

Jan. 26, 1932.

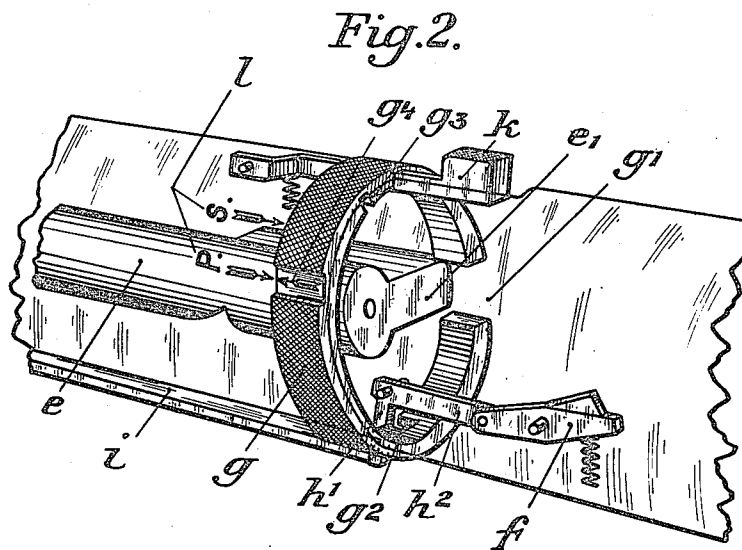
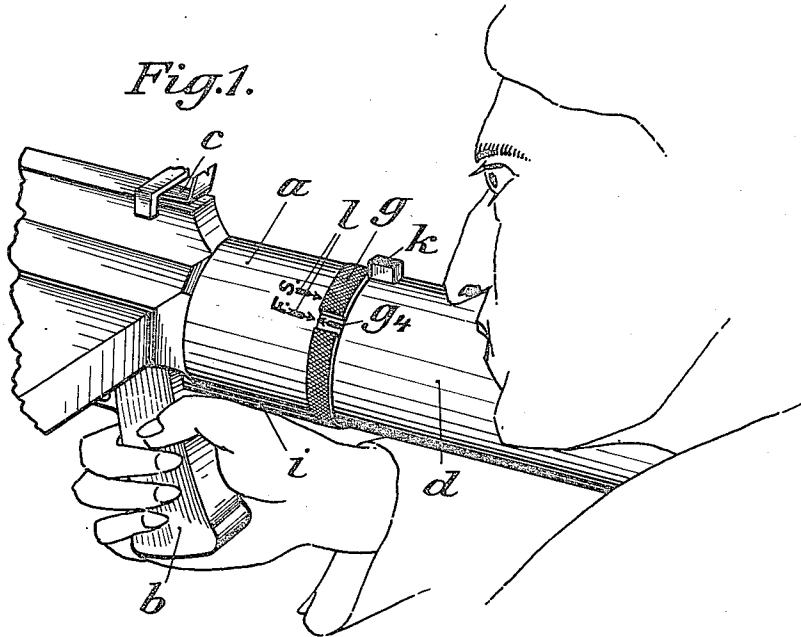
L. STANGE

1,842,847

SAFETY DEVICE FOR FIREARMS

Filed Oct. 30, 1930

2 Sheets-Sheet 1



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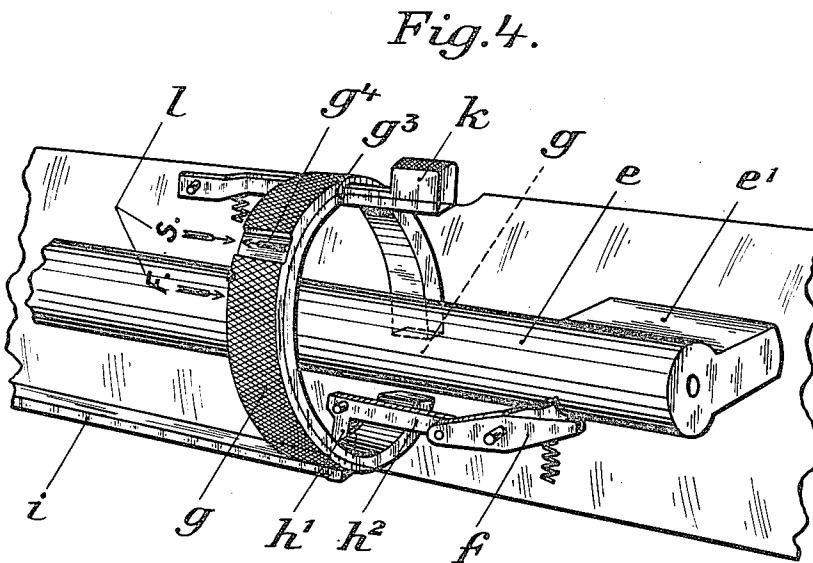
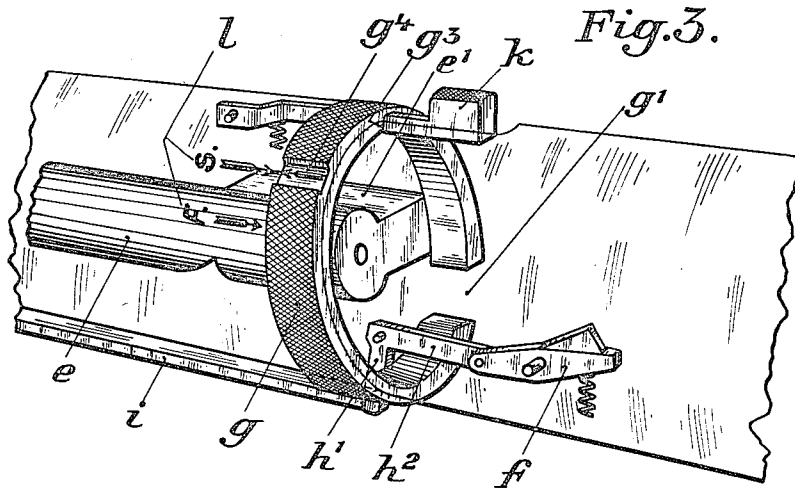
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UNITED STATES PATENT OFFICE

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SAFETY DEVICE FOR FIREARMS

Application filed October 30, 1930, Serial No. 492,339, and in Germany November 18, 1929.

My invention relates to safety devices for fire arms, more particularly rifles and other small arms and machine guns.

With the known safety devices for fire arms of this class the manipulative member serving to throw in and out the members that lock the trigger or striking mechanism or the breech mechanism is mostly formed by a lever pivotally mounted laterally on the arm, the so-called thumb-piece or safety wing, but also slides sunken in the wall of the arm have been provided for this purpose. These manipulative members must not have too small dimensions in order to be easily and securely seized, and have frequently a configuration difficult to manufacture, and it is often difficult to mount them conveniently and securely on the arm. Finally, these members can be mistaken for other manipulative members of a similar shape provided on the arm for any other purpose.

My invention has for its object a manipulative member for the safety device of such arms which has a shape and a location on the arm that affords an easy manufacture, secure mounting on the arm, good adaption to the given outer shape thereof, and a convenient manipulation. Finally, any danger of mistaking it for any other member is impossible. With these objects in view, my new safety manipulative member is formed by a frame or ring surrounding the butt or breech end of the barrel, which frame or ring follows the outer shape of the part it is mounted on and can be shifted or turned. The frame or ring is knurled on its outer surface, in order to secure good manipulation by the firer's hand and may control in a known manner special locking members that lock the trigger or striking mechanism or breech mechanism, or may itself have integral with it these locking members in the form of projections, or may form these members by parts of its annular main body. I obtain in this way a simple safety device which is very well suited to realize simultaneously several different locking effects, which device for instance, when in safe position, locks at the same time the cocked or uncocked breech mechanism and the trigger mechanism.

In order that my invention may be more readily understood, an embodiment of the same is illustrated by way of example in the accompanying drawings as applied to an automatic fire arm having a longitudinally movable breech piece. In these drawings:

Figure 1 shows the arm in the hands of the firer ready for fire, while

Figures 2 to 4 show in perspective view and on enlarged scale the essential parts of the safety device and firing and breech mechanism of the arm, and more particularly Figure 2 shows these parts in unlocked condition, Figure 3 in locked condition with the breech mechanism closed, and Figure 4 shows them in locked position and with open and cocked breech mechanism.

The fire arm illustrated, Figure 1, is a light machine gun having a butt adapted to rest on the shoulder of the firer, and a fork-shaped support for the forward end of the barrel. The case or breech end *a* is of cylindrical outer shape and has mounted on it at bottom a handle *b* that carries the trigger and at top the notch *c* of the sight. On its rear end the case *a* subsides without an offset into the butt *d* which can be detached to disassemble the gun.

The breech mechanism possesses a longitudinally movable breech piece *e*, Figure 4, which is held in a rear cocked position by a pawl *f* which can be released by the trigger, whereupon the breech piece rushes forward, pushes a cartridge into the barrel and strikes it immediately thereafter.

At the joint existing between the cylindrical case *a* and the butt *d* a ring *g* is mounted which forms the manipulative member of the safety device. This ring *g* is knurled on its outer surface and can be turned about the longitudinal axis of the gun barrel. It lies in the straight path of a lateral lug *e*¹ of the breech piece and in the path of pivotal motion of a two-armed lever *h*¹ *h*² which by means of a rod *i* abutting on its arm *h*¹ establishes the connection of the trigger (not shown) with the pawl *f* that locks the breech piece *e* in the rear, cocked position.

When the arm is in unlocked condition, Figure 2, a slot *g*¹ provided in the ring *g* al-

lows the projection e^1 of the breech piece e to freely pass therethrough, so that the breech piece can make the longitudinal motion required to cock the striker and to load the gun.

5 In this position of ring g further a recess g^2 , Figure 2, of the latter is opposite the arm h^1 of the lever $h^1 h^2$ which controls pawl f , so that arm h^1 can swing back when pressed rearwardly by the trigger and rod i , whereby
10 pawl f lowers and releases the breech piece e from its rearward cocked position.

By turning ring g in clockwise direction the gun is locked, which is possible both in uncocked state, Figure 3, and in cocked state
15 of the gun, Figure 4. When the gun is in uncocked state, the full portion of ring g engages behind the lug e^1 of breech piece e which is in closing position and prevents its rearward, cocking motion. In the cocked
20 condition, Figure 4, that means when the breech piece e is in the rearward position and locked therein by pawl f , ring g lies with its full portion in front of lug e^1 so that the breech piece e cannot advance. Besides, in
25 both cases the full lower portion of ring g has come to lie behind the lever h^1 so that the latter cannot swing and retire pawl f from the respective recess of breech piece e .

In the two ready positions that is in firing
30 position and safety position, ring g is secured against any turning motion by a spring-influenced locking bolt k which engages respective notches g^3 provided on the inner surface of ring g . An arrow mark g^4 on the
35 outer surface of ring g indicates the condition of the gun by registering with one of two counter marks, 1, 1 provided on the case a of the barrel (F: Fire and S: Safe), that is whether the gun is being locked or unlocked.
40 As to be seen from Figure 1, these marks 1, 1 are situated between the notch c of the sight and the eye of the firer who is taking aim, so that he can conveniently satisfy himself at a glance even still during sighting, whether
45 or not the gun is ready for fire.

Furthermore, my new safety device allows an easy throwing-over of the device while the firer is taking aim. For instance the firer can seize with the fingers of his left hand, which
50 during firing already rest on the butt d between notch c and his eye, the ring g and its locking bolt k and shift them into the desired position, without withdrawing his right hand from the trigger or his head from the butt d .
55 In order to facilitate the manipulation of the device in the dark, the marks 1, 1 and g^4 may be designed either as luminous marks or be formed by notches or projecting ribs so that they can be perceived and distinguished by feeling.
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What I claim as my invention is:—

1. A safety device for fire arms having a longitudinally moving breech piece, comprising a manipulative member mounted for independent motion on, and adapted to the

outer shape of, a stationary part of the arm and surrounding the path of said breech piece, said manipulative member in one turn position projecting into the path of said
70 breech piece and having a recess adapted to lie in another turn position in this path so as to give free the way for said breech piece.

2. A safety device for fire arms having a longitudinally moving breech piece, comprising a manipulative member mounted for independent motion on, and adapted to the
75 outer shape of, a stationary part of the arm and surrounding the path of said breech piece, said manipulative member in one turn position projecting into the path of said
80 breech piece and having a recess adapted to lie in another turn position in this path so as to give free the way for said breech piece, and means formed on said manipulative member for locking in said first-named position the trigger mechanism of the arm and for releasing it in the last-named position.

3. A safety device for firearms, comprising a member adapted to be rotatably mounted on the outside of the butt, and means actuated
90 by the turning movement of said member for locking the breech piece against cocking movement.

4. A safety device for firearms, comprising a member adapted to be rotatably mounted
95 on the outside of the butt, and means actuated by the turning movement of said member for locking the breech piece in cocking position.

5. A safety device as set forth in claim 3, including means actuated by the turning
100 movement of said member for locking the trigger mechanism.

6. A safety device as set forth in claim 4, including means actuated by the turning
105 movement of said member for locking the trigger mechanism.

7. A safety device as set forth in claim 5, including spring-pressed means for releasing the locking means.

In testimony whereof I have affixed my
110 signature.

LOUIS STANGE.

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