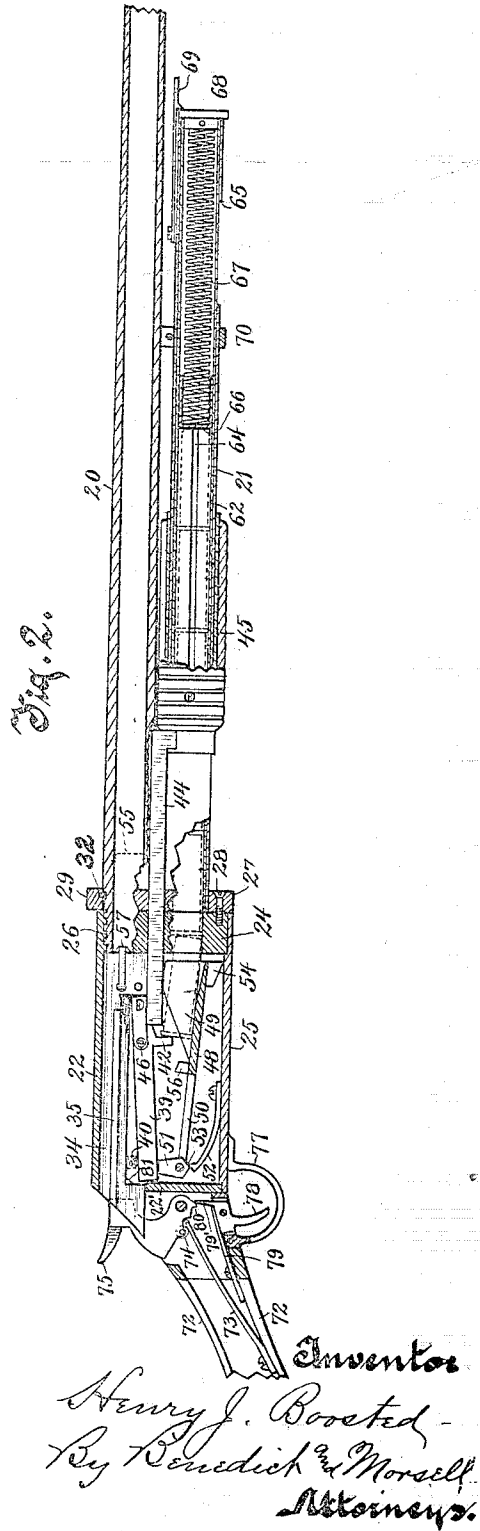
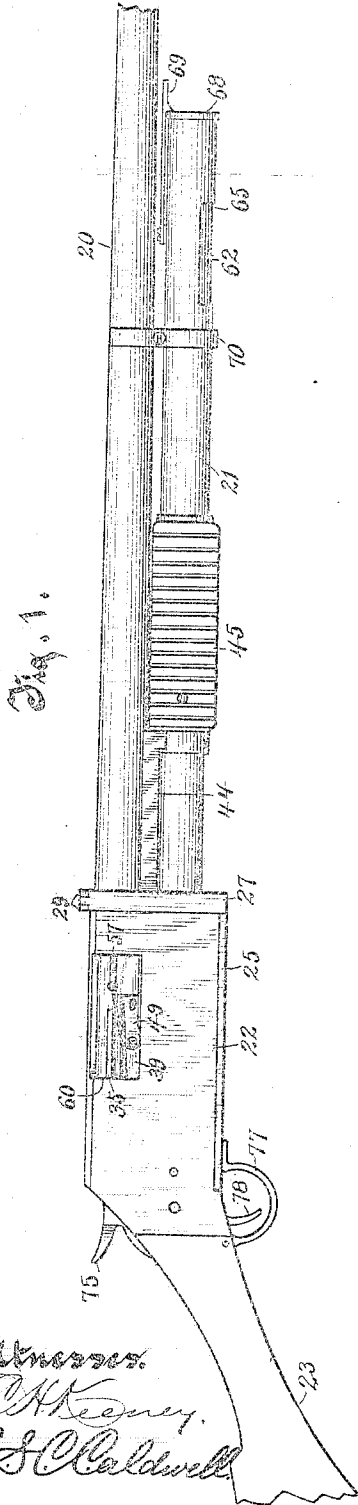


No. 830,048

PATENTED SEPT. 4, 1906.

H. J. BOOSTED.
REPEATING RIFLE.
APPLICATION FILED NOV. 29, 1905.

4 SHEETS—SHEET 1.

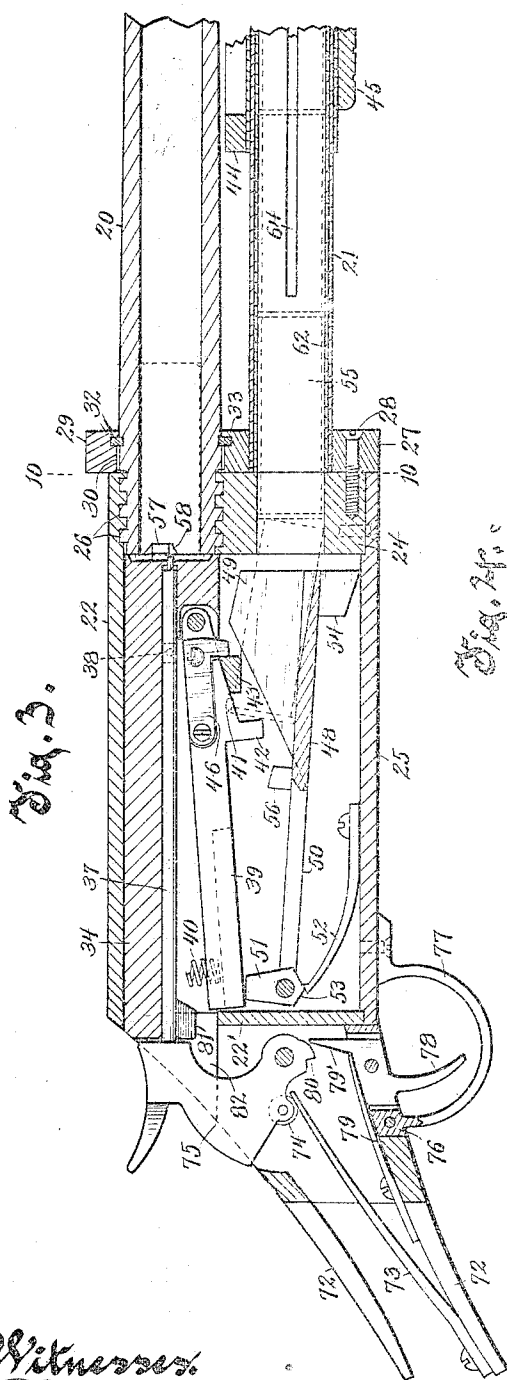


No. 830,048.

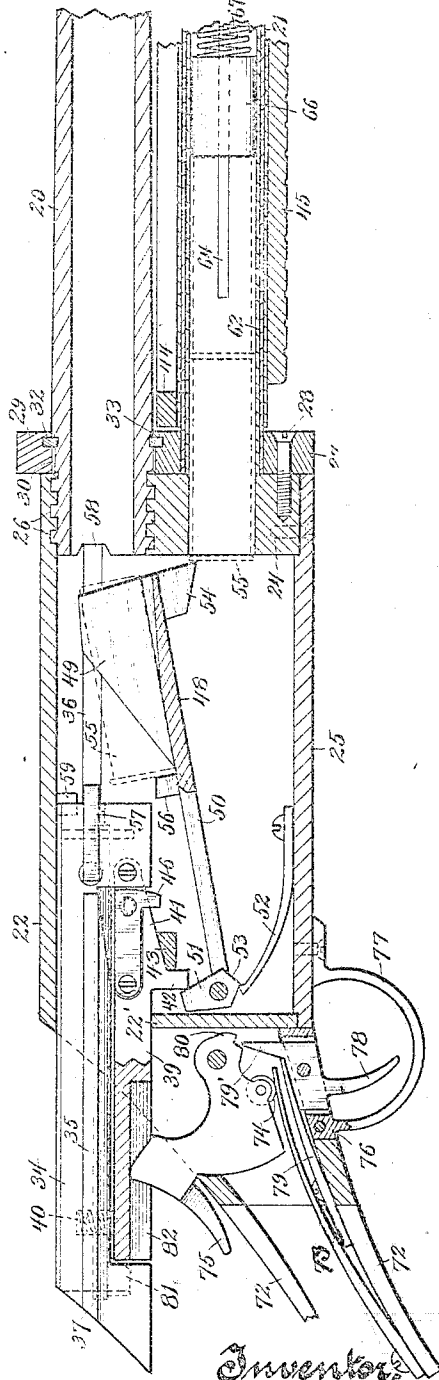
PATENTED SEPT. 4, 1906.

H. J. BOOSTED.
REPEATING SHOTGUN.
APPLICATION FILED NOV. 29, 1905.

4 SHEETS-SHEET 2.



Witnesses:
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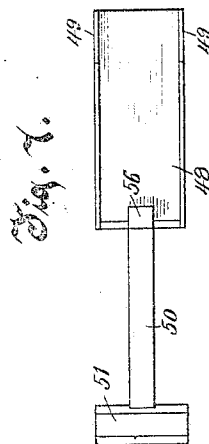
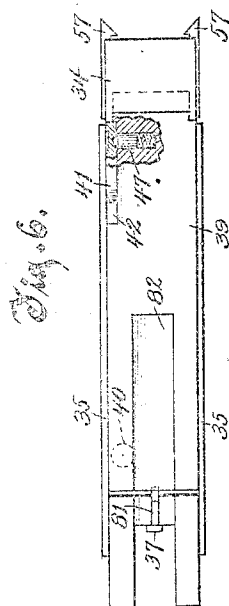
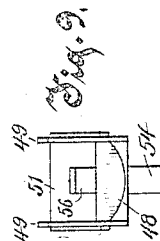
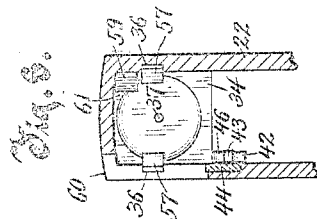
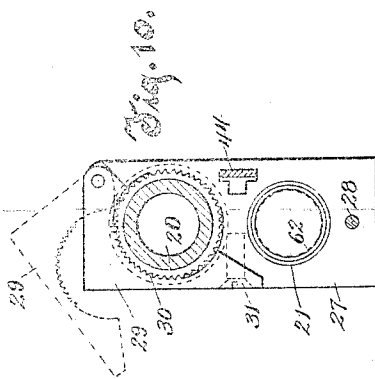
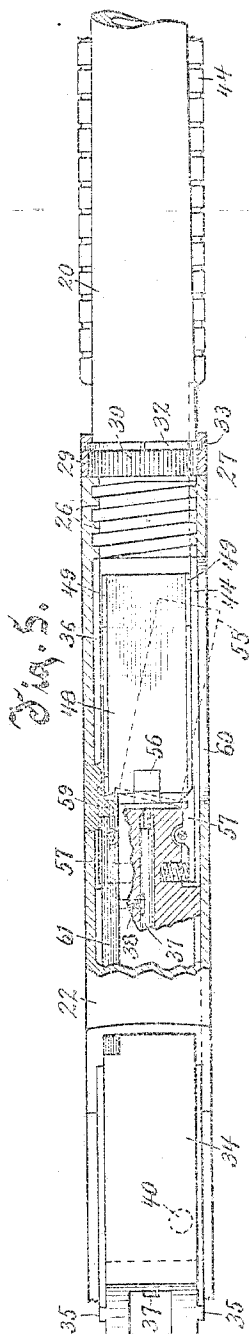
No. 830,048.

PATENTED SEPT. 4, 1906.

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APPLICATION FILED NOV. 29, 1905.

4 SHEETS—SHEET 3.



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PATENTED SEPT. 4, 1906.

H. J. BOOSTED.
REPEATING SHOTGUN.
APPLICATION FILED NOV. 29, 1905.

4 SHEETS—SHEET 4.

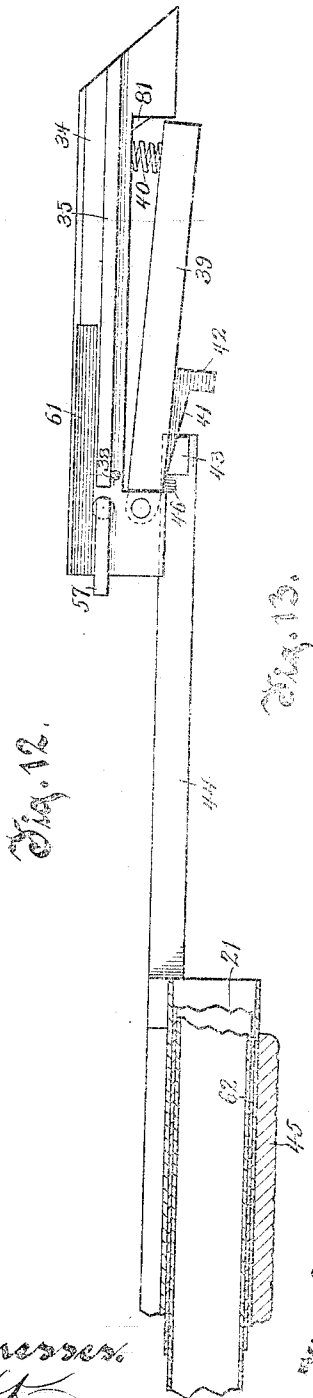


Fig. 12.

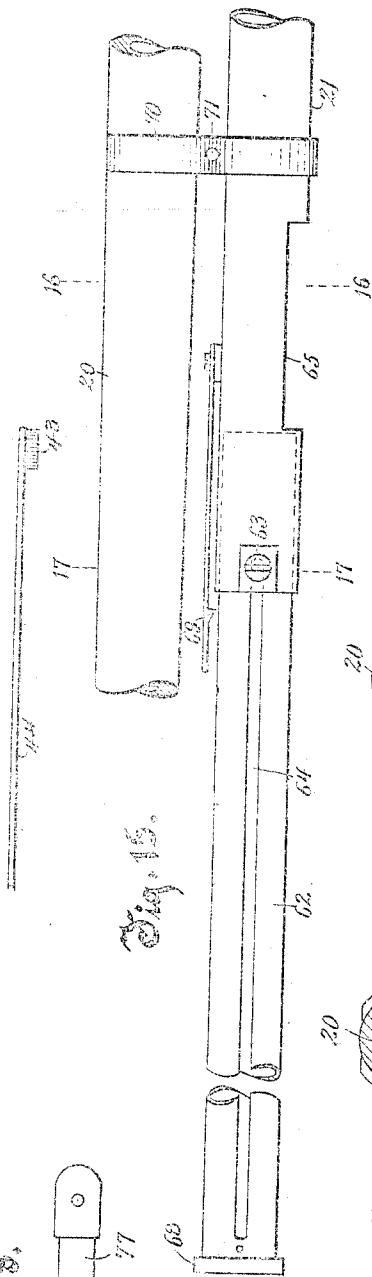


Fig. 13.

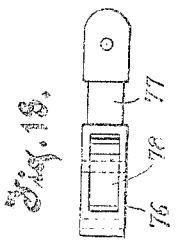


Fig. 14.

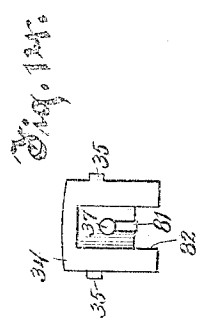


Fig. 15.

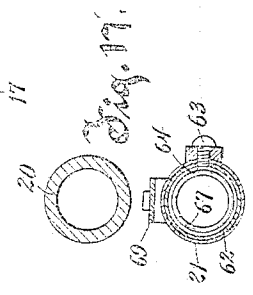


Fig. 16.

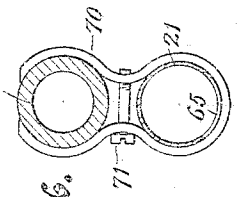


Fig. 17.

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UNITED STATES PATENT OFFICE.

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REPEATING SHOTGUN.

No. 880,048.

Specification of Letters Patent.

Patented Sept. 4, 1906.

Application filed November 29, 1905. Serial No. 289,593.

To all whom it may concern:

Be it known that I, HENRY J. BOOSTED, residing in Kenosha, in the county of Kenosha and State of Wisconsin, have invented new and useful Improvements in Repeating Shotguns, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to repeating shotguns, and has for its object to provide a shotgun of this type with a construction by which it may be rigidly connected when in use and readily separated or taken down when desired to be capable of a compact arrangement of its parts for convenience in carrying it from place to place.

Another object of this invention is to improve upon the breech-block operating and locking mechanism, the shell-ejector, the shell-lifter, the lock mechanism, and the magazine, whereby a take-down repeating shotgun is produced with few parts, is strong and simple in its construction, and the parts can be readily disconnected for cleaning purposes.

With the above and other objects in view the invention consists in the repeating shotgun herein described, its parts and combinations of parts, and all equivalents.

Referring to the accompanying drawings, in which like characters of reference indicate the same parts in the several views, Figure 1 is a side elevation of a repeating shotgun constructed in accordance with this invention. Fig. 2 is a sectional view thereof with parts shown in elevation. Fig. 3 is an enlarged sectional view of the breech mechanism with the parts shown in the positions assumed by them when the gun is discharged. Fig. 4 is a somewhat similar view showing the parts in the positions assumed by them when the breech-block is thrown to its rearmost position. Fig. 5 is a sectional plan view of the mechanism with the parts in the positions shown in Fig. 4 and representing by dotted lines the ejection of an empty shell. Fig. 6 is a bottom view of the breech-block with parts in section. Fig. 7 is a plan view of the shell-lifter. Fig. 8 is a sectional front elevation of the breech-block in its casing. Fig. 9 is a front elevation of the shell-lifter. Fig. 10 is a rear elevation of the connecting-plate, showing the open position of its clamping

member in dotted lines, parts being sectioned. Fig. 11 is a plan view thereof. Fig. 12 is a side elevation of the fore-arm and the breech-block removed from the other parts and in the closed condition of the breech-block, parts being sectioned. Fig. 13 is a plan view of the connecting-rod between the breech-block and the fore-arm. Fig. 14 is a rear elevation of the breech-block. Fig. 15 is an elevation of the magazine in its open condition. Fig. 16 is a transverse sectional view thereof on the line 16 16 of Fig. 15. Fig. 17 is a similar view on the line 17 17 of Fig. 15, and Fig. 18 is a plan view of the trigger-guard.

In these drawings, 20 represents the barrel, and 21 the magazine carried therebeneath, both being removably connected to a breech-casing 22 on an ordinary gun-stock 23. The breech-casing 22 is of a rectangular box-like formation with a heavy front end wall 24 and a removable bottom 25, the barrel 20 being threaded in said end wall 24 on screw-threads 26 and the magazine-tube 21 having an opening through said end wall registering therewith. A connecting-plate 27 is rigidly mounted on the end of the magazine-tube and is adapted to be secured to the end wall 24 by means of a bolt 28 and has a hinged clamping member 29, provided with teeth to engage with an annular series of teeth 30, formed around the barrel just ahead of its screw-threads 26. The unhinged portion of the barrel-clamp of the connecting-plate is also provided with teeth for engaging the teeth 30 of the barrel, and a screw 31 connects the clamping member to the connecting-plate to tightly hold the barrel against accidental turning after it has been screwed tightly into the breech-casing. An annular flange 32 is formed on the barrel ahead of the teeth 30, preferably by seating a ring or collar in a groove thereof, which flange is adapted to fit within a groove 33 of the connecting-plate and clamping member to form a locking engagement between the connecting-plate and the barrel.

A breech-block 34 is slidable longitudinally in the breech-casing 22 upon guide-flanges 35 on its sides, which travel in grooves 36 in the sides of the breech-casing, said breech-block being capable of passing through the rear end wall of the breech-casing in its open position and being adapted to bear against

the rear end of the barrel 20 in its closed position. A firing-pin 37 passes longitudinally through the breech-block and projects from one end or the other thereof, as usual, with its front end in position to strike the cap of the shell and its rear end in position to be struck by the hammer when the breech-block is closed. The firing-pin is confined in its movements, as usual, by a set-screw 38, passing through the side of the breech-block and entering a slot of the firing-pin.

Pivotally mounted in the lower part of the front end of the breech-block is a locking member 39, which is pressed downwardly by a coil-spring 40, located between it and the breech-block in sockets thereof. When the breech-block is closed, as shown in Fig. 3, the locking member 39 is forced downwardly by the spring 40 to engage the rear end wall 22' of the breech-casing, and thus prevent the breech-block moving rearwardly from the recoil or otherwise. The locking member 39 has a cam-surface 41 on one side near its front end with a stop shoulder or depending lug 42, with which the cam-lug 43 on the rear end of a connecting-rod 44 is adapted to engage, said connecting-rod sliding in a groove in the breech-casing and passing through registering openings in the end wall 24 and the connecting-plate 27 and connecting with a grip or fore-arm 45, which is slidable on the magazine-tube 21. The locking member is also provided with a front stop to be engaged by the cam-lug 43, and this comprises a hook-shaped slide 46, which is countersunk in the side of the breech-block and is capable of being swung upwardly out of the path of the cam-lug 43, but which is normally held in its lower engaging position by means of a spring-pressed pin 47 in the breech-block entering a notch in said slide, as shown in Fig. 6. When the breech-block is closed and the parts are in the positions shown in Fig. 3, the fore-arm 45, on being forced rearwardly toward the gun-stock, moves the cam-lug 43 along the inclined cam-surface 41 of the locking member 39 to lift said locking member out of engagement with the rear wall 22' of the breech-casing. When this is accomplished, the breech-block is unlocked and the cam-lug 43, coming into engagement with the depending stop-lug 42, moves said breech-block rearwardly on its guide-flanges 35 to the position shown in Fig. 4. The forward movement of the fore-arm 45 will now cause the cam-lug 43 to leave the stop-lug 42 and come into engagement with the front stop 46 and pull the breech-block forwardly thereby until it is again in its closed position, as shown in Fig. 3, when the locking member 39 springs down into engagement with the rear wall 22' to lock the breech-block in place.

A shell-lifter 48 with upstanding side wings 49 has its rearwardly-extending stem 50 connected to a block 51, which is pivot-

ally mounted in the sides of the breech-casing, this block 51 serving as a stop for the locking member 39 in the closed position of the breech-block, as shown in Fig. 3, and standing in the path of the depending stop-lug 42 to be engaged and moved thereby during the rearward movement of the breech-block to swing the shell-lifter upwardly, as shown in Fig. 4. A spring 52 is mounted on the removable bottom 25 of the breech-casing and bears upon one or the other of a pair of angularly-disposed bearing-faces 53 on the bottom of block 51, so as to hold the shell-lifter in either its upper or lower position with spring-pressure. At its front end the shell-lifter is provided with a downwardly-extending lug 54, which rests upon the bottom plate 25 to determine the lowermost position of the shell-lifter and which also stands in the path of the shells 55 in the magazine when the shell-lifter is in other positions, and thereby prevents the shells being fed from the magazine when the shell-lifter is not in a position to receive them. The shell-lifter is also provided with a stop-lug 56 on its upper surface to be engaged by the shell to be lifted and holds said shell in position on the shell-lifter.

When the breech-block is closed, the innermost shell is pressed by the spring-follower of the magazine, which will be later described, onto the shell-lifter until it engages with the depending lug 42; but as the breech-block is opened and the lug 42 moves rearwardly this shell follows it until engaged by the stop-lug 56. Just before the breech-block reaches the extreme limit of its rearward movement the lug 42 engages the block 51 and swings the shell-lifter upwardly to the position shown in Fig. 4, the lug 54 in the meantime holding back the other shells in the magazine. Now as the breech-block is moved forwardly its front end engages the rear end of the shell on the shell-lifter and moves it into the barrel 20. As soon as the front end of the breech-block engages the inclined edges of the side wings 49 the shell-lifter, which is now being held by spring 52, is moved downwardly thereby into its normal position, where the next shell will ride onto it as before.

The shell which has been carried home by the breech-block may be discharged by the firing-pin in the usual manner and the empty shell ejected by the following means. The breech-block has a cartridge-extractor formed by a spring-pressed catch or dog 57 set in each side thereof with a cam-faced front end projecting ahead of the breech-block and traveling in grooves 56, so that as the breech-block presses the shell home in the barrel these spring-catches 57 by entering notches 58 in the end of the barrel may ride over the rim of the shell and become engaged therewith. Now when the breech-block is withdrawn, as before described, the spring-

catches 57, holding onto the rim of the shell on opposite sides, draw the shell out of the barrel until it strikes against a stationary lug 59 on the left side of the breech-casing, which prevents that side of the shell moving farther to the rear, forcing the spring-catch on that side to release the rim. As the spring-catch on the right side continues its engagement with the rim of the shell the shell is swung laterally through an opening 60 in the right side of the breech-casing. The force with which the shell is swung outwardly in this manner is usually sufficient to entirely eject it; but the new shell which is lifted therebeneath, by the shell-lifter at this time has a tendency to assist in the ejection of the old shell. The lug 59 does not interfere with the longitudinal movements of the breech-block, as said breech-block is provided with a groove or rabbet 61 in its upper edge in which the lug may travel.

The magazine comprises the outer magazine-tube 21 and an inner tube 62 telescoping therein, a screw 63 being provided at the front end of the former to ride in a longitudinal slot 64 of the latter and prevent the inner tube being drawn entirely from the outer tube. The outer tube 21 has an opening 65 formed near its front end, which is closed by the inner tube except when the latter is in its fully-extended position, as shown in Fig. 15, and through this opening the shells may be dropped one by one into the magazine-tube 21. The inner tube 62 has a follower 66 to slide therein, being pressed rearwardly by a coil-spring 67, which is seated on the flanged head 68 in the front end of the inner tube. When the magazine is fully charged, the inner tube 62 is forced inwardly and the follower 66, bearing on the end shell is moved against the pressure of spring 67 until the flange of the head 68 is engaged by a spring-catch 69 on the front end of the outer tube. The pressure of spring 67 is constantly tending to press the column of shells rearwardly to provide for their proper feed as one after the other is lifted into place, discharged, and ejected. A clamp 70, which is in the shape of a figure eight with the top part cut away, receives the magazine-tube 21 and the barrel 20 and clamps them together by means of a screw 71 connecting its intermediate portions between these members.

The breech-casing is provided with the usual rearwardly-extending projections 72 for connection with the gun-stock, and a hammer-spring 73, secured to the lower thereof has its front free end pressing upwardly against a roller 74 on the hammer 75, which is pivotally mounted in the breech-casing in the rear of the end wall 22'. A rectangular block 76 fits in a corresponding opening in the bottom of the breech-casing to the rear of the end wall 22' and has a trigger-guard 77 formed integral therewith, whose

front end is secured to the removable bottom 25 of the breech-casing. A trigger 78 is pivotally mounted in an opening of the block 76, and a spring 79 on the projection 72 bears upon a shoulder thereof, so as to hold it in its normal forward position. The upstanding dog 79' of the trigger is adapted to engage the tooth 80, formed on the hammer, when said hammer is cocked by opening the breech-block, as shown in Fig. 4.

The firing-pin 37 is provided with a cam-shaped depending lug 81, which stands in the path of the locking member 39 of the breech-block, so that when said locking member is raised this cam-lug is engaged thereby and forced rearwardly.

With the above description of the parts and their relation to each other the operation of the magazine-gun of this invention will be clearly understood.

The magazine is first charged with shells by releasing the catch 89 and withdrawing the inner tube 62 so as to uncover the opening 65 and permit the shells being dropped into the magazine-tube 21. The magazine is now closed by returning the inner tube 62, compressing the spring 67 until the catch again engages the flanged head 68 and locks the magazine closed. To load the gun, the fore-arm 45 is forcibly drawn rearwardly, the connecting-rod 44 thereof pushing its cam-lug 43 along the inclined cam-surface 41 of the locking member 39 and lifting said locking member out of engagement with the end wall 22' of the magazine-casing, thus releasing the breech-block, and at the same time the locking member, by operating upon the cam-lug 81 of the firing-pin, withdraws said firing-pin from its forward to its rearward position, so that there may be no danger of its discharging the shell by accident when the shell is later being pressed home by the breech-block. The breech-block being unlocked and the cam-lug 43 coming into positive engagement with the stop-lug 42 causes the breech-block to move rearwardly against the hammer 75, forcing said hammer to its rearmost position, when the breech-block passes over it and the hammer rides in a groove 82, provided therefor in the under side of the locking member 39, as shown in Fig. 4. When the stop-lug 42 started its rearward movement, the innermost shell 55 was allowed to follow until struck by the lug 56 when it was in position on the shell-lifter 48. As the lug 42 strikes the upstanding block 51 near the end of the rearward movement of the breech-block, the shell-lifter 48 is raised thereby to the position shown in Fig. 4, the shells remaining in the magazine being held back by the depending lug 54 of the shell-lifter meanwhile. Now the fore-arm 45 is pushed forwardly and the cam-lug 43 is carried thereby into engagement with the stop 46 to pull the breech-block forwardly and engage

its front end with the shell on the shell-lifter 48, which remains in its upper position after the lug 42 has left the block 51, owing to the pressure of spring 52 on said block. The shell 5 will be forced to slide along the shell-lifter and into the barrel 20 by the breech-block, and when the front end of the breech-block engages the inclined edges of the upstanding wings 49 of the shell-lifter said shell-lifter 10 will be pressed downwardly to its normal position and receive the next succeeding shell as before. When the breech-block reaches its normal closed position, its spring-catches 57 are sprung over the rim of the shell and its 15 locking member 39 again springs into locking engagement with the rear wall 22' of the breech-casing. The hammer, which was fully cocked by the opening of the breech-block, was prevented from following the 20 breech-block when the latter was closed by the engagement of the dog 79' of the trigger with the tooth 80 on said hammer; but as soon as the trigger is drawn to release said tooth the hammer-spring 73, pressing upwardly on the roller 74, forcibly throws the 25 hammer against the rearwardly-projecting firing-pin 37 to discharge the shell in the usual manner. When the fore-arm 45 is again operated for loading the gun with the next 30 succeeding shell in the manner just described, the empty shell which has been discharged is drawn rearwardly with the breech-block, by means of the spring-catches 57, until its rim strikes the ejecting-lug 59 on the left side of 35 the breech-casing and is forced out of engagement with the spring-catch on that side, while the spring-catch on the other side remains in engagement, thus effecting the side movement of the empty shell to eject it 40 through the opening 60 on the right side of the breech-casing.

When it is desired to take the gun apart, the pivotal slide-stop 46 is forced upwardly out of the path of lug 43 by means of the finger 45 passed through the opening 60. The screw 28, which holds the connecting-plate 27 to the front end wall 24 of the breech-casing is removed. The clamping member 29 of this connecting-plate is opened, as shown 50 in dotted lines in Fig. 10, so as to release the barrel and permit it to be unscrewed from the end plate 24, the clamp 70 having been loosened to also permit of this turning, and the barrel, with its magazine, is detached 55 from the breech-casing entirely, the connecting-rod 44 and its cam-lug passing freely through the opening in the front wall 24. To assemble the parts again the reverse of the operation just described is performed. 60 The locking engagement between the barrel and the connecting-plate 27, by means of the series of teeth 30, enables the barrel to be adjustably tightened at all times to take up the wear of the parts and enables the barrel and 65 magazine to be tightly clamped to the breech-

casing, the length of the notches 58 in the end of the barrel being sufficient to permit of turning the barrel more or less without interfering with the spring-catches 57.

With this invention the breech-block is 70 firmly and securely locked in its closed position by the locking member, and there is no danger whatever of the recoil throwing it open. Furthermore, the various functions are performed by mechanism of few parts, which are 75 strong and simple in their construction and positive in their operation, all being readily accessible for cleaning purposes.

What I claim as my invention is—

1. In a take-down gun, a breech-casing, a 80 barrel removably secured thereto, a breech-block slidable in the breech-casing, a locking member pivotally mounted on the breech-block, a stop in the breech-casing to be engaged by the locking member for locking the 85 breech-block in its closed position, a fore-arm, a rod thereon extending into the breech-casing, a lug on the rod, a cam on the locking member to be engaged by the lug whereby the locking member may be moved out of en- 90 gagement with the stop in the casing, a stop on the locking member to be engaged by the lug for sliding the breech-block open when the locking member is disengaged, and a movable stop on the locking member to be engaged 95 by the lug on the rod for sliding the breech-block to its closed position.

2. In a take-down gun, a breech-casing, a barrel removably secured thereto, a breech-block slidable in the breech-casing, a locking 100 member pivotally mounted on the breech-block, a stop in the breech-casing to be engaged by the locking member for locking the breech-block in its closed position, a slidable 105 fore-arm, a rod thereon extending into the breech-casing, a lug on the rod, a cam on the locking member to be engaged by the lug whereby the locking member may be moved out of engagement with the stop in the casing, a stop on the locking member to be en- 110 gaged by the lug for sliding the breech-block open when the locking member is disengaged, a pivotal stop on the locking member to be engaged by the lug on the rod for sliding the breech-block to its closed position, and a 115 spring-pressed pin engaging the pivotal stop and normally holding it in its engaging position.

3. In a repeating gun, a breech-casing, a breech-block slidable therein, a locking mem- 120 ber pivotally mounted on the breech-block, a stop in the path of the locking member to be engaged thereby for locking the breech-block in its closed position, a fore-arm, a rod connected therewith and entering the breech- 125 casing, a lug on the rod, a cam on the locking member, to be engaged by the lug whereby the locking member is moved out of engagement with the stop, stops on the locking member to be engaged by the lug when the lock- 130

ing member is released from its stop whereby the breech-block may be moved in the breech-casing by means of the fore-arm, a shell-lifter pivotally mounted in the breech-casing and having a block to be engaged by one of the stops on the locking member when the breech-block is being opened whereby the shell-lifter is swung to lift a shell into the path of the breech-block, and a magazine for feeding shells to the shell-lifter.

4. In a repeating gun, a breech-casing, a breech-block slidable therein, a locking member pivotally mounted on the breech-block, a stop in the path of the locking member engaged thereby for locking the breech-block in its closed position, a fore-arm, a rod connected therewith and entering the breech-casing, a lug on the rod, a cam on the locking member engaged by the lug whereby the locking member is moved out of engagement with the stop, stops on the locking member to be engaged by the lug when the locking member is released from its stop whereby the breech-block may be moved in the breech-casing by means of the fore-arm, a shell-lifter pivotally mounted in the breech-casing and having a block to be engaged by one of the stops on the locking member when the breech-block is being opened whereby the shell-lifter is swung to lift a shell into the path of the breech-block, a spring for holding the shell-lifter in either of its extreme positions, upstanding wings on the sides of the shell-lifter having inclined edges to be engaged by the breech-block when the latter is being closed for returning the shell-lifter to its lower position, a stop on the shell-lifter for limiting the position of a shell thereon, a magazine for feeding shells to the shell-lifter, and a lug depending from the shell-lifter for detaining the shells in the magazine when the shell-lifter is out of position for receiving them.

5. In a gun, a breech-casing, a breech-block slidable therein, a locking member pivotally mounted on the breech-block, a stop in the path of the locking member to be engaged thereby for locking the breech-block in its closed position, a firing-pin carried by the breech-block, a hammer pivotally mounted in the breech-casing and adapted to strike the

firing-pin when the breech-block is in its closed position, a roller carried by the hammer, a spring-bearing on the roller, a tooth on the hammer, a removable block set in an opening in the breech-casing, a trigger-guard carried thereby, a trigger pivoted in the block, a spring bearing on a shoulder of the trigger to hold the trigger in its normal position, a dog carried by the trigger for engaging the tooth of the hammer, and means for disengaging the locking member from the stop and for sliding the breech-block in the breech-casing toward the hammer, whereby the hammer is cocked and travels in an opening provided therefor in the lower part of the locking member.

6. In a take-down gun, a breech-casing, a breech-block slidable therein, a barrel threaded in the breech-casing, a connecting-plate removably connected to the breech-casing, a clamping member pivotally mounted on the connecting-plate and forming therewith a clamp with engaging teeth, teeth formed on the barrel to be engaged by the engaging teeth of the clamp, and a flange on the barrel fitting in a corresponding groove in the clamp.

7. In a take-down gun, a breech-casing, a breech-block slidable therein, a locking member pivotally connected with the breech-block, a stop in the path of the locking member to be engaged thereby for locking the breech-block in its closed position, a barrel threaded in the breech-casing, a connecting-plate detachably connected with the breech-casing, a clamping member pivotally mounted on the connecting-plate and forming a clamp therewith having engaging teeth, teeth formed on the barrel to be engaged by the engaging teeth of the clamp, an annular flange formed on the barrel and fitting in a corresponding groove in the clamp, and a magazine carried by the connecting-plate.

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

HENRY J. BOOSTED.

Witnesses:

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A. H. BLOOD.