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FOLLOWER LATCH FOR CARTRIDGE MAGAZINES

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Fig. 1

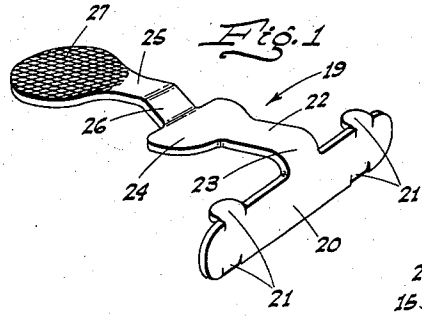


Fig. 2

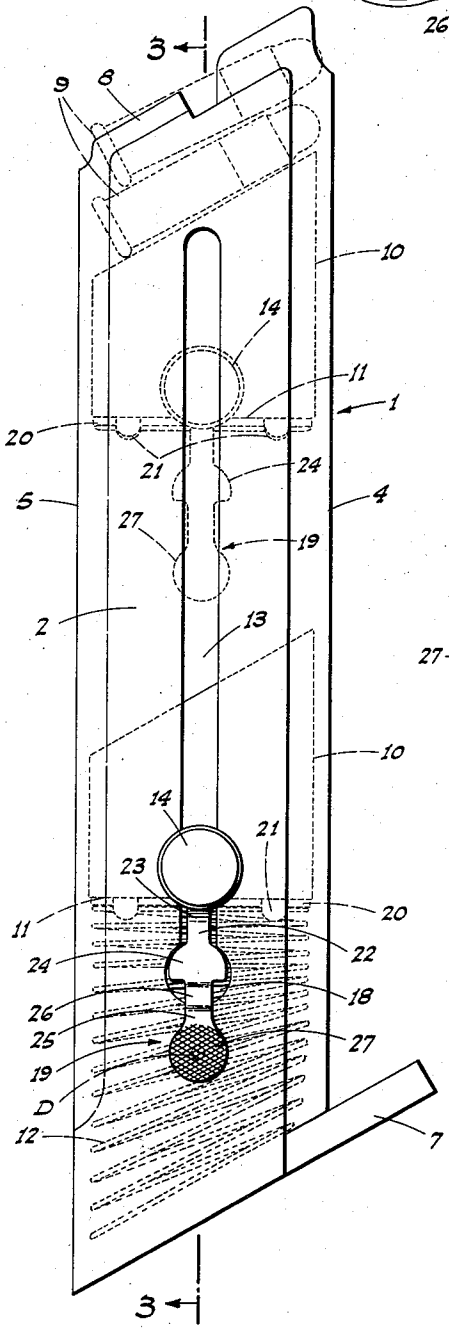


Fig. 4

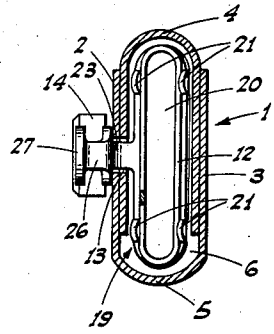
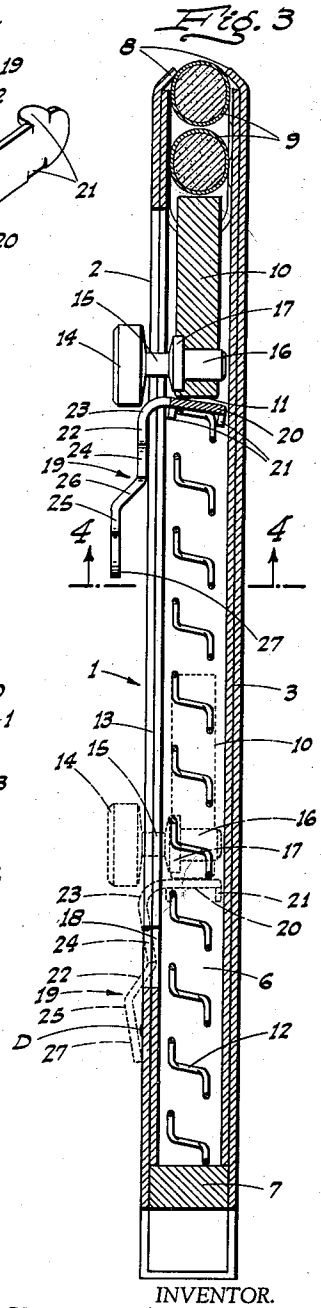


Fig. 3



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FOLLOWER LATCH FOR CARTRIDGE MAGAZINES

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9 Claims. (Cl. 42—50)

The present invention relates in general to an improvement in the removable cartridge magazine or "clip" of a gun, such as an automatic pistol or rifle, adapted to contain a stack of cartridges normally urged upwardly by a spring-pressed follower whereby the cartridges successively come to position at the top of the magazine for transfer into the gun barrel by mechanism which the gun includes.

When the magazine is removed from the gun and is to be loaded, it is necessary to retract the follower against the compression of the spring, and this is accomplished by a projecting button which must be manually shifted downwardly and then held—by one hand—in such position while a supply of cartridges is fed—by the other hand—into the magazine from the top. To thus hold the button and follower down while the loading of the magazine progresses is difficult and tiresome.

It is, therefore, the major object of the present invention to provide a novel follower latch, for a cartridge magazine, which functions automatically—upon downward shifting of the follower—to releasably secure the latter in its lowered position and so that both hands of the user are then free to conveniently load the cartridges into the magazine from the top thereof.

Another important object of the invention is to provide a follower latch, for the purpose described, which is easily manually released after the magazine is loaded.

It is also an object of the invention to provide a follower latch, for a cartridge magazine, which is adapted either for inclusion in a conventional magazine at the time of manufacture, or subsequently as a readily applied attachment; the latch remaining on the magazine as a unitary part thereof, and for ready use.

A further object of the invention is to provide a follower latch, for a cartridge magazine, which—when in engaged position—may also serve as a safety. By permitting the latch to remain engaged when the loaded magazine is inserted in the gun, the follower does not spring-use the cartridges upwardly in the magazine and such cartridges cannot then be fed into the gun barrel.

It is also an object of the invention to provide a follower latch, for a cartridge magazine, which is designed for ease and economy of manufacture, and simplified installation without modification of the magazine in its conventional form.

A still further object of the invention is to provide a practical, reliable, and durable follower latch, for a cartridge magazine, and a latch which is exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims:

In the drawings:

Fig. 1 is a perspective view of the follower latch, detached.

Fig. 2 is a front elevation of a cartridge magazine including the follower latch; such latch being shown in its engaged position in full lines, and in disengaged position in dotted lines. In this view, the cartridges, the follower, and the spring are likewise shown in dotted lines.

Fig. 3 is a vertical sectional elevation taken on line 3—3 of Fig. 2; the follower latch being shown in its engaged position in dotted lines and in disengaged position in full lines.

Fig. 4 is a horizontal cross section taken on line 4—4 of Fig. 3.

Referring now more particularly to the drawings and to the characters of reference marked thereon, the magazine in which the follower latch is adapted to be incorporated is of conventional form; such magazine being indicated generally at 1. The magazine 1, which is a vertically elongated case, includes a front wall 2, a back wall 3, and opposite end walls 4 and 5; all of such walls defining a transversely elongated chamber 6 closed at the bottom by an inclined butt plate 7. At the top the magazine 1 is substantially open and diagonals in general parallelism to the butt plate 7; the walls 2 and 3 being provided, at the top, with relatively short inturned lips 8 which serve as the retention means for the upper cartridge 9 of a stack thereof in said magazine. Although retained against upward displacement by the lips 8, the uppermost cartridge 9 can, of course, as is usual, be advanced lengthwise out of the magazine into the gun barrel by the usual mechanism of the gun.

The stack of cartridges 9 in the magazine 1 is normally urged upwardly by a spring-pressed follower 10 slidably disposed in the magazine; the bottom 11 of such follower being horizontal, and a normally expanded but loaded helical compression spring 12 is disposed between said bottom 11 of the follower 10 and the butt plate 7. The helical compression spring 12 is substantially rectangular but transversely elongated in each convolution whereby it is symmetrically received in the magazine 1.

The front wall 2 is formed centrally therein with a vertically elongated slot 13 which extends for a major portion of the length of said magazine, and an exterior button 14 is disposed outwardly of the slot 13 in overlying relation thereto. A neck 15 projects inwardly from the button 14, through the slot 13, and into the follower 10; such neck being enlarged at its inner end, as at 16, for reception in a corresponding bore in said follower.

A circular flange 17 is included in the enlarged inner end 16 of neck 15, and is frictionally received in a corresponding recess in the follower 10.

In order to permit assembly of the parts, there is an enlarged circular opening 18, at the lower end of the slot 13, which permits passage of the flange 17 into the magazine 1 for engagement with the inner end 16 of neck 15 into the receiving bore of the follower.

The present invention takes advantage of said enlarged opening 18 in the manner as will hereinafter appear.

The foregoing is the conventional construction of the magazine 1, and heretofore when it was desired to load such magazine, the follower 10 was shifted downwardly to a lowered position and against the compression of spring 12 by moving the button 14 to a lowered position and then—with one hand—holding such button in said position. The cartridges 9 were then loaded into magazine 1 from the top and with the other hand.

As the spring 12 has substantial loading—when compressed by lowering of the follower 10—it was difficult to hold the button 14 in its down position with one hand while the magazine was loaded with the other.

The present invention, therefore, provides a novel latch which automatically engages and holds the follower 10 in its down position during the loading of the magazine, and which can then be accomplished by both hands as they are free.

The follower latch, which is indicated generally at 19, is constructed, mounted, and functions as follows:

The follower latch 19 comprises a flat, relatively narrow elongated cross plate 20 which is disposed transversely in the magazine 1 between the upper end of the helical compression spring 12 and the bottom 11 of follower 10; such cross plate 20 being formed with dependent, spring-locating ears 21 disposed on opposite sides of said cross plate adjacent its ends.

An upper, substantially vertically extending finger 22 is disposed outwardly of the slot 13, and at its upper end such finger is connected in integral relation to the front edge of the cross plate 20, centrally of the ends of the latter, by an elbow 23 which passes in slidable relation through said slot 13. The included angle between the cross plate 20 and the upper vertical finger 22 is slightly less than ninety degrees for the purpose as will hereinafter appear.

At its lower end, the upper vertical finger 22 merges, in integral relation, with the top of a transversely enlarged, substantially semi-circular, flat catch 24 which spans the slot 13 and normally bears against the front wall 2 on opposite sides of such slot.

With the flat catch 24 thus bearing against the front wall 2, the cross plate 20 inclines rearwardly and downwardly somewhat (see Fig. 3) relative to the point of engagement with the bottom 11 of follower 10; this being due to the fact that the included angle between said plate 20 and finger 22 is, as aforesaid, somewhat less than ninety degrees. Consequently, the upward pressure exerted on the cross plate 20 by the helical compression spring 12 tends to move such plate to horizontal (but which cannot normally occur), and the finger 22 and the catch 24 tend to swing inwardly so that said catch is maintained under pressure against the front wall 2.

For loading of the magazine 1 and when the button 14 is manually engaged and pushed downwardly to a lowered position, the follower 10 is correspondingly shifted downwardly in the magazine 1 against the compression spring 12. With such movement of the button 14 and follower 10, the catch 24 slides down the front wall 2 until it reaches the enlarged opening 18, and at which time said catch automatically snap-engages in such opening by reason of its tendency to move inwardly under the influence of the compression spring 12 on the normally inclined cross plate 20. With such snap-engagement of the catch 24 in the opening 18, the follower 10 is relieved of the load or upward pressure normally exerted thereon by the spring 12, and said follower automatically remains in its lowered position so that the user has both hands free to load a stack of cartridges 9 into the magazine 1 from the top thereof.

When it is desired to release the latch 19—to permit the follower 10 to rise under the influence of the spring 12 and for normal use of the magazine—such latch is released by the following means:

An integral lower finger 25 is connected at its upper end centrally to the lower edge of said catch 24, and said finger includes—adjacent the catch—an outward offset 26 which disposes the remainder of the finger 25 in a vertical plane outwardly of the catch; the lower end of finger 26 being formed with an enlarged coplanar finger tab 27. As the tab 27 is outwardly offset relative to the catch 24, such tab does not prevent free snap-engagement of said catch in opening 18 when the follower is moved to lowered position.

The follower latch is released by pressing downwardly slightly on button 14, finger-engaging the tab 27, and then pulling outwardly thereon which withdraws the catch 24 from the opening 18, whereby to permit the follower to rise in the magazine 1 under the influence of the spring 12. The loaded magazine 1 is then ready for insertion in the gun for use.

If desired, the loaded magazine 1 may be inserted

in the gun with the follower latch 19 engaged, and in such event the latter serves as a safety; this for the reason that the follower 10 is maintained in its lowered position and does not urge the stack of cartridges 9 upwardly in the magazine. Under this condition the uppermost cartridge cannot be fed from the magazine into the gun barrel.

An indicator dot D, preferably red in color, is applied to the face of front wall 2 directly below opening 18 and in position to be covered by finger tab 27 when the follower 10 is lowered and the follower latch 19 engaged. At such time as the latch is released, and the follower rises against a stack of cartridges in the magazine, finger tab 27 moves upwardly and exposes dot D warning the user that the loaded magazine is in condition for cartridge transfer into the gun barrel.

From the foregoing description, it will be readily seen that there has been produced such a device as substantially fulfills the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful and upon which Letters Patent is desired:

1. In a cartridge magazine which includes a follower slidable therein, a compression spring between the bottom of the magazine and the follower normally urging the latter upwardly, and an exteriorly exposed member connected to the follower for manual engagement and downward shifting whereby to move the follower against the spring to a lowered position; a follower latch comprising a catch element separate from said member and the follower, means rigid with the catch element mounting the same for downward movement with the follower, an upstanding wall on the magazine, said catch element being disposed to move along said wall, the mounting means being engaged in part by the spring and formed to translate force from the latter to inward pressure on the catch element whereby the latter is urged into engagement with said wall, and the latter having an opening into which said catch element releasably snap-engages upon movement of the follower to said lowered position.

2. In a cartridge magazine which includes a follower slidable therein, a compression spring between the bottom of the magazine and the follower normally urging the latter upwardly, and an exteriorly exposed member connected to the follower for manual engagement and downward shifting whereby to move the follower against the spring to a lowered position; the magazine having an upstanding wall formed with a longitudinal slot therein and an enlarged opening at the bottom of the slot, and said member including a neck extending through the slot to connection with the follower; a follower latch separate from the follower and member, said latch comprising a catch element adapted to engage in the opening but normally spanning the slot above such opening, means mounting the catch element for downward movement with the follower and in yieldable pressure engagement with the outer face of the wall whereby upon movement of the follower to lowered position the catch element releasably snap-engages in said opening, and means to manually release the catch element from said opening.

3. A follower latch, as in claim 2, in which the mounting means includes a part in the magazine engaged by the spring; such part, under the influence of the spring, imparting inward pressure to the catch element.

4. In a cartridge magazine which includes a follower slidable therein, a compression spring between the bottom of the magazine and the follower normally urging the latter upwardly, and an exteriorly exposed member connected to the follower for manual engagement and

downward shifting whereby to move the follower against the spring to a lowered position; the magazine having an upstanding wall formed with a longitudinal slot therein and an enlarged opening at the bottom of the slot, and said member including a neck extending through the slot to connection with the follower; a follower latch comprising a catch element adapted to engage in the opening but normally spanning the slot above such opening, a plate in the magazine between the upper end of the spring and the bottom of the follower, and a generally L-shaped part connected at one end to the plate and thence extending outwardly through the slot, the catch element being outwardly of the wall and fixed to the other end of said part for downward movement with the follower to a lowered position; said plate and part being arranged so that the spring normally urges the catch element into yieldable pressure engagement with the wall but whereby said catch element releasably snap-engages into the opening upon downward motion with the follower to said lowered position.

5. In a cartridge magazine which includes a follower slidable therein, a compression spring between the bottom of the magazine and the follower normally urging the latter upwardly, and an exteriorly exposed member connected to the follower for manual engagement and downward shifting whereby to move the follower against the spring to a lowered position; the magazine having an upstanding wall formed with a longitudinal slot therein and an enlarged opening at the bottom of the slot, and said member including a neck extending through the slot to connection with the follower; a follower latch comprising a catch element adapted to engage in the opening but normally spanning the slot above such opening, a plate engaged between the upper end of the spring and the bottom of the follower, the plate being normally inclined downwardly from a point of engagement with the follower, and a finger rigid with the plate adjacent said point, passing through the slot, and thence extending lengthwise of the wall outside thereof; the catch element being on the outer end of said finger, and the included angle between the plate and the lengthwise portion of the finger being related to the inclination of said plate in a manner whereby the force of the spring is translated to the catch element causing the latter to normally yieldably pressure engage the wall but whereby said catch element releasably snap-engages into the opening upon downward motion with the follower to said lowered position.

6. A follower latch, as in claim 5, including means to manually release the catch element from said opening; said means including another finger rigid with and extending from said catch element opposite said lengthwise portion of the first named finger, and a finger tab on the outer end of said other finger, the latter having an offset therein to dispose the tab in spaced relation outwardly of the wall.

7. In a cartridge magazine which includes an upstanding wall provided with a longitudinal slot having an enlarged opening at the lower end thereof, a follower slidable in the magazine, a compression spring in the magazine between the bottom thereof and the bottom of the follower, and a finger element connected to the follower and projecting through the slot for finger engagement; a follower latch comprising a catch element normally riding the outside of said magazine wall in vertical alinement with the enlarged opening and of a size to fit in said opening, a cross plate in the magazine projecting between the bottom of the follower and the adjacent end of the spring, and a neck connecting the cross plate and the catch element in rigid relation and slidable along the slot; the angle of the cross plate relative to the bottom of the follower when the catch element is riding said magazine wall being such that the pressure of the spring against said cross plate will enable and cause the latter to be deflected and the catch element to enter the enlarged opening when said element moves down the wall to register with said opening.

8. A latch, as in claim 7 in which the length of the cross plate is greater than the width of the slot but of a thickness less than that of the slot, and the neck is of a lesser width and thickness than the slot.

9. In a cartridge magazine which includes an upstanding wall provided with a longitudinal slot having an enlarged opening at the lower end thereof, a follower slidable in the magazine, a compression spring in the magazine between the bottom thereof and the bottom of the follower, and a finger element connected to the follower and projecting through the slot for finger engagement; a follower latch comprising a catch element normally riding one face of said magazine wall in vertical alinement with said enlarged opening and of a size to fit the same, a cross plate projecting between the bottom of the follower and the adjacent end of the spring and engaged thereby, and means rigidly connecting the cross plate and catch element and including a member slidably projecting through the slot in guided relation; the angle of the cross plate relative to the bottom of the follower when the catch element is riding said magazine wall being such that the pressure of the spring against said cross plate will enable and cause the latter to be deflected and the catch element to enter the enlarged opening when said element moves down the wall to register with said opening.

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