No. 883,020. PATENTED MAR. 24, 1908.

L. L. HEPBURN.

REPEATING FIREARM.

APPLICATION FILED MAR. 18, 1907.

3 SHEETS—SHEET 1.

Fig. 1.

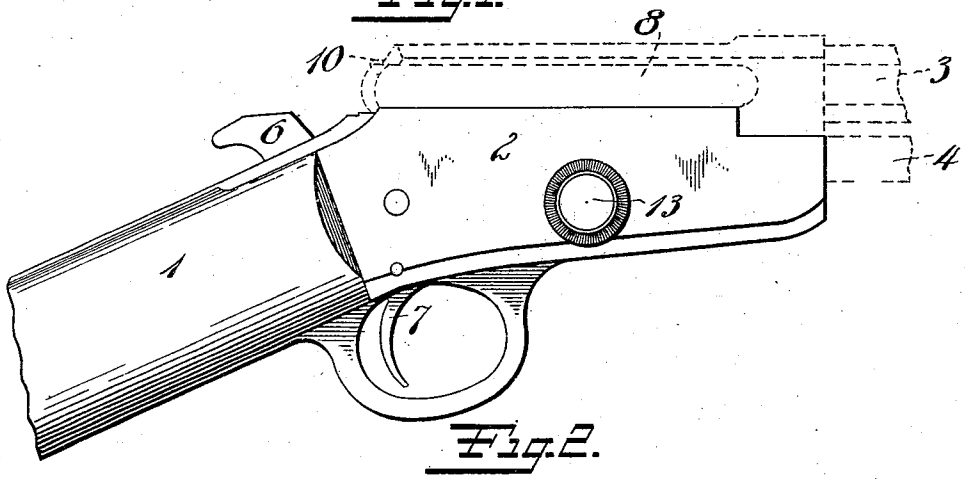


Fig. 2.

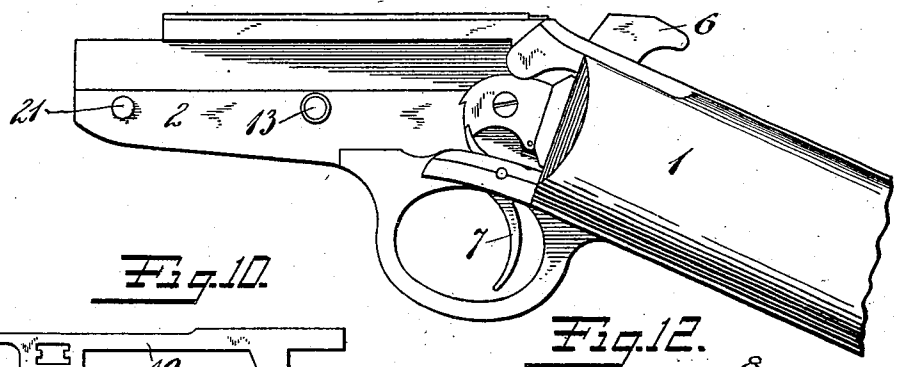


Fig. 10.

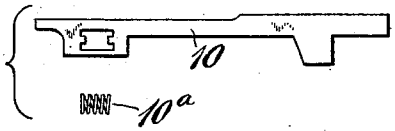


Fig. 12.

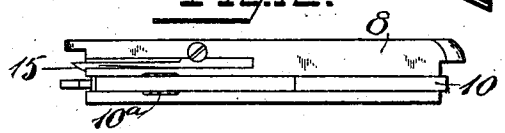


Fig. 11.

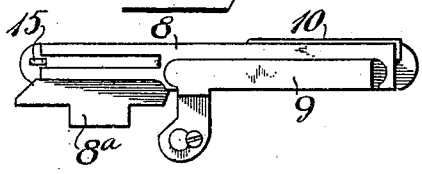
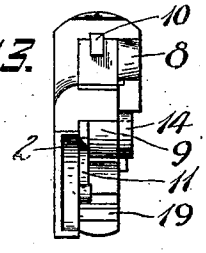


Fig. 13.



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3 SHEETS—SHEET 2.

Fig. 3.

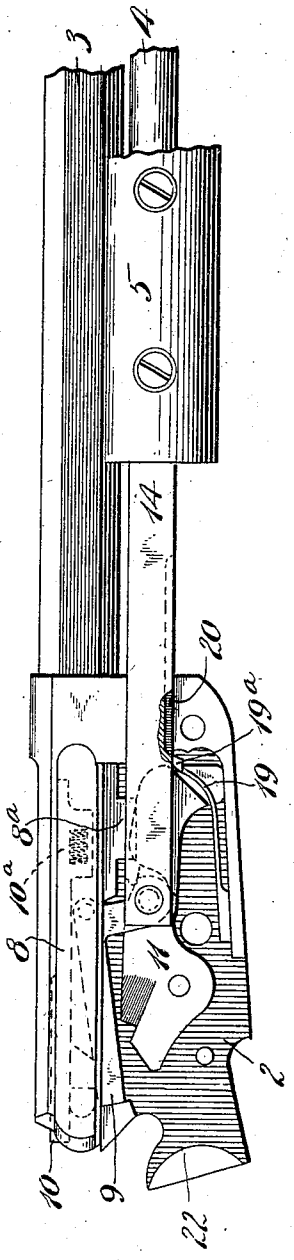
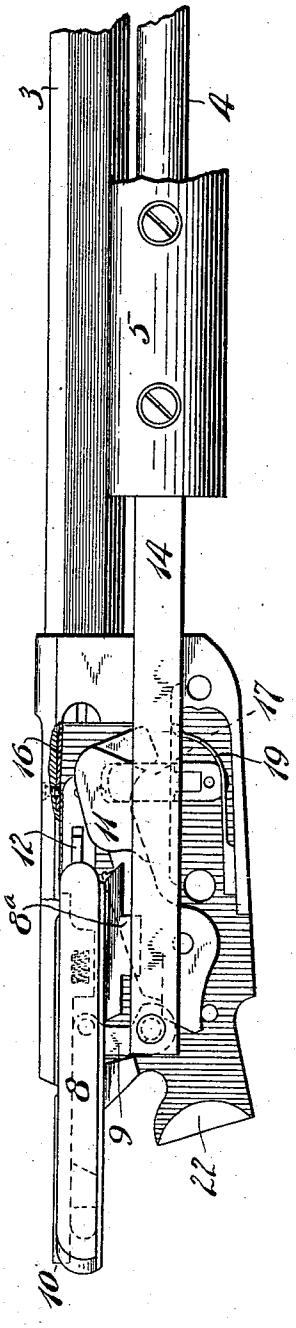


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

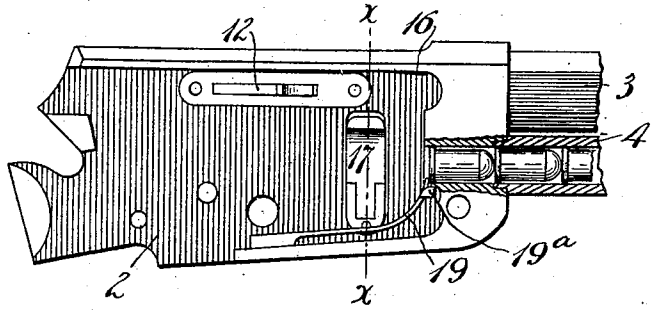


Fig. 6.

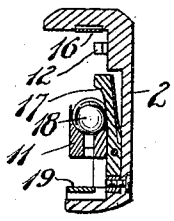


Fig. 7.

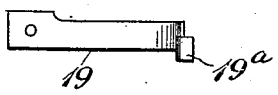


Fig. 8.



Fig. 9.



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UNITED STATES PATENT OFFICE.

LEWIS L. HEPBURN, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE MARLIN FIREARMS COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

REPEATING FIREARM.

No. 883,020. Specification of Letters Patent. Patented March 24, 1908.

Application filed March 18, 1907. Serial No. 362,871.

To all whom it may concern:

Be it known that I, LEWIS L. HEPBURN, a citizen of the United States, residing at New Haven, county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Repeating Firearms, of which the following is a full, clear, and exact description.

My invention relates to firearms of the repeating type, and is essentially an improvement on the invention made the subject matter of my former patent No. 776,243.

Among the main objects of this invention are, to provide a cartridge guide to prevent stubbing the cartridges as they are fed successively into the barrel by the cartridge handling mechanism; also, to provide an improved cutoff to control the successive release of cartridges from the magazine; also, to provide a means to prevent the displacement of the cartridges upon the carrier as they are delivered from the magazine. By these improvements many advantages are attained, conspicuous among which is the advantage of enabling the user to employ any length of cartridge of given caliber. As will be observed, I have also embodied in this gun the so-called "take down" construction shown in my former patent No. 584,177. While slide rods for actuating the action work were well known long prior to the date of my last-mentioned patent, for example, in my Patent No. 560,032, and while it would involve no invention to substitute this old reciprocating action rod for the old swinging action lever, such as shown in Patent No. 584,177, it will be observed, nevertheless, that in this case the action rod enters the receiver on its line of separation, so that the mere act of taking down the gun affords access to said rod, so that it may be readily disconnected from the various parts of the action work, with which it coöperates, thereby facilitating the dismembering of the action work.

In the accompanying drawings,—Figure 1 is a side elevation, partly in dotted outline, of the breech portion showing a part of the stock and a part of the barrel. Fig. 2 is an elevation of the reverse side of the stock portion of the breech or receiver, also showing a part of the stock. Fig. 3 is an elevation of the barrel portion of the breech, and a portion of the barrel. Fig. 4 is a similar view showing the parts in a different position from that shown in Fig. 3. Fig. 5 is a similar view, partly in longitudinal section, with some of the parts removed. Fig. 6 is a cross-section on the plane of the line X X, Fig. 5, with the carrier in place. Fig. 7 is a plan view of the cut-off. Fig. 8 is a side elevation of the carrier, partly in section. Fig. 9 is a plan view of the carrier. Fig. 10 is a side elevation of the firing-pin. Fig. 11 is a side elevation of the breech-block, locking-bolt and firing-pin. Fig. 12 is a plan view of the breech-block and firing-pin. Fig. 13 is a rear elevation of the parts shown in Fig. 3.

I need not describe at length the construction of the firearm since, as to those details which are in common to my former patents above referred to, they are generally the same, and a full description may be found upon reference thereto.

1 is the stock.

2—2 are the opposite side plates of the receiver.

3 is the barrel.

4 is the magazine.

5 is the operating handle of the action rod 14, the same being located in the usual place underneath the barrel and having a reciprocating motion, as shown in my previous patent No. 560,032.

6 is the hammer.

7 is the trigger.

8 is the breech-block which has a reciprocating movement only in a suitable guideway in the receiver.

9 is a locking-bolt hinged to the breech-block and reciprocated therewith, although said locking-bolt 9 has a swinging movement to lock the breech-block in its advanced position when the gun is loaded in the same manner as set forth in my former patents, for example, No. 560,032 and No. 776,243.

10 is a firing-pin carried in a groove in the upper side of the breech-block. This firing-pin differs from that set forth in my former patent No. 776,243 in that it also constitutes an improved means for holding the breech-block in place. To that end the upper rear edge of the firing-pin is extended above the upper plane of the breech-block for a considerable distance, while the overhanging wall or roof of the receiver is grooved to afford a guide-way for the projecting portion of said pin. By this means when the breech-block has been advanced so as to project that portion of the firing pin, which stands

above the breech-block into said groove, the side displacement of the breech-block is effectively prevented. It follows, therefore, that when the breech-block has been retracted so as to remove the projected portion of the firing-pin from said groove the breech-block may be removed, so far as said retaining means is concerned. This construction is an improvement on the construction set forth in my former patent No. 776,243 in that it furnishes an additional means for holding the breech-block in place, which is of particular utility when one side plate of the receiver is removed, as would be the case when the gun is taken down.

11 is a pivoted carrier constructed and operating substantially in the manner set forth in my aforesaid Letters Patent No. 776,243, and coöperating with the other parts in the same manner.

12 is an ejector of any suitable type arranged behind the breech-block and carried by that portion of the receiver which is permanently connected to the barrel 3, the same being substantially as shown in my aforesaid patent, and others preceding it, and operating in the same manner. The receiver is vertically and longitudinally divided so as to form two independent side plates as set forth in my former patent No. 584,177, said parts being assembled or separated in the same manner and held, as in the former case, by a through-bolt, or equivalent device 13. One of these plates of the receiver is permanently carried by the stock, while the other is permanently carried by the barrel, substantially as set forth in my aforesaid Patent No. 584,177, and when assembled the breech mechanism, with the exception of the breech-block and firing-pin, is inclosed thereby, the space between said side plates and below the breech-block constituting a chamber for the carrier. The firing-pin, as in the former case, is retracted by means of a spring 10^a.

15 is an extractor carried by the breech-block. The action rod 14 enters the receiver on the line of division of the separable members of the receiver, hence when the gun is taken down this rod may be easily removed from its operative engagement with the locking-bolt 9, whereupon the breech-block and the various internal parts may be readily removed.

16 is a cartridge-guide, the same being in the form of a yielding presser plate carried in the roof of the receiver and directly behind the entrance to the barrel. In this form of action mechanism the cartridges are received by the carrier when the same is in the position shown in Fig. 3. When the action work is moved in a direction to advance the cartridge into the barrel, these parts assume the position shown in Fig. 4, in which it will be seen the carrier is inclined upwardly. This would tilt the forward end of the cartridge thereon toward the roof of the receiver at such an angle that, were it not for the presence of the guide 16, the end of the cartridge might be stubbed at the entrance to the barrel as it is being advanced by the breech-block. This might result in jamming the action, or in shaving off a portion of the lead, which shaving might itself cause the jamming of the action mechanism. The guide 16, however, normally projects down sufficiently far to prevent this stubbing of the cartridge and guarantees its proper introduction in the barrel. By making this guide 16 yielding it is pressed back when the breech-block encounters the same and drives the cartridge home.

17 is a cartridge-guard to prevent the displacement of the cartridge on the carrier. As shown in Figs. 5 and 6 this guard 17 is yieldingly mounted on the inner side wall of the side plate carried by the barrel, the upper end of the guard normally overhanging or overstanding the carrier when the same is in the position shown in Figs. 3 and 6. It is while in this position that the cartridge which is released from the magazine is thrown backward upon the carrier, and in this movement they project into the space which is protected by the overstanding guard 17. In other words they stand as shown in Fig. 6 in which 18 represents the cartridge resting upon the carrier before the latter is elevated. It, therefore, matters not whether the cartridge is long, medium or short, the overstanding guard 17 will prevent said cartridge from tipping up, or being displaced while on the carrier and before it is elevated. This danger in the ordinary gun is most conspicuous in the use of short cartridges because of the opportunity given for such cartridges to turn while traveling from the magazine back to the intermediate position in which they rest upon the depressed carrier preparatory to elevating the same. As shown, the nose or upper end of the cartridge-guard 17 is beveled or inclined, consequently when the carrier tilts up to the position shown in Fig. 4 the cartridge, when present, or the carrier when the cartridge is not present, will press the guard back into the side wall so as to permit the cartridge and carrier to rise without obstruction.

19 is the cut-off. The forward end of this cut-off is arranged to engage and check those cartridges in the magazine in advance of the one that has been released and allowed to enter the receiver. In the particular form shown this cut-off is formed of spring metal, the rear end thereof being secured to the bottom of the receiver in any suitable manner. Cut-offs have been employed heretofore, but it has been customary to actuate the same by means of the carrier, or an equivalent device. In this instance, however, the cut-off is actu-

ated by the action rod directly. To that end I form a cam groove at the lower inner edge of the action rod, as best seen in Fig. 3. This groove is in line with the edge 19[a] of the forward end of the cut-off 19. Referring to Fig. 3 this groove is indicated at 20, and in this figure it will be seen that the lower edge of the action rod is bearing upon and depressing the forward end of the cut-off. This releases the rearmost cartridge in magazine 4. These cartridges are pressed back in the usual way by a spiral spring (not shown). While in this position the rearmost cartridge, released by cut-off 19, will stand against an abutment 8[a] depending from the breech-block and overstanding the carrier, and arranged to pass through the groove 11[a] in the upper side thereof. When the action rod 14 is moved back it will first unlock the breech-block in the usual way, and then move said breech-block backward. As the abutment 8[a] recedes the cartridges in the magazine will cause the released cartridge to move back on the carrier until it is free of the magazine, but no succeeding cartridge can be thrown out because, as will be seen on reference to Fig. 3, a slight rearward movement of the action rod 14 will cause the groove 20 therein to overstand the forward end of the cut-off 19, whereupon the latter will rise to a position to catch and stop the following cartridges in the magazine. From then on the cycle of operation involves the elevating by the carrier of the released cartridge to a position in front of the barrel, then the pushing of said cartridge into the barrel, then the locking of the breech-block, and then the firing of the cartridge. The empty shell is then retracted in the usual way, and simultaneously with the retraction with the breech-block the foregoing operation is repeated of transferring one cartridge to allow it to stand upon the carrier ready to be elevated into position to take the place of the one just discharged. The empty shell is withdrawn from the barrel in the usual way by the extractor 15, and since the breech-block itself forms a part of the side wall of the receiver, an ejecting space is provided by the backward movement of the breech-block itself above the upper edge of the side plate carried by the stock.

As will be seen, the firearm, as to all essential principles, is the same as set forth in my patents of earlier date and above alluded to. The various features of improvement which have been particularly described, however, all coöperate to insure the safe use of a cartridge of any length no matter what may be the position of the gun during the act of operating the action work to discharge an empty shell and substitute a loaded one in its place. As to the take-down apparatus it is the same as in my former patent No. 584,177, with the exception that the form of the tenon at the forward end of the stock side plate is modified. In the former instance this tenon projected forwardly, in the latter instance this tenon projects laterally and is indicated at 21, Fig. 2. The tenon at the rear end of the barrel side plate is indicated at 22. The form of these tenons is, of course, immaterial, it being sufficient that any well known means to prevent vertical displacement of the parts when assembled be provided, the lateral displacement being prevented by the through-bolt 13, or its equivalent.

What I claim is:

1. In a repeating firearm, a barrel, a reciprocating breech-bolt, a magazine adjacent to the barrel and opening into the breech-frame, a carrier therein, a cartridge guard coöperating with the carrier to hold the cartridge against displacement, said guard being spring-pressed pivotally mounted at its lower end and projecting upwardly and laterally to overstand the carrier when the latter is depressed.

2. In a repeating firearm, a receiver, a barrel, a breech-block, a magazine parallel with the barrel and opening into the forward end of the receiver, a reciprocating action rod entering the receiver at the forward end and at one side of the magazine, a spring cut-off arranged to coöperate with the cartridges in the magazine, a lateral offset on said cut-off coöperating with the action rod, said cut-off being actuated to release the cartridges in the magazine when said action rod is advanced.

3. In a repeating firearm, a receiver, a barrel, a breech-block, a magazine parallel with the barrel and opening into the forward end of the receiver, a reciprocating action rod entering the receiver at the forward end and at one side of the magazine, a spring cut-off arranged to coöperate with the cartridges in the magazine, a lateral offset on said cut-off coöperating with the action rod, said cut-off being actuated to release the cartridges in the magazine when said action rod is advanced, said receiver being divided vertically to form separate detachable side-plates, one carried by the barrel, the other by the stock, the line of division being coincident with the line upon which the action rod enters the receiver, and means for detachably securing said separable parts in operative position.

4. In a repeating firearm, a barrel, a magazine, a receiver, breech mechanism therein, including a hinged carrier, a guard pivoted at its lower end in a recess in one side of said receiver and coöperating with said carrier to prevent the displacement of the cartridges thereon when said guard is projected, a spring therefor, said carrier operating to depress said guard when moved in one direction.

5. In a repeating firearm, a stock, a barrel, a magazine, breech mechanism, a receiver containing said breech mechanism and in-

cluding one side plate permanently connected to the stock and another side plate removable from the first side plate and permanently connected to the barrel, an operating rod for the breech mechanism, said rod entering the receiver at its forward end and at one side of the magazine and on the line of division of the receiver, a yielding guide mounted in a recess in the receiver directly to the rear of and above the plane of the barrel, a guard coacting with the breech mechanism to prevent the displacement of a cartridge while carried by the breech mechanism, and a cut-off within the receiver and directly below the rear end of the magazine, a lateral projection from said cut-off coacting with said operating rod.

6. In a repeating firearm, a barrel, a magazine, a receiver, cartridge handling mechanism carried thereby and including a cartridge cut-off for the magazine, said cut-off being normally spring-pressed in a direction to prevent cartridges in the magazine from being forced back into the receiver, a reciprocating action rod entering the receiver at one side of said magazine, a cam groove therein, a lateral projection on said cut-off engaged by that part of the action rod in which said cam groove is formed, whereby when said action rod is in its advanced position the cut-off will be moved in a direction to release the cartridges in the magazine.

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