

G. H. TANSLEY.  
 SAFETY DEVICE FOR FIREARMS.  
 APPLICATION FILED NOV. 3, 1916.

Patented July 31, 1917.

1,234,961.

Fig. 1.

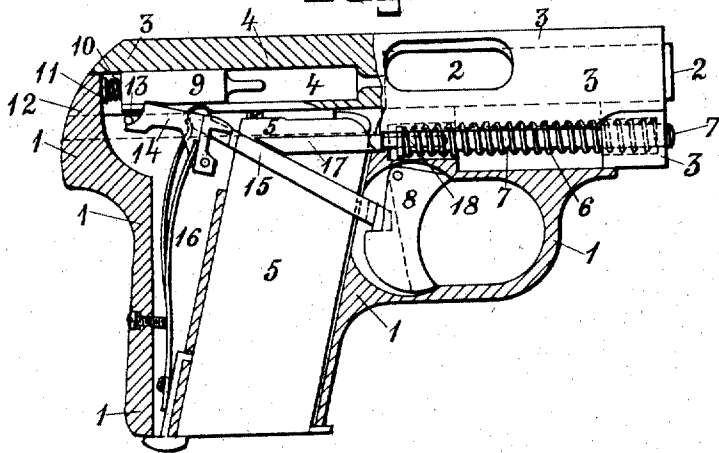


Fig. 3.

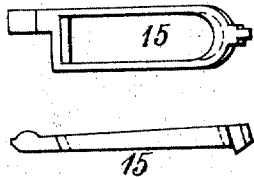


Fig. 4.

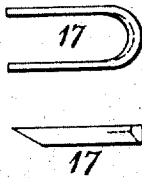
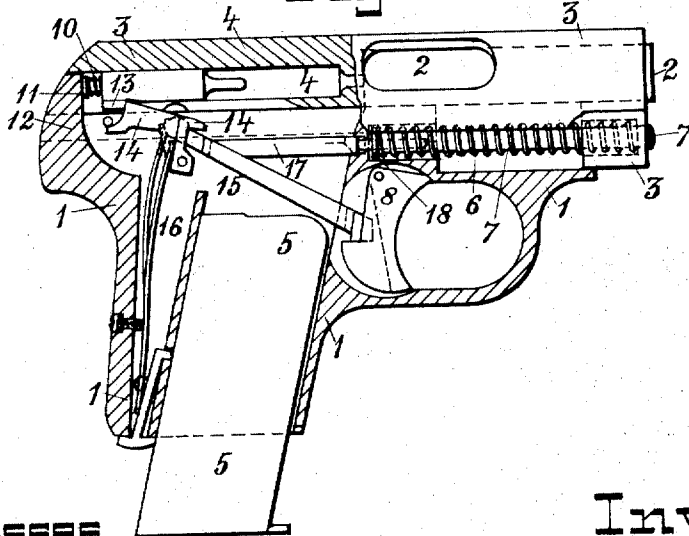


Fig. 2.



Witnesses.

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# UNITED STATES PATENT OFFICE.

GEORGE H. TANSLEY, OF HARTFORD, CONNECTICUT, ASSIGNOR TO COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SAFETY DEVICE FOR FIREARMS.

1,234,961.

Specification of Letters Patent.

Patented July 31, 1917.

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*To all whom it may concern:*

Be it known that I, GEORGE H. TANSLEY, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Safety Device for Firearms, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to improvements in safety devices for magazine firearms of the class in which the cartridges are supplied in a separate magazine adapted for insertion into a seat in the body of the arm and for being securely locked therein in such a manner that the magazine may be at will released and removed from the arm. This invention more especially relates to automatic small-arms and particularly to automatic pistols of this class, with which, as shown by experience, certain dangerous accidents are liable to occur, when such arms are handled by persons not thoroughly acquainted with their construction and operation; even though the arms may have been specially provided with automatic and manual safety devices by which the firing of them is made impossible unless, with all parts in the proper firing position, the trigger is pulled. The dangerous accidents referred to are caused by the erroneous belief that after the removal of the cartridge magazine from its seat in the arm, the firing of the same becomes positively impossible; whereas in fact, a loaded cartridge may have been previously transferred from the magazine to the barrel of the arm and may still remain in the chamber of the same liable to be exploded if the trigger should be pulled even after the removal of the magazine.

The object of the present invention is to always and positively prevent such accidental firing and this object is attained by providing a device of simple and practical construction whereby the removal of the cartridge magazine from the arm serves to automatically interrupt the connection between the trigger and the firing mechanism of the arm, so that, unless the magazine is in its proper position in its seat, the pulling of the trigger cannot cause the release of the firing mechanism or the explosion of a cartridge in the barrel.

The embodiment of my improvements il-

lustrated in the accompanying drawings is an automatic magazine pistol well known as the Colt automatic vest pocket pistol, but it will be understood that I do not intend to restrict the present invention to an automatic pistol.

In the accompanying drawings:

Figure 1, is a longitudinal vertical section of an automatic pistol, with the cartridge magazine locked in its seat, the breech closed and the firing mechanism cocked ready for firing, the forward portion of the breechslide being shown in a side view.

Fig. 2, is a view similar to Fig. 1, but with the cartridge magazine unlocked and partly withdrawn downward from its seat, and with the connection between the trigger and cocked firing mechanism interrupted.

Fig. 3, shows a top view and a side view of the connector, detached.

Fig. 4, shows a top view and a side view of the disconnecter, detached.

Similar letters refer to similar parts throughout the several views.

In the pistol represented in the drawings, 1 is the frame, 2 the barrel and 3 the breechslide. The top of the frame 1 upon the forward portion of which the barrel 2 is mounted, forms a seat for the reciprocating breechslide 3. In rear of the barrel 2 the upper part of the frame forms the receiver and the lower part the grip or handle, the hollow inside of which provides the seat for the reception of the cartridge magazine 5, which is a tube holding a number of cartridges one above the other resting upon a spring-pressed follower in the usual manner. The magazine 5 is inserted into the grip from below, its top communicating with the receiver, and with the rear of the barrel, and at each opening and closing movement of the breechslide 3 a cartridge is fed from the magazine to the barrel 2. The barrel 2 is fixed upon the frame against lengthwise movement and the rear of the barrel is closed by the breechbolt 4 which forms the rear portion of the breechslide 3, forward of the breechbolt 4 the breechslide 3 extends in semi-tubular form inclosing the barrel 2 at its top and sides. The sides of the breechslide 3 overlap those of the frame 1, and are provided with longitudinal ribs interlocking with corresponding grooves in the sides of the frame, so as to

lock the breechslide 3 vertically to the frame 1 and guide it in its reciprocations thereon. At the forward end the breechslide 3 is closed at the bottom by a depending front abutment, tubular in form and parallel to the axis of the slide.

In front of the grip the top of the frame 1 extends forward beneath the barrel and provides a seat for the reaction-spring 6 and its guide-rod 7, and for the depending front abutment of the breechslide. The rear end of the reaction-spring 6 is supported by the head of the guide-rod 7 resting against the end of the seat in the frame, while the forward end of the reaction-spring bears upon a shoulder in the front abutment of the breechslide; the tension of the reaction-spring 6 thus yieldingly keeps the breechslide 3 in the forward closed position, while the front abutment limits the rearward movement of the breechslide upon the frame and positively prevents the breechslide from being rearwardly thrown from the frame.

In front of the grip the trigger 8 is located in the trigger-guard.

The breechbolt 4, carries the combined firing-pin and hammer 9, the hammer is hollow and in it the forward portion of the mainspring 10 is seated, the rear end of which is supported upon a guide-rod 11, the head of which rests against an upwardly projecting abutment 12 upon the rear end of the frame 1, which closes the hammer-seat in the breechbolt 4. The hammer 9 has under its rear end a rib 13 guided in a longitudinal slot in the bottom of the breechbolt.

Below the breechbolt and in rear of the grip the sear 14 is mounted upon a pivot-pin in the frame, and a connector 15 extends from the trigger 8 upward and rearward to the front of the sear 14, and serves to transmit the movement of the trigger 8 to the sear 14. The forward end of the connector 15 extends into a recess in the trigger 8 and rests upon a shoulder on the same in rear of which the connector has the form of a stirrup for the free passage through it of the magazine, the rear of the stirrup being closed by a transverse bar carrying on its left side a rearward extension, see Fig. 3.

A flat bifurcated spring 16 is arranged in the grip, the upper end of one of its leaves bearing against the beveled end of the connector yieldingly holds the connector 15 and the trigger 8 in forward position, while the other leaf rests against the sear 14 above its pivot and yieldingly holds the rearwardly extending arm of the sear in the raised position. This arm of the sear corresponds in location and thickness with the central slot in the bottom of the breechbolt 4, and, in its raised position the arm of the sear projects into the path of the rib 13 under the hammer, the upper rear corner of this sear thus forms the sear-point for engaging and hold-

ing cocked the hammer 9, the forward end of the rib of the hammer forming the cock-notch of the same. The forward upper nose of the sear 14 is normally engaged by the transverse bar of the connector when the breechbolt 4 is in closed firing position and the hammer is cocked, see Fig. 1, so that by a pull on the trigger 8 the connector 15 will turn the sear 14 and cause its rear arm to move downward so as to release the cocked hammer.

On the top of the end of the rearward extension of the connector 15 a rounded projection is provided and a corresponding recess in the bottom of the breechbolt 4 is so located that when the breechslide is in its forward firing position the projection may rise into the recess thereby allowing the connector to rise into its operative position in which the rearward movement of the trigger will cause the connector to turn the sear so as to release the hammer for firing; but if the breechslide 3 is moved to the rear the rounded forward end of the recess will force the rear end of the connector 15 downward and thereby lower the transverse bar of the same so as to stand below the forward nose of the sear 14, where it cannot effect the turning of the sear. This arrangement being a positive safety device by means of which the cocked hammer is prevented from being released for firing unless the breechslide is in the proper forward firing position.

All the features so far herein shown and described are old and well known ones of the pistol represented, but as my present novel improvement is closely connected and combined with them in its construction and operation, a ready and clear understanding of the novel improvement cannot be obtained without reference to the older features.

Near the top of the magazine seat and a short distance below the bottom of the breechbolt 4 a recess is cut in both side walls of the seat, the top and bottom of the recess being horizontal or parallel with the axis of the breechslide and the depth of the cut equal to that of the inclined recess in which the stirrup-shaped connector 15 is fitted to freely slide without interfering with the cartridge magazine which it surrounds on both sides and at rear and front.

In this upper horizontal recess the disconnector 17 is fitted to freely slide, it being shaped like the forward half of the looped portion of the connector, so that it surrounds the front of the magazine without touching the sides of the same. In Fig. 4 the disconnector 17 is shown detached in a top view and a side view. The upper recess extends forward some distance into the frame and allows the semi-circular front portion of the disconnector 17 to enter thereinto. The two sides of the disconnector 17 extend rearward

until they meet with the upper surface of the side bars of the connector 15, where the ends of the disconnecter are preferably inclined forward and downward to correspond with the inclination of the connector 15. See Figs. 1, 2 and 4.

In front of the disconnecter 17, a hole in the frame extends forward into the seat of the reaction-spring 6 below the barrel, and a rod fitted in the rear end of the reaction-spring guide-rod 7, projects through the hole and rests against the front end of the disconnecter 17. By this means the tension of the reaction-spring is exerted to yieldingly press the disconnecter 17 rearward.

When the cartridge magazine 5 is pushed upward into the pistol, its upper front portion encounters the disconnecter 17 and as this forward part of the top of the magazine is rounded vertically and horizontally and the inner face of the disconnecter 17 is beveled, see Figs. 2 and 4, the last of the upward movement of the magazine forces the disconnecter 17 forward against the tension of the spring and thereby withdraws the rear ends of its side bars from the connector 15, which, thus released, at once rises under the pressure of the longer leaf of the spring 16, if the breechslide is in the forward firing position, and thus places the connector in the operative position in which it can turn the sear to release the hammer when the trigger is pulled. See Fig. 1.

On withdrawal of the magazine from the pistol the disconnecter 17 is at once released and moved rearward by the pressure of the reaction-spring, and pressing upon the connector 15 lowers the same into its inoperative position in which it cannot turn the sear even if the trigger is pulled.

The position of the disconnecter 17 near the top of the magazine insures that even a slight withdrawal of the magazine is sufficient to allow the disconnecter to operate upon the connector, thereby insuring that the magazine must be fully pushed home into its proper position to allow the pistol to be fired by a pull upon the trigger.

Another advantage of this construction consists in the fact that when the disconnecter is in its operative position, see Fig. 2, and has lowered the connector to prevent its operation of the sear, force applied upon the trigger cannot throw the disconnecter from its operative position as the flat angle at which its rear end rests upon the connector prevents the latter from moving the disconnecter forward, the force applied by the trigger pressing the disconnecter upward rather than forward. Therefore, while the disconnecter depends upon a spring for moving it into its operative rear position, it positively remains in said position independently of the spring.

It will be understood that the construc-

tion may be at will modified by providing a separate spring for forcing the disconnecter rearward instead of depending upon the reaction-spring.

What I claim and desire to secure by Letters Patent, is:

1. In an automatic firearm having a detachable cartridge magazine seated in the grip, a trigger in front and a firing mechanism comprising a pivoted sear and a sear spring in rear of and above said grip, and having a connector extending on both sides of the magazine rearward and upward from said trigger to said sear and a spring for yieldingly holding said connector in its operative position, a disconnecter fitted to slide horizontally in said grip near the top of the magazine seat, and a spring for moving said disconnecter rearward and thereby moving said connector out of operative position, when the magazine is moved away from its fully inserted position.

2. In an automatic firearm having a detachable cartridge magazine seated in the grip, a trigger in front and a firing mechanism comprising a pivoted sear and a sear spring in rear of and above said grip, and having a connector extending on both sides of the magazine rearward and upward from said trigger to said sear and a spring for yieldingly holding said connector in its operative position, a disconnecter fitted to slide horizontally in said grip near the top of the magazine seat, and to be engaged by said magazine and moved forward thereby when the magazine is fully inserted in the grip, and a spring for moving said disconnecter rearward and thereby moving said connector out of operative position when the magazine is moved away from its fully inserted position.

3. In an automatic firearm having a detachable cartridge magazine seated in the grip, a trigger in front and a firing mechanism comprising a pivoted sear and a sear spring in rear of and above said grip, and having a connector extending on both sides of the magazine rearward and upward from said trigger to said sear, and a spring for yieldingly raising said connector to communicate the movement of said trigger to said sear, a bifurcated disconnecter fitted to slide horizontally in said grip near the top of the magazine seat and a spring for moving said disconnecter rearward and thereby interrupting the connection between said trigger and said sear.

4. In an automatic pistol having a detachable magazine seated in the grip, a trigger in front and a sear and sear spring in rear and above said grip, and having a looped connector extending rearward and upward from said trigger to said sear, and a spring for yieldingly holding said connector in operative position, said magazine be-

ing open on top, and in front rounded horizontally and vertically, a bifurcated disconnecter sliding horizontally in said grip near the top of said magazine seat, and a spring  
5 yieldingly holding said disconnecter rearward and moving said connector out of operative position when said magazine is removed from its seat, but whereby the magazine when adjusted in its seat forces said

disconnecter forward from its operative position.

This specification signed and witnessed this first day of November, 1916.

GEORGE H. TANSLEY.

In the presence of—

C. J. EHBETS,  
A. L. UIRCH.