

Oct. 31, 1950

G. M. TASSAN  
SLIDING LOCK FOR BREECH BOLTS  
OF AUTOMATIC SHOTGUNS

2,527,895

Filed May 3, 1947

3 Sheets-Sheet 1

FIG. 1.

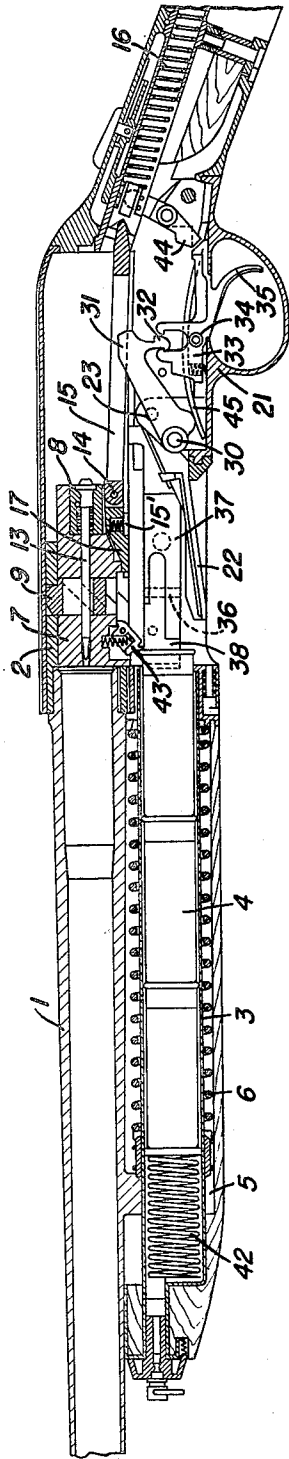
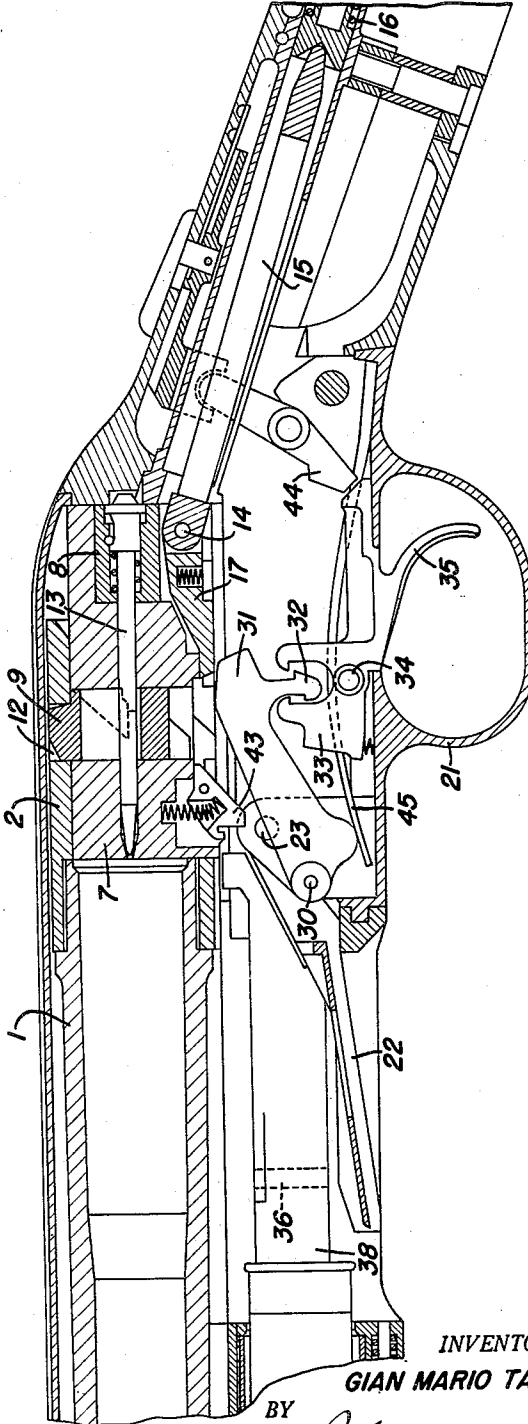


FIG. 2.



INVENTOR.

GIAN MARIO TASSAN

BY

*B. Schlinger*

ATTORNEY

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FIG. 3.

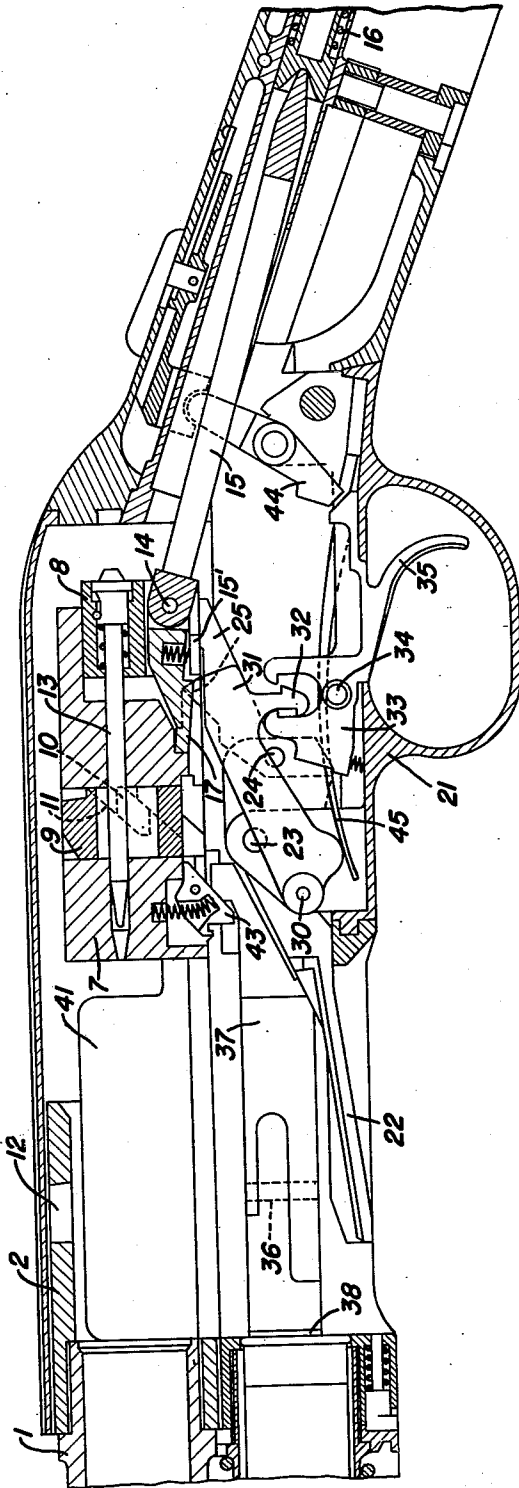


FIG. 5.

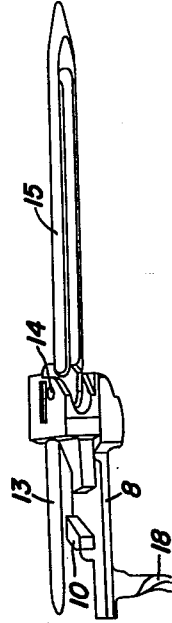
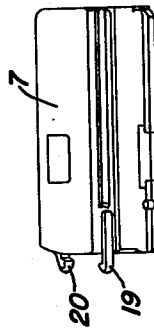


FIG. 4.



INVENTOR.

GIAN MARIO TASSAN

BY

*P. Schlenger*

ATTORNEY

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FIG. 6.

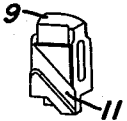


FIG. 7.

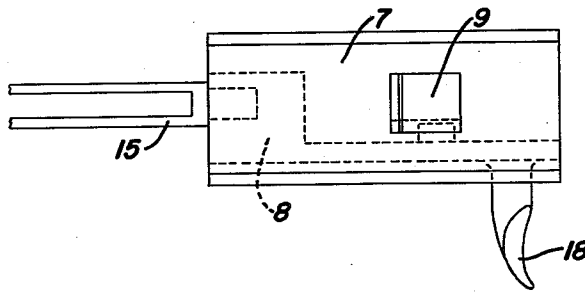


FIG. 8.

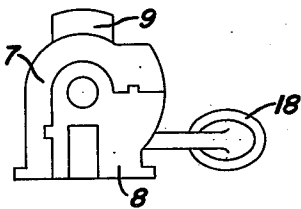


FIG. 9.

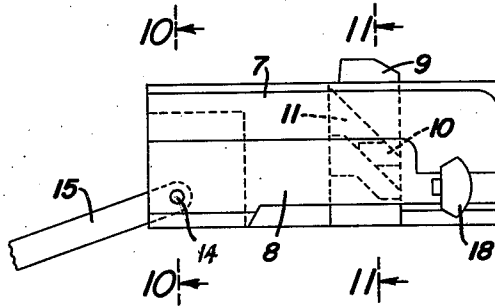


FIG. 10.

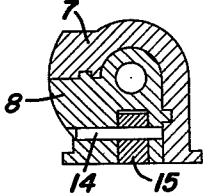
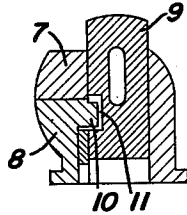


FIG. 11.



INVENTOR.

GIAN MARIO TASSAN

BY

ATTORNEY

## UNITED STATES PATENT OFFICE

2,527,895

SLIDING LOCK FOR BREECH BOLTS OF  
AUTOMATIC SHOTGUNSGian Mario Tassan, Milan, Italy, assignor to firm  
Società Italiana Ernesto Breda Per Costruzioni  
Meccaniche, Milan, ItalyApplication May 3, 1947, Serial No. 745,696  
In Italy May 4, 1946

2 Claims. (Cl. 89—187)

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The present invention relates to an automatic long recoil shotgun with magazine, in which a locking block device has been provided to lock the breechblock on the barrel with the purpose of obtaining easy working, reduced dimensions, quick and easy dismountability, and safety against any possible actuation of the firing pin when the gun has not reached the blocked position.

In view of these objects, the shotgun according to the invention comprises firstly a locking block device comprising a locking member slidable along guides consisting preferably of plane surfaces in the breechblock body and slidable with respect to the breechblock bolt along other guides also consisting preferably of plane surfaces inclined to the afore-mentioned surfaces.

The locking bolt, moving forward with respect to the breechblock, lifts the aforesaid locking member when the breechblock, resting on the breech surface, brings the locking member opposite a recess in the breech body; moreover, the firing pin is mounted on a locking bolt, so that it is not in the position of firing until locking has taken place, which constitutes a safety arrangement.

The above and still other features of the invention will appear more completely from the following description of an embodiment of the invention given only as an example, with reference to the attached drawings, wherein:

Fig. 1 is a partial sectional view of the shotgun in the cocking position;

Fig. 2 is a partial sectional view of the shotgun in the recoiling position;

Fig. 3 is a partial sectional view of the shotgun with the breechblock retained in the recoil position;

Fig. 4 is a perspective view of the breechblock with the extractors;

Fig. 5 is a perspective view showing the locking bolt, firing pin, and recuperation rod;

Fig. 6 is a perspective view of the locking block;

Fig. 7 is a plan view of the breechblock and the recuperating rod to which it is pivotally connected, the latter being shown only fragmentarily;

Fig. 8 is an end elevation looking at one end of the breechblock, locking bolt, and handle;

Fig. 9 is a side elevation showing the breechblock, locking bolt, and handle, and the recuperation rod to which the block is pivotally connected;

Fig. 10 is a section on the line 10—10 of Fig. 9; and

Fig. 11 is a section on the line 11—11 of Fig. 9. As appears from Figs. 1 to 3, the barrel 1, with the breech 2, is slidable on the tubular body of the magazine 3 which can contain, for example,

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three cartridges 4, and is guided by the projection 5 and counteracted by the recuperating spring 6.

Behind the barrel the breechblock can slide, represented in detail in Figs. 4 to 11, inclusive, and composed substantially of a body 7, a locking bolt 8 and a locking block 9.

The locking bolt 8, is slidable on the body 7 and the locking block 9 is slidable on both the aforesaid members, the locking bolt having an inclined projection 10 which is adapted to engage in the inclined groove 11 of block 9. The locking block 9 serves to connect the breechblock 7 with the breech 2 by penetrating into the recess 12 of the breech. The firing pin 13 is mounted on the locking bolt. The rod 15 has one end fitting in a recess in the recuperation spring 16 which is mounted in the butt of the gun. At its other end, the rod 15 is connected by a pivot pin 14 with the nose 17. The locking bolt 8 is also provided with the hook or handle 18 for manual operation.

Extractors 19 and 20, to which an ejector, not represented, corresponds, are mounted on the breechblock.

A support piece 21 bears the spoon cartridge carrier 22 on the pivot 23. On this support piece is also hinged at 24 the hook 25, for retaining the breechblock. The hammer 31 is pivoted at 30 and engages by its projection 32 the hook 33 of the trigger 35 hinged at 34. On the cartridge case, the pivot 36 bears the lever 37 for the retention of the carrier 22 and the lever 38 for preventing double feeding.

The principal members of the shotgun according to the embodiment represented having thus been described, the operation is now outlined for sake of a clearer description.

The breechblock 7 is first cocked by pulling it back by the hook 18 of the locking bolt 8 so as to engage it with the tooth of the hook 25. By pulling back the locking bolt 8, the locking block 9 is lowered by the inclined planes 10 and 11 and recoils wholly in the breechblock body 7 remaining then in this position because the rod 15 of the locking bolt, tilts to follow the compression of the spring 16 and rises, by means of the elastic lever 15'. The nose 17, which engages the breechblock body 7, thus retains the locking bolt in the recoil position (Fig. 3). It is to be observed that in this position, also, the firing pin 13 is kept backwards and the locking block 9 cannot lift. On the other hand, it is not possible for the locking bolt, and consequently the firing pin, to move forward to firing position if at the same time the locking block 9 is not engaged in the recess 12 of the breech 2, this constituting a safety feature.

A cartridge is then introduced into the recess 41 and placed in the barrel 1. By pressing on

the retention lever 37, the carrier 22 is made free to rotate on its pivot 23; and its front part lifts while its rear part lowers. This causes the hook 25, which is connected with the carrier 22 by pin 24, to disengage the hook 25 from the locking bolt 8, so that the whole of the breechblock, by the action of the spring 16, is forced to closing position forcing the cartridge into the barrel, while the locking bolt, after disengagement of the nose 17, enters wholly into the breechblock body, raising the locking block 9, as explained before, into the recess 12 of the breech 2. To feed the magazine, the gun is turned upside-down, the retaining lever 37 is pressed and the carrier 22 are pressed towards the breechblock, so that the cartridges 4 can be introduced into the magazine 3, compressing the spring 42. The cartridges are retained in the magazine by the elastic tooth 43 of the breechblock.

During these operations it will be advisable, of course, to keep the trigger locked by the safety device 44.

The gun is now ready to fire; by pressing on the trigger 35, after having removed the trigger safety 44, the anchor lever 33 is disengaged from the projection 32 of the hammer 31. The hammer is thereupon rocked by the leaf spring 45, hitting the firing pin 13 and causing the explosion of cartridge capsule and the shot.

Due to the gas reaction, the barrel and breech recoil integral with the breechblock unit, compressing the springs 6 and 16. The carrier 22 is consequently lowered.

The breech recoil liberates the lever 38 and a second similar lever (not shown) pivotally mounted in the cartridge case 3 in diametrically opposed relation to the lever 37. These levers then engage the rearmost cartridge 4 contained in the magazine which has previously been retained in position by the tooth 43.

At the same time, the hammer 31 is brought back and its projection 32 engages the hook 33 of the trigger 34. At the end of the recoil stroke, the parts are in the positions shown by Fig. 2.

At this moment the movement of the recoiling masses is reversed by the action of the springs 6 and 16 and all of them move together again forwardly. The locking bolt 8, however, is stopped by the tooth of hook 25 mentioned above; and the barrel moving forward drags the breechblock forward for a distance sufficient to cause the locking block 9, by the mutual displacement explained before, to lower and disengage from the recess 12 of the breech 2, while the latter still moves forward (Fig. 3). The shell of the shot cartridge is retained by the hooks of the extractors 19, 20 and is dragged out of the barrel. The breech 2, at the end of its return stroke, liberates the shell from the extractors and throws it out in a known manner.

The breech 2 at the end of the return stroke liberates the cartridge in the spoon carrier 22, while the next cartridge 4' moves against the lever 38 which prevents double feeding.

The cartridge 4 made free, while moving back, displaces the lever 37, thus liberating the carrier 22, which, owing to the position of the hook 25, is forced upwards by a spring (not shown) and also by the spring 16 acting through the locking bolt on the hook 25, thus lifting the cartridge 4. The carrier 22, however, when lifting, lowers in turn the hook 25, thus liberating

the breechblock which moves onto the breech urged by the spring 16, forcing the cartridge 4 into the barrel. The rod 15 (Fig. 1) is no more inclined and the elastic lever 15' acts no more on the nose 17 but leaves it free to lower, so that the locking bolt can also proceed forward causing the locking block 9, due to the action of the inclined planes 10 and 11, to rise again and lock the breechblock on the breech.

The breechblock, while thus moving forward, causes the double feed prevention lever 38 to be retracted, also. Hence the following cartridge moves rearwardly to abut the elastic tooth 43, all returning thus to the phase preceding firing, which can be identically repeated as there are times as many cartridges contained in the magazine 3.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. In an automatic long recoil shutgun, a barrel with a breech, a breechblock, a locking bolt arranged in longitudinally sliding connection with said breechblock, a recoil spring acting in a direction non-parallel to the barrel, a rod connecting said spring to said locking bolt, said rod being so mounted that it is tilted when said breechblock and locking bolt recoil, a locking block laterally movable on said breechblock and engaging said locking bolt to move said locking bolt with respect to said breechblock when said locking bolt slides forward with respect to said breechblock, a pawl hinged on said locking bolt and pivotally connected to said rod, said pawl being adapted to engage said breechblock to prevent said locking block from sliding forward with respect to said breechblock when said rod is not parallel to the barrel.

2. In an automatic long recoil shotgun a barrel with a breech, a breechblock, a locking bolt arranged in longitudinally sliding connection with said breechblock, a firing pin slidably mounted in said locking bolt, a recoil spring acting in a direction non-parallel to the barrel, a rod connecting said spring to said locking bolt, said rod being so mounted that it is tilted when said breechblock and locking bolt recoil, a locking block laterally movable on said breechblock and engaging said locking bolt to move said locking bolt with respect to said breechblock when said locking bolt slides forward with respect to said breechblock, a pawl hinged on said locking bolt and pivotally connected to said rod, said pawl being adapted to engage said breechblock to prevent said locking block from sliding forward with respect to said breechblock when said rod is not parallel to the barrel.

GIAN MARIO TASSAN.

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