guns. It is, however, necessary in retracting the breech-block, first, to draw it downward out of engagement with the shoulder F' so as to permit it to slide rearward in the guide channels b and d and it is equally important to provide means for positively engaging the block with said shoulder and rigidly locking it in this position when in condition for firing. These two functions are performed by a toggle lever construction comprising an arm H pivoted to the pin H' , preferably engaging the portion B^4 of the frame, and a toggle link I pivoted to said arm. The opposite end of the toggle link I is pivotally connected to a link I' extending longitudinally of the block E and pivotally attached to the forward end thereof. A bearing e is also formed on the lower side of the block E, against which the end of the link I abuts when the toggle is straightened, and the proportion of the parts

is such that the breech-block will be pressed into full engagement with the shoulder F' when the members H and I are arranged with their pivots in alinement.

5 G' is a rod pivotally connected to the knuckle of the toggle and extending to the actuating-handle G . The direction of this rod is substantially at right angles to the line of the pivots in the straightened position of the toggle levers and thus it is apparent that
10 when the handle G is drawn rearward, the first action will be to break the joint of the toggle lever and permit the downward movement of the breech-block E . A further
15 rearward movement of the handle will, after the breech-block is disengaged from the shoulder F' , draw said block rearward, the angular movement of the arm H being compensated by the downward swinging of the
20 link I' .

Before the breech-block E can be moved backward as just described, it must be disengaged from the shoulder F' . For this purpose, I provide positive actuating mechanism which, as shown, consists in a vertically
25 slidable member J preferably engaging a guide slot J' in the inner face of the detachable side C of the frame. This slide or couple J is provided with a groove J^2 which, in one
30 position of the slide, is in alinement with the channel d . The slide is further provided with a groove J^3 below the groove J^2 and which engages the projecting end of the pivot I^2 connecting the links I , I' . The arrange-
35 ment is such that when the toggle levers are actuated by the rod G' as has been described, to break the joint and draw the link I downward, this movement will communicate a downward sliding movement to the slide J
40 through the medium of the pin I^2 and by reason of the engagement of the flange c on the breech-block with the groove J^2 in the slide, said breech-block will be positively drawn downward with the link.

45 The firing mechanism comprises a concealed hammer K which is arranged between the side plates of the frame and is preferably pivoted, as shown at K' , to the detachable side plate C .

50 K^2 is a coil spring surrounding the pivot K' and connected to the plate C and hammer K , so as to place the spring under tension when the hammer is drawn downward in cocked position, as shown in Fig. 3.

55 L is the trigger which directly engages with the hammer in cocked position and which also is preferably pivotally attached to the side plate C , as at L' . The trigger L is shouldered at L^2 to engage with the hammer
60 and is yieldably pressed towards the hammer by the spring L^4 . A trigger lock is provided which, as shown, comprises a notched member M connected to one end of a finger lever M' which is pivoted to the plate C and the actuat-
65 ing end of which projects outward through

a slot adjacent to the shank B' of the frame. This notched member coöperates with a stationary pin or shoulder M^2 upon the plate C , the arrangement being such that when the
70 finger lever M' is moved in one position, the member M will be inserted between the stop M^2 and the trigger, preventing actuation of the latter.

The hammer K is cocked during the rearward movement of the breech-block by engagement of the pin I^2 therewith. This pin,
75 as has been already described, projects beyond the links I , I' , one end thereof engaging a segmental channel N in the plate A and the opposite end engaging a corresponding seg-
80 mental channel N' in the plate C . These two channels serve to guide the path of the pin and link I during the swinging of the arm H under the actuation of the rod G' and the path of movement is such as to carry down-
85 ward the hammer K until it engages with the shoulder L^2 of the trigger. The reverse movement of the rod G' will return the breech-block and toggle lever, as has been
90 already described, removing the pin I^2 from the path of the hammer and permitting the latter when disengaged from the trigger to swing upward under the actuation of the spring K^2 , striking the firing pin O which
95 projects rearward beyond the breech-block.

To prevent accidental firing before the breech-block is in position, *i. e.* in full engagement with the shoulder F' and locked by the straightening of the toggle lever, the
100 hammer is cut away at K^3 . Thus, when the breech-block is turned downward out of engagement with the shoulder F' , the blow of the hammer, if released, will be delivered against the rear end of the breech-block, the projecting end of the firing pin O entering
105 the recess K^3 and receiving no impact. The necessary clearance for the firing pin is further provided by cutting away a portion of the projecting end of the latter, as indicated
110 at f .

The side plate C of the frame is detachably secured in position, preferably by a tongue and groove engagement of the upper edge thereof with the top plate B and by a secur-
115 ing screw which forms the pivot H' . When in position, the trigger and hammer will be arranged in proper operative relation to the other parts of the mechanism, clearance being provided for the independent movement of
120 the swinging arm H by arranging the plane of the latter at one side of the plane of the hammer K . This construction, in which a portion of the mechanism is mounted on the detachable plate, avoids complications and
125 simplifies the assembling of parts. The breech-block is provided with the usual extractor P which operates, during the rearward movement of the block, to throw out the shell through the aperture C' in the plate C .

The construction as thus far described 130

may be employed in guns which are either with or without a magazine. I have, however, illustrated a construction of magazine which is particularly adapted for the constructions of gun above described and which is compactly arranged in relation to the other parts of the operating mechanism. As shown, this magazine is in the form of a segmental casing Q arranged beneath the breech-block in closed position and provided with a sliding cover Q' forming one side thereof.

R is a follower for moving the cartridges upward in the magazine Q, this being formed at the end of the lever R', which is pivotally attached at R² to the lower side of the barrel.

R³ is a spring for actuating said lever R' to place an upward tension on the follower.

S is a spring secured to the under side of the top plate B of the frame above the magazine, said spring being of the curved cross section shown adapted to receive the uppermost cartridge when the breech-block is retracted and to direct the same into the barrel when the breech-block travels forward. The sliding cover Q' of the magazine is preferably attached to a lever Q³ which is secured to the pivot R² which engages the lever R'.

With the construction just described, the magazine may be loaded by merely drawing downward the slide Q' which permits of placing a series of cartridges within the magazine. To facilitate this operation, a lug Q⁴ is arranged on the lever Q³ which engages with the lever R' of the follower so that the operation of drawing down the slide will simultaneously retract the follower. Thus, the follower will always be arranged beneath the cartridges and, when the latter are in position, the slide may be closed, moving independently from the follower and permitting the latter to move automatically under the actuation of the spring when the breech block is retracted and the empty shell is ejected.

This construction of magazine permits of loading the gun at any time with single cartridges, holding the magazine in reserve. Thus, when the magazine is full, after the firing of the first cartridge and its ejection by partially drawing down the slide Q', another cartridge may be inserted in the magazine to take the place of the one used.

By reason of the closed top of the frame, the hammer K is concealed from view but to indicate the position of the hammer, slot T is formed in the top of the frame and the hammer is provided at its end with a projecting flange T' which passes into said slot when the hammer is in upright position. Thus, when the hammer is cocked, this flange will be withdrawn and its absence will indicate to the user the condition of the hammer.

What I claim as my invention is:

1. In a gun, the combination with a barrel

and frame, of a breech-block mounted in said frame for longitudinal reciprocation, a shoulder on said frame with which the rear end of said breech-block engages in closed position, a toggle lever secured to said frame extending transversely of said breech-block, and adapted when straightened to press the block into engagement with said shoulder, a link connecting said toggle to said block, and a slidable handle connected with the knuckle of said toggle adapted to first fold said toggle to disengage said block from said shoulder and then actuate said block rearward.

2. In a gun, the combination with a barrel and a frame, of a breech-block mounted for longitudinal reciprocation in said frame, a shoulder on said frame with which the rear end of said breech-block engages, a toggle lever pivoted at one end to said frame and extending transversely to said breech block having a bearing thereon, whereby the straightening of the toggle will press said block into engagement with said shoulder, a link connecting said toggle to said block, a reciprocatory rod connected to the knuckle of said toggle, whereby it may be folded to permit the disengagement of said block from said shoulder, and a couple between said toggle and block for positively drawing the latter downward upon the folding of said toggle.

3. In a gun, the combination with a barrel and frame, of a breech-block mounted for longitudinal reciprocation in said frame, a shoulder on said frame with which said breech-block engages, a toggle lever pivoted to said frame and arranged to clear said block in engagement with said shoulder when the toggle is straightened, a link connecting said toggle with the breech block, a rod connected with the knuckle of the toggle for actuating the same to first disengage the block from said shoulder and then move the same rearward, and a segmental guide for said toggle in its rearward movement.

4. In a gun, the combination with a barrel and frame, of a breech-block mounted for reciprocation in said frame, a shoulder on said frame for engaging said breech-block, a toggle lever for holding said block in engagement with said shoulder pivotally secured at one end to said frame, a rod connected to the knuckle of said toggle, whereby it may be actuated to swing about its pivot on the frame, a link connecting said toggle and breech-block, a hammer pivoted to said frame having its axis adjacent to the pivot of said toggle, and means of engagement between said toggle and hammer, whereby in the rearward movement of said rod, said hammer will be swung upon its pivot.

5. In a gun, the combination with a barrel and a frame, of a breech block mounted for longitudinal reciprocation in said frame, a shoulder on said frame with which the rear end of said breech block engages, a toggle

lever pivoted at one end to said frame and extending transversely to said breech block, means connecting the other end of said toggle lever to said breech block, a reciprocatory rod connected to the knuckle of said toggle, whereby the toggle may be folded in withdrawing the breech block to open the breech, and means for positively drawing said breech block out of engagement with said shoulder upon the folding of said toggle.

6. In a gun, the combination with a barrel and a frame, of a breech block mounted for longitudinal reciprocation in said frame, a shoulder on said frame with which said breech block engages, a toggle lever pivoted at one end to said frame and extending transversely to said breech block having a bearing thereon, whereby the straightening of said toggle will press said block into engagement with said shoulder, a link connecting said toggle to said block, a reciprocatory rod connected to the knuckle of said toggle, whereby said toggle may be folded to permit the disengagement of said block from said shoulder, and means for positively drawing said block out of engagement with said shoulder upon the folding of said toggle.

7. In a gun, the combination with a barrel and a frame, of a breech block mounted for longitudinal reciprocation in said frame, a shoulder on said frame with which said breech block engages, a toggle lever pivoted at one end to said frame and extending transversely to said breech block and having a bearing thereon, whereby the straightening of said toggle will press said block into engagement with said shoulder, a link connecting said toggle to said block, a reciprocatory rod connected to the knuckle of said toggle, whereby said toggle may be folded to permit the disengagement of said block from said shoulder, and a slide connecting said toggle and block

for drawing the latter downward upon the folding of said toggle.

8. In a gun the combination with a barrel and a stock, of a frame, a breech block carried thereby, a firing pin in said breech block, a side plate for said frame removable independent of said barrel and stock, a hammer arranged to cooperate with said firing pin and pivotally secured to and removable with said side plate, a trigger, and a trigger lock carried by said side plate.

9. In a gun, a frame, a firing pin entirely concealed within said frame, a hammer also concealed in said frame and pivotally secured thereto, a flange on said hammer and a trigger for holding said hammer in its cocked position, said frame having a slot through which said flange projects only when in its released position.

10. In a gun, a frame, a firing pin entirely concealed in said frame and pivotally secured thereto, a flange on said hammer and a trigger for holding said hammer in its cocked position, said frame having a slot in its top through which said flange projects only when released from said trigger.

11. In a gun, the combination of a frame having a receiver and a breech-block mounted for reciprocation in said receiver, a segmental magazine arranged beneath said receiver, a spring-pressed follower in said magazine for feeding the cartridges upward, a slide formed in the side of said magazine and a connection between said slide and follower, whereby the latter is retracted upon the opening of the slide.

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

BERT W. PUNCHES.

Witnesses:

THADDEUS S. POWELL,
OTTO KOELLER.