Feb. 19, 1952 V. A. BROWNING 2,586,509

CARRIER LATCH FOR REPEATING FIREARMS

Filed March 22, 1950 4 Sheets-Sheet 1

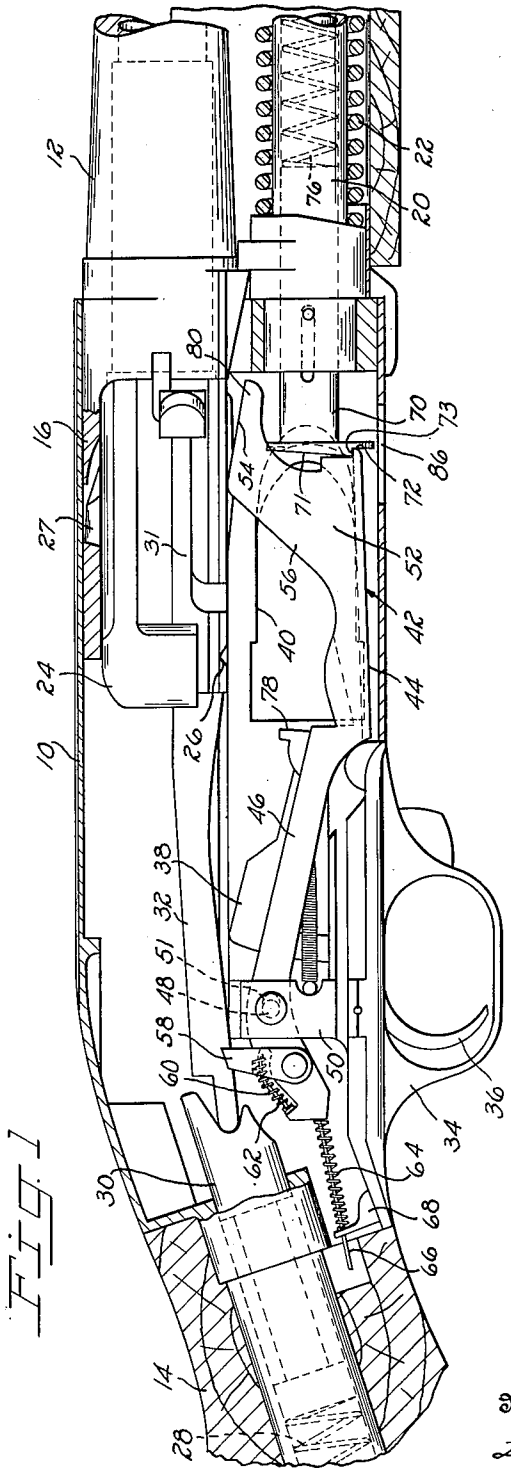

Fig. 1

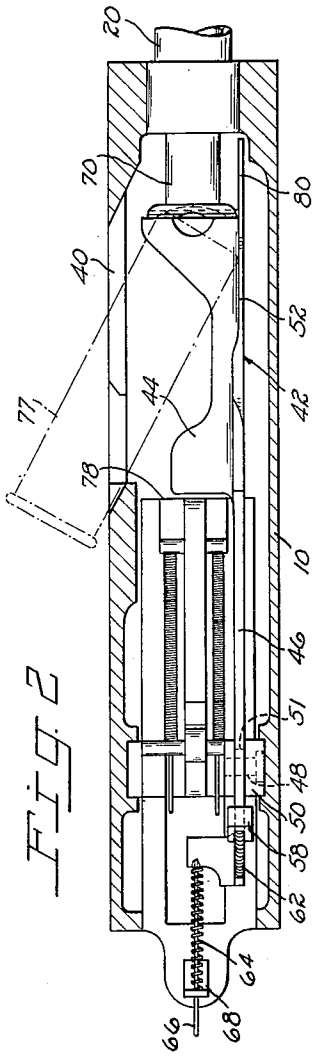

Fig. 2

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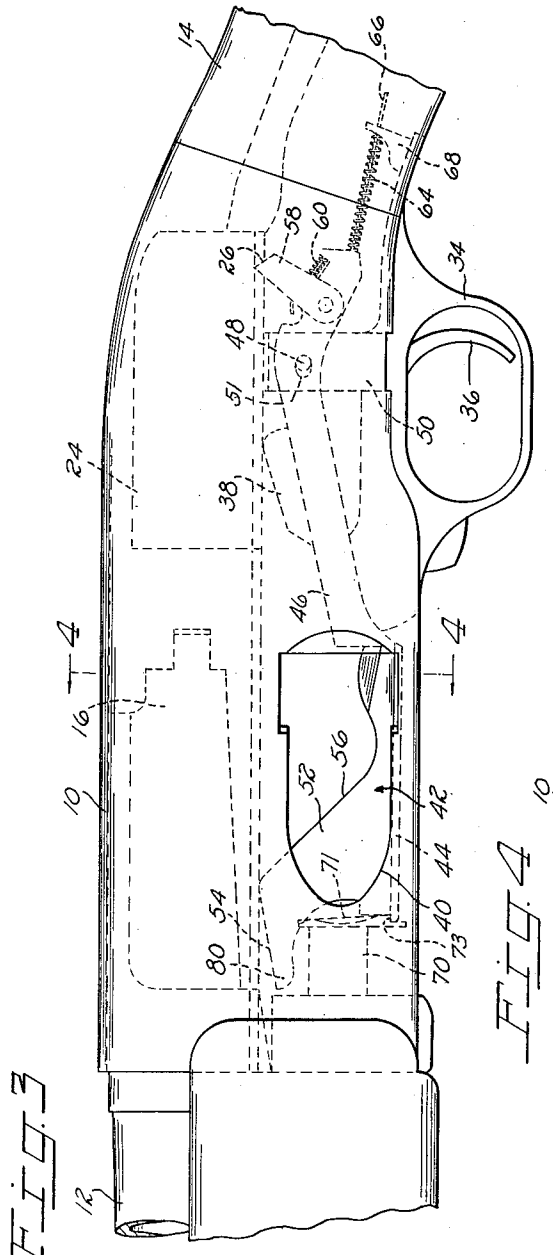

FIG. 3

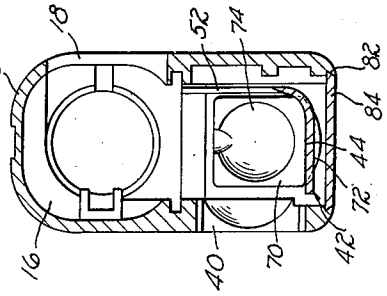

FIG. 4

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CARRIER LATCH FOR REPEATING FIREARMS

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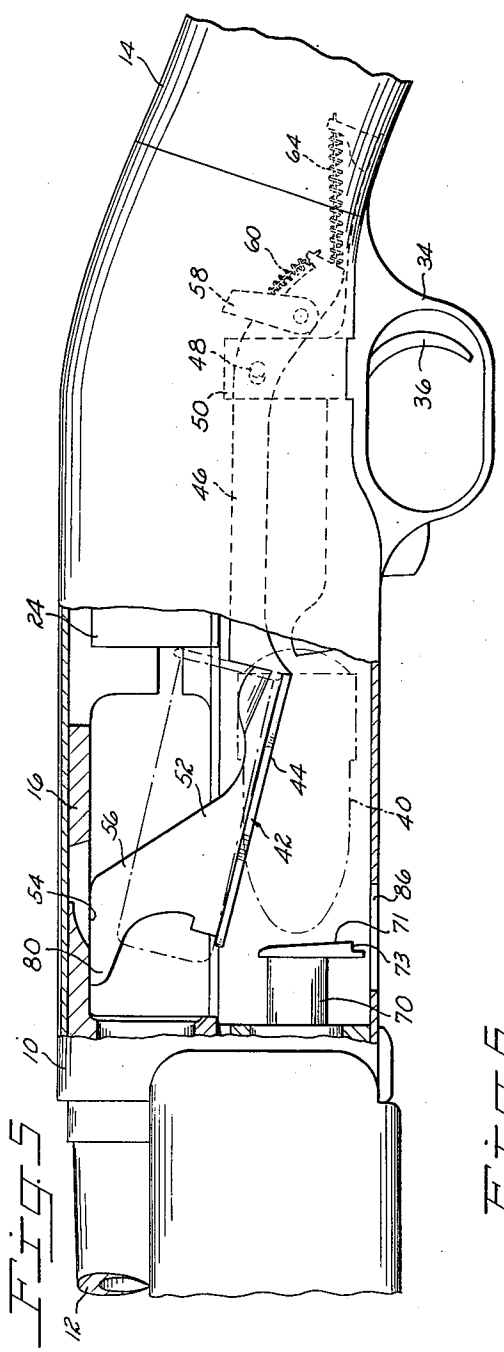

Fig. 5

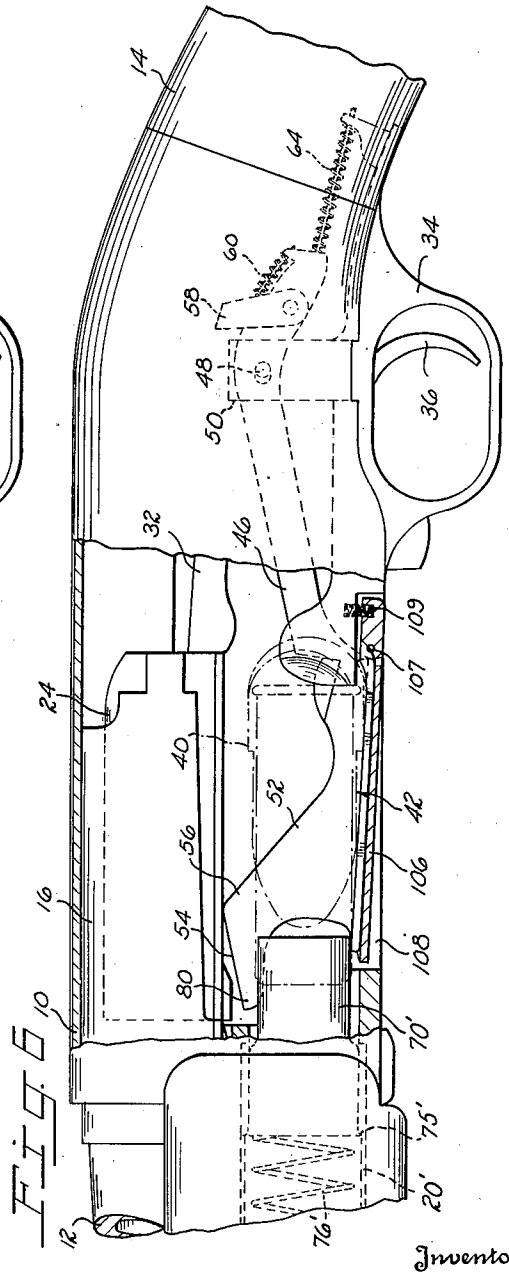

Fig. 6

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CARRIER LATCH FOR REPEATING FIREARMS

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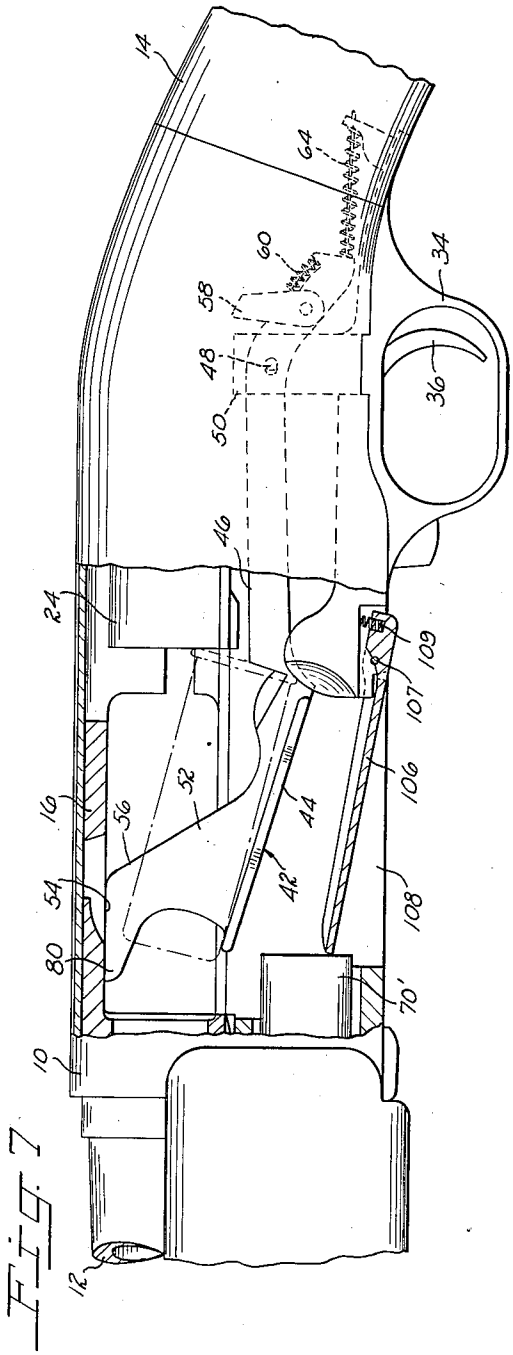

Fig. 7

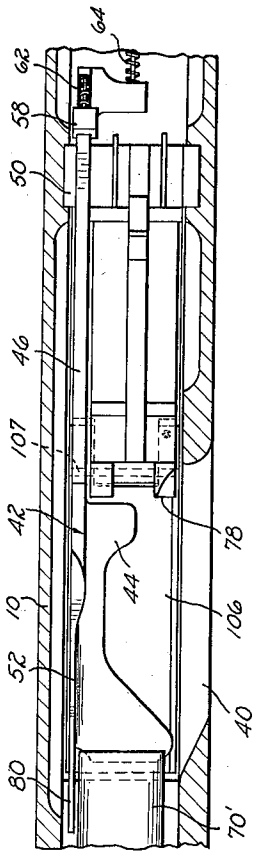

Fig. 8

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UNITED STATES PATENT OFFICE

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CARRIER LATCH FOR REPEATING FIREARMS

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Application March 22, 1950, Serial No. 151,187

8 Claims. (Cl. 42—17)

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This invention relates to shotguns of the type having a receiver or frame, a barrel, a breech block adapted to recoil upon firing of the gun; a carrier adapted to be raised on forward movement of the breech block to transfer a shell from a depressed cartridge-receiving position below the line of the barrel to a position aligned with the barrel and to be moved to its depressed position as the breech block approaches battery position, and means associated with the carrier for holding the breech block in recoiled position when the last shell in the gun has been fired; and the invention has particular reference to shotguns of this sort wherein shells may be loaded directly onto the depressed carrier through a side opening in the side of the receiver.

In my pending application, Serial No. 20,739, filed April 13, 1948, and entitled Repeating Shotgun, is disclosed a shotgun of the type described having various features of novelty and advantage.

The object of the present invention is to provide a shotgun of this type having a side loading opening and wherein the construction is simplified and the cost of manufacture is reduced; the loading of the shells into the firearm is facilitated; and displacement or ejection through the side loading opening of a cartridge positioned upon the depressed carrier is insured against when a cartridge in the firing chamber is fired.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

The following description will be more readily understood by reference to the accompanying drawings in which similar reference numerals refer to similar parts and in which—

Figure 1 is a sectional view taken longitudinally and vertically through a firearm constructed in accordance with one embodiment of the present invention and limited to shoot two cartridges in succession, the breech block being shown in battery position;

Figure 2 is a sectional view taken horizontally therethrough;

Figure 3 is a side elevational view thereof showing the position which the parts assume upon firing of the last shell in the gun;

Figure 4 is a cross sectional view taken on line 4—4 of Figure 3 and looking in the direction of the arrows;

Figure 5 is a view similar to Figure 3 with part of the receiver broken away, the breech block being illustrated about to advance the cartridge

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on the raised carrier into the firing chamber of the barrel;

Figure 6 is a view similar to Figure 1 but showing another embodiment of the present invention wherein a cartridge magazine is provided so that more than two shells may be fired in succession;

Figure 7 is a view similar to Figure 6 but showing the carrier raised and the breech block as moving forwardly from its retracted position, and

Figure 8 is a sectional view taken horizontally through Figure 6.

Referring to the various figures of the drawings in detail, each of the firearms illustrated therein comprises a frame or receiver 10, a barrel 12 and a stock 14. The rear end of the barrel which is conventionally shown as being in the form of a barrel extension 16 is slidably mounted in an opening in the forward end of the receiver 10. The receiver has the usual ejection opening 18 shown in Fig. 4. Secured to the forward end of the receiver and disposed beneath the barrel is a guide 20 for the recoil spring 22. Within the receiver is a breech block 24 which may be of any suitable construction, the same being shown more or less conventionally in the drawings. The breech block carries the usual operating slide 31 having on its under surface near the rear end thereof a locking shoulder comprising one face of a notch 26. Pivoted to the breech block is a locking block 27 having a rearwardly facing shoulder adapted to engage a locking shoulder in the barrel extension, as shown in Fig. 1, for locking the breech block to the barrel extension so that the same will recoil in unison upon firing a cartridge.

The breech block is urged forwardly to its breech closing position by means of an action spring 28 located within the stock 14. This action spring bears against a guide piece 30. Pivoted to the locking block is a link 32, the rear end of which bears against the guide piece. About the guide piece is a recoil spring 22. The arrangement thus far described is embodied generally in the firearm disclosed in my Patent No. 2,480,074, granted August 23, 1949. With respect to the operation of the parts described, it is here sufficient to say that, upon firing a cartridge, the barrel and breech block, due to the force of the explosion, will recoil and the recoil movement of the barrel is retarded and stopped, whereupon the breech block is disengaged from the barrel assembly and will continue to recoil, and during the continuing recoiling movement of the breech block, the barrel will be advanced by the recoil spring 22 to firing position. The action spring 28 will then return the breech block to breech closing position with respect to the barrel which has already been brought to firing position.

The firearm will, of course, be provided with a suitable firing mechanism, the same being shown more or less diagrammatically in the present drawings. This mechanism includes a trigger plate 34 located in the lower rear corner of the receiver, a trigger 36, and a hammer 38.

The space in the receiver below the breech block in forward position comprises a chamber which has a loading opening 40 formed in one side wall of the receiver. Within the receiver is a carrier 42 having a cartridge receiving or supporting portion 44 which is within the chamber in the receiver and is normally disposed in a depressed position therein in which it can receive a cartridge inserted through the loading opening 40 of the chamber. Extending rearwardly from one side of the cartridge receiving portion 44 is an arm 46, said arm being disposed at one side of the firing mechanism and said arm is pivoted between its ends to the trigger plate 34. In the present illustrative disclosures, the arm 46 is pivotally supported by a pivot pin 48 extending between a pair of closely spaced lugs or ribs 50, as is clearly shown in Figs. 1 through 3, which are integral with and extend upward from the trigger plate 34. The pivot pin is headed at one end and is received within a suitable counter-bored recess provided in the upper end of the outermost lug 50. Said counter-bored lug is disposed closely adjacent one side of the receiver 10, whereby accidental removal of the pin 48 from its supporting apertures in lugs 50 is prevented when said mechanism is mounted in operative position within the receiver. The pivot pin 48 extends through an elongated aperture 51 provided in the arm 46, the purpose of the elongation of said aperture being to permit limited longitudinal movement of the carrier for purposes described hereinafter.

Along that side of the cartridge supporting portion 44 of the carrier 42 which is opposite the loading opening 40 is an upstanding flange 52. Said flange has a number of functions to be described hereinafter, and one of said functions is to limit in a lateral direction the extent to which a cartridge may be inserted into position upon the carrier when the firearm is being loaded. Said flange, adjacent its forward end, is inclined rearwardly and upwardly as at 54 and then downwardly and rearwardly at 56 so that the same may properly cooperate with the breech block and barrel extension, as later described.

The rearward end of the arm 46 pivotally supports a locking dog 58 which engages the notch 26 in the breech block to releasably hold said breech block in recoiled or retracted position as shown in Fig. 3. The dog 58 is normally biased forwardly by a compression spring 60 which is disposed around a suitably curved guide 62 carried by the rearward end of arm 46. When the breech block is in breech closing position, the dog 58 is disposed in its forward position shown in Figs. 1 and 6. However, when the breech block moves in recoil direction to its fully retracted or recoil position, illustrated in dotted lines in Fig. 3, the locking dog is pivotally moved rearward by engagement with the breech block until the upper end of the dog 58 is biased into the notch 26 of the breech block by the biasing force of spring 60. The cartridge supporting portion 44 of the carrier is normally biased upward by a compression spring 64 from a depressed cartridge receiving position to an elevated cartridge delivery position wherein it supports a cartridge in a position to be delivered to the firing chamber of the barrel. The compression spring 64 surrounds a suitable guide 66 carried by the rear end of arm 46, the spring 64 being disposed between the rear end of said arm 46 and a lug 68 fixed to the trigger plate 34, whereby the spring exerts force forwardly against the rear end of arm 46 and thus biases the carrier longitudinally toward its foremost position wherein the rear end of the elongated bearing aperture 51 is in engagement with the pivot pin 48.

Referring particularly to the "two shooter" embodiment of the invention shown in Figs. 1 to 5, inclusive, the firearm is provided with a cartridge plunger 70 mounted for axial movement in the rear end of the guide 20 for the recoil spring 22. The rear end of said plunger is enlarged as clearly shown in each of the Figures 1 to 5. The rear face 71 of said end slopes slightly downwardly and rearwardly and terminates in a horizontal shoulder 73 comprising one wall of a notch 72 formed in the lower edge of said end and arranged to receive the forward end of the cartridge supporting portion 44 of carrier 42, as is clearly shown in Figs. 1 and 3. Said horizontal shoulder 73 of said plunger end and said forward end of portion 44 thus comprise interengaging latching means on said plunger and carrier which releasably maintain said carrier latched in its depressed cartridge receiving position except when a cartridge is on said carrier as is explained hereinafter. The rear face 71 of said enlarged end of the plunger is also provided with a concavity 74 to facilitate the engagement of the forward end of a cartridge with said plunger when said cartridge is inserted through the loading opening 40 as shown in Fig. 2. When the carrier 42 is moved to depressed position due to engagement of the incline 56 of flange 52 by the breech block 24 during its movement to breech closing position, the forward end of portion 44 of the carrier will engage said inclined surface 71 of plunger 70 and move the plunger 70 slightly forwardly against the action of spring 76 until said portion 44 is below the shoulder 73 whereupon the spring 76 biases the plunger rearwardly to the latching position shown in Figs. 1 and 3. Such means provides a simple but highly effective latching means for releasably maintaining the carrier in its depressed cartridge-receiving position and the movement of said carrier to said position occurs with a minimum of frictional engagement between the various components of the firearm which effect such movement of the carrier. The spring 76 need be only of sufficient strength to insure latching engagement of the notch 72 with the forward end of the carrier during all conditions of operation of the firearm. The spring 76 should also be sufficiently strong to cause the plunger to engage the nose of a cartridge when on said carrier portion 44 and urge said cartridge rearwardly to a final position thereon wherein the head of the cartridge is in engagement with a transverse abutment at the rear of the chamber and comprising the forward end 78 of trigger plate 34.

The operation of the mechanism thus far described will now be explained. Assuming that there is no shell in the firearm, and the breech block is held in its recoil or retracted position by the locking dog 58, as illustrated in Fig. 3, a shell may now, with ease and facility, be inserted through the side loading opening merely by placing the shell in the inclined position shown by dotted lines in Fig. 2 with its forward

end against the rear end of the plunger 70; then moving the shell forwardly against the plunger until the head of the shell clears the rear end of the loading opening and then laterally pushing the rear end of the shell through the opening, whereupon the spring pressed plunger will snap the shell rearwardly so that its head engages against the shoulder 78. When the shell is thus pushed forward against the plunger, the plunger is disengaged from the forward end of the carrier but the shell itself (due to the engagement thereof with the upper edge of the loading opening) maintains the carrier in its depressed position until the body of the shell has been entered through the loading opening far enough to be raised by the carrier. At this time the carrier (under the influence of the action spring 28 acting through the breech block and the locking dog, assisted by the spring 64) is free to swing up to shell delivery position. The breech block, being thereby released, will move the shell into the firing chamber and, as the breech block moves to its breech closing position, it will cam the carrier downwardly. As the carrier moves downwardly, it cams the plunger forwardly and then, when the carrier reaches its full depressed position, the plunger will move rearwardly to carrier latching position. A second shell may now, with equal ease and facility, be inserted through the loading opening and onto the carrier in the same manner. However, the carrier cannot move upward at this time because it is maintained in depressed position by the engagement of the flange 52 of the carrier against the bottom of the breech block. Upon firing of the shell in the firing chamber, the barrel and breech block recoil in unison until rearward movement of the barrel is stopped by the recoil spring, and then the breech block will continue to recoil and during such movement the spent shell is extracted from the firing chamber and ejected through the ejection opening in the usual manner by the suitable extractor and ejector. During the continued recoil movement of the breech block, after the recoil of the barrel has been stopped, the carrier is retained in down position because of the engagement of its flange 52 against the bottom of the advancing barrel extension, and while the flange is so engaged, the breech block reaches its rearmost position and the locking dog engages in the notch 26, thereby locking the breech block back. As the barrel approaches its firing position, the barrel extension moves out of engagement with the flange of the carrier, whereupon the carrier is raised to shell delivery position. The breech block now advances and forces the raised shell into the firing chamber and lowers the carrier towards depressed position. This sequence of operation is repeated after each shot is fired as long as fresh shells are loaded through the loading opening. If both shots are fired, the plunger comes into latching position and the mechanism remains open, the parts now being in the same position as described at the starting point.

It is observed that the plunger serves the two functions of urging the shell rearwardly into position on the platform of the carrier against the shoulder 78 and of latching the carrier in depressed position. Thus, there is eliminated the necessity of a separate carrier latch on that side of the receiver opposite the loading opening. This is conducive to simplification of construction and cheapening of the cost of manufacture. It eliminates the effort required to forcibly push the shell laterally against the spring pressed side latch to disengage it from the carrier during the operation of inserting the shell onto the carrier, and also the danger of moving the thumb or finger into the loading opening where it may be pinched by the upward movement of the carrier. The elimination of the side carrier latch is also of advantage in that its tendency to displace the shell laterally through the loading opening when the first shell is fired is avoided. Furthermore, this arrangement also eliminates the friction which would exist on account of the side carrier latch being forced by its spring against the side of the carrier during the raising and lowering of the carrier. With my improved arrangement, upon firing the first shot the gun kicks back and the cartridge stored on the depressed carrier tends to remain stationary, but as the relative movement between the gun and cartridge is in line with the axis of the barrel, there is no tendency to force the cartridge outwardly through the loading opening. Further, if the cartridge is not loaded through the loading opening completely, the plunger will lag behind the recoil of the gun, permitting the forward end of the carrier to guide the shell completely through the opening so that there is less danger of the shell being accidentally displaced from the carrier through the loading opening.

The advantage of providing the elongated bearing aperture 51 so as to permit slight longitudinal movement of the carrier will now be described. When the gun is fired, stopping of the forward movement of the barrel is brought about by the recoil spring. The barrel moves slightly beyond its normal battery position, thereby compressing the spring somewhat with the result that the spring will return the barrel backwardly past its battery position before it finally comes to rest in battery position. At this moment, a carrier may be only in its half elevated position so that a rear face of the barrel extension may strike against the forward tip of the carrier flange, thus battering it or causing other damage. By elongating the aperture 51, as previously described, a slight rearward movement of the carrier as the forward end of the flange is struck by the barrel extension is permitted so that the spring 64 will absorb the shock and thus damage to the carrier and its associated components is avoided.

In the embodiment illustrated in Figs. 1 to 5, the receiver 10 is provided with an opening 82 extending between the forward end of the trigger plate and the forward end of the chamber in the receiver 10. Said opening may be closed, if desired, by a suitable cover plate 84. Said cover is provided with an opening 86 through which the lowermost depending portion of the enlarged rearward end of plunger 70 is accessible. This permits the shooter to manually move the plunger 70 forwardly to disengage the same from the carrier 42, and thus allow the action of the firearm to move the breech block to battery position.

Referring now to the embodiment of the invention disclosed in Figs. 6, 7 and 8, the arrangement is generally similar to that shown in Figs. 1–5. In this instance, however, a magazine is provided so that more than two shells may be fired in succession without reloading. The magazine (which also acts as a guide for the recoil spring 22) is designated by the numeral 20', the magazine follower by the numeral 70',

and the magazine spring behind the follower by the numeral 76'. The extent of projection of the follower from the rear end of the magazine is limited by a shoulder 75'. The numeral 106 designates a cartridge stop, the same being pivoted on a pin 107 carried by the receiver at the rear end of a bottom opening 108 in the receiver. This stop is normally urged to its raised cartridge stopping position (shown in Figure 7) by a spring 109.

The detailed description of the operation of the firearm shown in Figs. 6, 7 and 8 is not necessary here as the operation is similar to that shown in the first embodiment. A brief statement will suffice. Assuming that there is no shell in the firearm, a first shell is inserted through the side loading opening and onto the depressed carrier in the same manner as heretofore explained with the result that the plunger 70' is moved forwardly out of latching position with respect to the carrier. Thereupon the breech block will move forwardly from its retracted position and the carrier will be raised to its delivery position shown in Fig. 7. The cartridge stop 106 is thereupon moved by its spring 109 to the position shown in Fig. 7 where it holds the plunger forwardly of its latching position shown in Fig. 6. As the breech block further advances, it pushes the first shell into the firing chamber and moves the carrier downwardly to depressed position. As the carrier moves to its full depressed position, it engages the cartridge stop and moves it down out of the way of the plunger 70' so that the latter is free to move over the forward end of the carrier to the latching position shown in Fig. 6. A second shell may now be placed on the carrier and the only thing that would happen here is that the plunger 70' would be moved forwardly out of latching position. Then, when the first shell is fired, the second shell is automatically transferred into the firing chamber. If desired, instead of placing a second shell directly onto the platform of the carrier, a succession of shells may be fed into the magazine and, finally, one upon the carrier. Now, when the first shell is fired, the shell upon the carrier is automatically transferred into the firing chamber and during such transfer the cartridge stop is effective in preventing the rearmost shell in the magazine from moving rearwardly therefrom. When the carrier swings down to cartridge-receiving position, it moves the cartridge stop from behind the rear end of the rearmost shell in the magazine so that that shell is pushed back by the magazine spring and plunger into proper position upon the platform of the carrier.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim:

1. In a firearm, a receiver, a barrel, a breech block mounted for reciprocation in the receiver, a carrier below the line of movement of the

breech block pivoted for movement between a depressed cartridge-receiving position and in elevated position where it holds the cartridge thereon in alignment with the barrel, said receiver having a loading opening in its side wall through which cartridges may be inserted directly onto said carrier when the latter is in depressed position, means for moving the carrier to elevated position as the breech block advances from its recoil position, means for moving the carrier to depressed position as the breech block approaches battery position, and a rearwardly biased carrier latch adjacent the forward end of said carrier and engageable therewith to releasably maintain the carrier in depressed position and movable to unlatched position by a cartridge during the act of manually inserting the cartridge through said side loading opening and onto the carrier.

2. In a firearm, a receiver, a barrel, a breech block mounted for reciprocation within the receiver, a chamber in the receiver below the breech block, said chamber having a cartridge loading opening in one of the side walls of the receiver, a carrier mounted for movement within the chamber between a depressed cartridge-receiving position and an elevated position where it holds the cartridge in alignment with the barrel, means for moving the carrier to elevated position as the breech block advances from its recoil position, means for moving the carrier to depressed position as the breech block approaches battery position, and a rearwardly biased plunger adjacent the forward end of the carrier arranged and constructed to releasably maintain the carrier in depressed position except when a cartridge is on the carrier and movable to unlatched position by a cartridge during the act of manually inserting the cartride through the side loading opening and to urge a cartridge so inserted rearwardly to a predetermined position upon the carrier.

3. In a firearm, a receiver, a barrel, a breech block mounted for reciprocation in the receiver, a carrier below the line of movement of the breech block mounted for movement between a depressed cartridge-receiving position and an elevated position where it holds the cartridge thereon in alignment with the barrel, said receiver having a loading opening in its side wall through which cartridges may be inserted directly onto the carrier when the latter is in depressed position, means for moving the carrier to elevated position as the breech block advances from its recoil position, means for moving the carrier to depressed position as the breech block approaches battery position, interengaging means between the carrier and the breech block releasably holding the latter in retracted position after firing the last cartridge in the firearm, and a rearwardly biased plunger adjacent the forward end of the carrier and having at its forward end a portion to overlie the forward end of the carrier to latch the carrier in depressed position except when a cartridge is on the carrier.

4. In a firearm, a receiver, a barrel, a breech block mounted for reciprocation in the receiver, a carrier below the line of movement of the breech block pivoted for movement between a depressed cartridge-receiving position and an elevated position where it holds the cartridge thereon in alignment with the barrel, said receiver having a side opening in its side wall through which cartridges may be inserted directly onto the carrier when the latter is in depressed position, means for moving the carrier to ele-

vated position as the breech block advances from its recoil position, means for moving the carrier to depressed position as the breech block approaches battery position, a forwardly facing abutment against which the head of the cartridge is adapted to engage when finally positioned upon the carrier, and a rearwardly biased plunger forwardly of and adjacent to the forward end of said carrier and engageable therewith to maintain the carrier in depressed position, said plunger being moved forwardly to an unlatched position by a cartridge during the act of manually inserting the cartridge through said side opening and said plunger urging the cartridge towards and against said abutment upon insertion through said loading opening.

5. In a firearm, a receiver, a barrel, a breech block mounted for reciprocation within the receiver, a chamber in the receiver below the breech block, said chamber having a cartridge loading opening in one of the side walls of the receiver, a carrier mounted for movement within the chamber between a depressed cartridge-receiving position and an elevated position where it holds the cartridge in alignment with the barrel, means for moving the carrier to elevated position as the breech block advances from its recoil position, means for moving the carrier to depressed position as the breech block approaches battery position, and a rearwardly biased plunger adjacent the forward end of the carrier and having on its rear end a downwardly facing abutment arranged to overlie the forward end of the carrier to releasably maintain said carrier in depressed position except when a cartridge is on the carrier, the rear end of said plunger also having above said abutment a forwardly and upwardly inclined face arranged to be engaged by the carrier to cam said plunger forwardly as the carrier is moved to depressed position.

6. In a firearm, a receiver, a barrel, a breech block mounted for reciprocation in the receiver, a carrier below the line of movement of the breech block mounted for movement between a depressed cartridge-receiving position and an elevated position where it holds the cartridge thereon in alignment with the barrel, said receiver having a loading opening in its side wall through which cartridges may be inserted directly onto the carrier when the latter is in depressed position, means for moving the carrier to elevated position as the breech block advances from its recoil position, means for moving the carrier to depressed position as the breech block approaches battery position, a magazine below the barrel forwardly of the carrier and in which cartridges may be stored, a rearwardly biased plunger in the magazine and engageable with said carrier to releasably maintain the same in depressed position and movable forwardly to unlatched position by a cartridge during the act of manually inserting the cartridge through said side loading opening and onto the carrier, and a cartridge stop movable between an inoperative position and an operative position where it limits the extent of rearward movement of the plunger or the rearmost cartridge in the magazine when the carrier is out of depressed position.

7. In a firearm, a receiver, a barrel, a breech block mounted for reciprocation in the receiver, a carrier below the line of movement of the breech block mounted for movement between a depressed cartridge-receiving position and an elevated position where it holds the cartridge thereon in alignment with the barrel, said receiver having a loading opening in its side wall through which cartridges may be inserted directly onto the carrier when the latter is in depressed position, means for moving the carrier to elevated position as the breech block advances from its recoil position, means for moving the carrier to depressed position as the breech block approaches battery position, a magazine below the barrel forwardly of the carrier for receiving cartridges, a rearwardly biased plunger in the magazine and engageable with said carrier to releasably maintain the same in depressed position and movable to unlatched position by a cartridge during the act of manually inserting the cartridge through said side loading opening and onto the carrier, and a cartridge stop having an operative position where it limits the extent of rearward movement of the plunger or the rearmost cartridge in the magazine when the carrier is out of depressed position, said stop being held in inoperative position by said carrier when depressed, and spring means urging said stop towards operative position.

8. In a firearm, a receiver, a barrel, a breech block mounted for reciprocation in the receiver, a carrier below the line of movement of the breech block mounted for movement between a depressed cartridge-receiving position and an elevated position where it holds the cartridge thereon in alignment with the barrel, said receiver having a loading opening in its side wall through which cartridges may be inserted directly onto the carrier when the latter is in depressed position, means for moving the carrier to elevated position as the breech block advances from its recoil position, means for moving the carrier to depressed position as the breech block approaches battery position, a magazine below the barrel forwardly of the carrier for receiving cartridges, a rearwardly biased plunger in the magazine and engageable with said carrier to releasably maintain the same in depressed position and movable to unlatched position by a cartridge during the act of manually inserting the cartridge through said side loading opening and onto the carrier, and a cartridge stop below said carrier and pivoted at its rear end for movement between an inoperative position and an operative position where it limits the extent of rearward movement of the plunger or the rearmost cartridge in the magazine when the carrier is out of depressed position, and spring means for urging said stop upwardly to operative position, said carrier being arranged to engage said stop and move it downward to inoperative position.

VAL A. BROWNING.

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