

No. 793,692.

PATENTED JULY 4, 1905.

G. H. TANSLEY.
SAFETY DEVICE FOR FIREARMS.
APPLICATION FILED FEB. 9, 1905.

Fig.1.

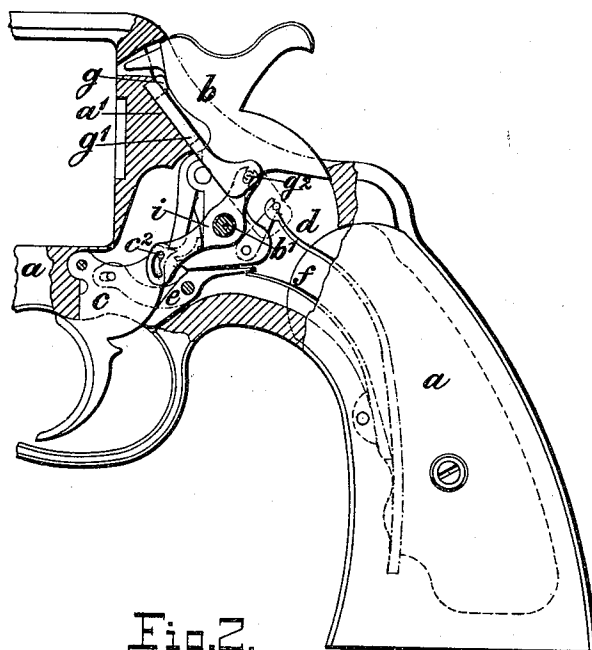
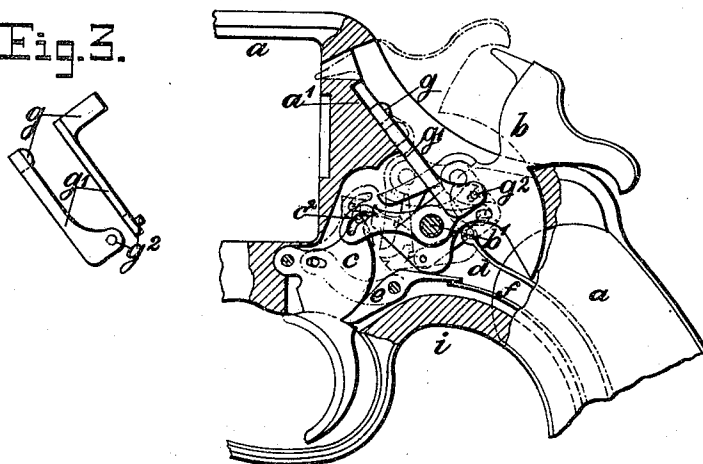


Fig.2.

Fig.3.



Witnesses.

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UNITED STATES PATENT OFFICE.

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SAFETY DEVICE FOR FIREARMS.

SPECIFICATION forming part of Letters Patent No. 793,692, dated July 4, 1905.

Application filed February 9, 1905. Serial No. 244,921.

To all whom it may concern:

Be it known that I, GEORGE H. TANSLEY, a citizen of the United States, residing in the city and county of Hartford, 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.

My invention relates to improvements in the locks or firing mechanisms of firearms, and is particularly applicable to the locks of revolvers and pistols.

The object of my invention is to provide the lock of the firearm with a simple but reliable device by which unless the hammer is cocked and the trigger is regularly and fully operated the discharge of the arm shall be made impossible in order that unintentional or accidental firing shall be positively prevented even in case violent blows were struck upon the hammer in the direction tending to drive its firing-point into contact with the primer of the cartridge in front of it, such cases being liable to occur when a firearm is carelessly handle or when it is dropped and in falling strikes upon the hammer. Safety devices of several distinct kinds having been provided heretofore for this purpose, it is necessary to briefly recite their essential features in order that the improvement of my construction may be clearly understood and differentiated from the prior devices.

Safety-catches in the form of additional sears have been designed to lock the hammer until it is released by the last of the trigger's movement; but the hold upon the hammer of these devices is a delicate one not strong enough to withstand violence. In another well-known class of safety devices for firearms a block or chock is arranged to be automatically carried into and out of the path of the hammer and between the face of the hammer and that part of the frame of the arm by which the movement of the hammer toward the cartridge is limited, so that in its operative position the safety-block intercepts the blow of the hammer before the fir-

ing-point can reach the primer of the cartridge. To utilize the movements of the trigger for the actuation at the proper times of the safety-block, two different kinds of arrangement have been used heretofore. In the one the safety-block is pivoted in the frame of the arm and a spring is provided for turning the block into the operative position and for holding it there while the trigger is returning to or standing in the normal forward position and a projection on the trigger is provided to engage the block and to turn it out of the path of the hammer during the last of the rearward movement of the trigger while the hammer is being cocked and released to fire the arm. In the second arrangement the safety-block is attached to the trigger, a stem depending from the block and having on its lower end a laterally-projecting pin, which is seated in the trigger and by which the block is pivotally connected with the trigger, so as to move freely in the frame when carried upward and downward by the rearward and forward movements of the trigger. While a safety-block or chock when properly inserted between the frame and the front of the hammer positively prevents the hammer from exploding the cartridge, and such a block is well adapted to withstand violent blows without yielding. The several ways of applying such blocks heretofore devised, as recited, are open to serious objections. When the block is pivoted in the frame and is not positively turned to its operative position, but depends for that motion upon a spring, the safety device is not perfectly reliable, and in that construction, as also in those in which the safety-block is attached to the trigger, the location of the safety-block in the operative position must necessarily be at a distance below the firing-point of the hammer, because the block requires space in which to be moved upward by the trigger to the operative position. The most effective location of the block for intercepting the blow of the hammer and for transmitting the stress to the frame of the arm with the least strain on the parts concerned being as near

as possible to the firing-point of the hammer—i. e., in front of the center of percussion—and as the strain thrown upon the hammer and its pivot is proportional to the distance from the firing-point at which the block intercepts the blow of the hammer both the hammer and the pivot are liable to yield under this strain in the constructions referred to, especially as in most of them the hammer is further weakened by a recess in its face between the firing-point and the point where the block intercepts the blow, such recess being required to prevent contact with the block in its raised inoperative position.

I attain the object of my invention and avoid the drawbacks inherent in the prior devices referred to by the improved form of a safety device and by mechanism of simple and reliable construction hereinafter fully described and claimed, and illustrated in the accompanying drawings.

The invention is shown herein embodied in the lock of a revolver; but it will be understood that the invention is applicable to other firearms. Therefore it is not intended to restrict the present invention to a revolver nor to any particular kind of firearm.

In the accompanying drawings, Figure 1 is a partial side elevation of a "Colt army and navy revolver." A portion of the side wall of the frame is represented as broken away, exposing to view the members of the firing mechanism in their normal positions, the hammer being in the rebounded position and the trigger in the forward position. Fig. 2 is a similar view as Fig. 1, but in it the hammer and the trigger are represented as standing in the full-cock position, and in addition the upper portion of the trigger is indicated by dotted lines in the position it assumes when the trigger has been fully moved back, so as to release the hammer, and the hammer is indicated in dotted lines in its full-down firing position. Fig. 3 shows the safety-block detached, in side view and in rear view.

Similar letters refer to similar parts throughout the several views.

In the frame *a* of the revolver the hammer *b*, the trigger *c*, and the rebound-lever *e* are mounted upon pivot-pins and actuated by the mainspring *d* and the combined trigger and rebound spring *f* in the usual manner and for the usual well-known manner of operation. At *a'*, the part of the frame upon which the front of the hammer bears in the full-down firing position, a recess is cut inclining downward and rearward to receive the safety-block or chock *g* and to guide the same as it is moved up and down in the recess. The safety-block consists of a solid bar *g*, in length equal to the width of the hammer, having a depending arm *g'*. When in place, the bar *g* extends transversely across the bottom of the slot in the frame in which the ham-

mer is seated, and from the left end of the bar *g*, at right angles thereto, the arm *g'* extends downward. The lower extremity of the arm *g'* is widened and carries a projecting pin *g²*. (See Fig. 3.) The left side wall of the frame is recessed to receive the arm *g'* and to guide it in moving upward and downward with the bar *g*. In Figs. 1 and 2, this side wall being represented as broken away to expose to view the firing mechanism, the recessed seat for the arm *g'* is indicated by dotted lines. Mounted upon the same pivot-pin *b'* upon which the hammer is mounted the two-armed lever *i* is arranged at the side of the hammer and between the same and the arm *g'* of the safety-block. One arm of the lever *i* extends rearward from the pivot and is connected with the safety-block *g*, the pin *g²* on the arm *g'* being grasped by the slotted end of the rear lever-arm. The other arm of the lever *i* extends forward from the pivot and is connected with the trigger by a pin *c²*, which is fixed in the upper rear part of the trigger and projects into a slot in the front lever-arm.

When the trigger *c* stands in the normal forward position, as shown in Fig. 1, the hammer has been retracted by the rebound-lever *e* and is kept in the rebound position, in which the firing-point of the hammer is withdrawn to a sufficient distance rearward into the frame to make contact with a cartridge impossible. By the movement of the trigger to this normal position the pin *c²*, projecting from the trigger, has been moved downward and has drawn down the front arm of the lever *i*, at the same time raising the rear arm of the said lever. By this movement of the lever *i* the pin *g²* and the arm *g'* are forced upward, carrying up the safety-block *g* until the block stands in front of the face of the hammer just below the firing-point and between the rebounded hammer and the frame, thereby absolutely preventing the hammer from being driven down into the firing position. If the trigger is moved rearward to operate the firing mechanism and the hammer is brought to the full-cocked position, as shown in Fig. 2, the pin *c²* on the trigger raises the front arm and lowers the rear arm of the lever *i*, and thereby the safety-block *g* is drawn downward, as shown in Fig. 2. By the continued rearward movement of the trigger for releasing the cocked hammer and for firing the arm the lever *i* is turned until it has fully drawn down the arm *g'* and the safety-block *g*, so that when the released hammer falls under the tension of the mainspring the safety-block *g* has been removed out of its path, the block *g* in its lowest position standing in front of the part of the hammer just above the joint by which the strut is pivoted to the hammer, at which part the front of the hammer is recessed, as usual. The positions of the top of the trig-

ger, the hammer, the lever, and of the safety-block at the time of firing are indicated in Fig. 2 in dotted lines. On the release of the trigger and its return to the forward position the hammer is rebounded, and the safety-block *g* is again moved upward between the frame and the hammer until it stands just below the firing-point of the hammer, thereby positively securing the arm against accidental firing.

While I have described and shown the firing-point as an integral part of the hammer and the frame constructed with an opening through which the firing-point is impelled into contact with the cartridge, my improvement is applicable as well to firearms in which the face of the hammer is without any projection, but in which a detached firing-pin is seated in the frame and receives the blow from the hammer to transmit it to the cartridge. This construction being a well-known one and the application to it of the present device requiring no modification thereof, it is not necessary to illustrate it, the operative position of the safety-block being in that case also between the frame and the face of the hammer in proximity to the firing-pin seat.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a firearm the safety-block movably secured in and guided by the frame, and between the frame and the front of the hammer, and a connector intermediate the said safety-block and the trigger, actuated by the movements of the trigger, and means for carrying the said safety-block upward into the path of the hammer by the forward movement of the trigger, and downward out of the path of the hammer by the rearward movement of the trigger.

2. In a revolver, the combination of the frame, the safety-block seated in and guided by the frame in front of the hammer, the trigger, and the lever pivoted in the frame and connecting the said safety-block with the trigger, whereby on the rearward movement of the trigger the said lever draws down the safety-block to the inoperative position, and by the forward movement of the trigger the lever raises the safety-block to the operative position.

3. In a revolver, the combination with the frame, the hammer and the trigger pivoted

in the frame, of the safety-block movably seated in and guided by the frame, consisting of the transverse bar arranged between said frame and said hammer and having an arm extending by the side of said hammer, and a lever pivoted in the frame intermediate said safety-block and said trigger and connected with said trigger and with the said arm of the safety-block, whereby the rearward movement of the trigger depresses the safety-block below the face of said hammer, and the forward movement of said trigger raises the safety-block in front of the face of said hammer.

4. In a revolver, the combination with the frame having the bearing-surface for the hammer and the opening for the firing-point, the hammer and the trigger pivoted in said frame, of the safety-block movably secured in and guided by the said frame, consisting of a transverse bar arranged between said frame and said hammer below the said opening and having an arm extending by the side of said hammer, and a lever pivoted in the frame and connected with said trigger and with said safety-block, whereby the rear movement of said trigger depresses the safety-block out of the path of said hammer and the forward movement of said trigger raises the safety-block in front of said hammer to the proximity of the said opening.

5. In a revolver, the combination with the frame having the bearing-surface for the hammer perforated for the firing-point, the hammer and the trigger pivoted in said frame, of the safety-block fitted to slide upward and downward in a recess in said bearing-surface and having an arm extending downward by the side of the hammer, and fitted in and guided by a recess in the said frame, and the lever mounted on the hammer pivot-pin and connected with said trigger and with said arm of the safety-block, whereby the rearward movement of said trigger slides down the safety-block out of the path of said hammer, and the forward movement of said trigger slides the safety-block into the path of said hammer and into proximity of the firing-point.

This specification signed and witnessed this 7th day of February, A. D. 1905.

GEORGE H. TANSLEY.

In presence of—

C. J. EHBETS,
A. L. ULRICH.