LOCK DEVICE OF A SHOT GUN

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FOREIGN PATENTS OR APPLICATIONS
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ABSTRACT

A lock device for a shot gun to block a cartridge from behind on firing including a slide body slidably disposed along a barrel and a lock member rockably and slidably associated with the slide body in a projection-recess engagement relationship and an engaging portion to engage a recess formed in the barrel when the lock member is rotated by the movement of the slide body.

4 Claims, 5 Drawing Figures
LOCK DEVICE OF A SHOT GUN

This invention relates to a shot gun, and more particularly to a lock device of the shot gun.

A conventional shot gun is equipped with a lock device for blocking a cartridge from behind on firing so as to facilitate the discharging of the balls in the cartridge forwardly. The lock device comprises a slide body and a lock member rockably by sliding the slide body along a barrel of the gun. Immediately after firing, the slide body is slidably moved backwardly to cause a lock member to be engaged with a recess provided in the barrel of the gun to permit the cartridge to be blocked from behind.

The conventional lock device is so complex in shape and design and troublesome to manufacture. When firing, somewhat greater pressure and shock forces are applied to the lock device and the complicated offset portions of the lock device often undergo injury or wear with the resultant disadvantages.

An object of this invention is to provide a simple lock device capable of assuringly blocking a cartridge from behind to facilitate firing of the balls in the cartridge forwardly, as well as efficient in the resistance to wear and injury. According to this invention there is provided a lock device for a shot gun, adapted to block a cartridge from behind when firing and comprising a slide body slidably disposed along a barrel and a lock member operatively associated with the slide body and adapted to be swung in unison with the sliding movement of the slide body to cause it to be engaged with an engaging recess provided in the barrel to permit the cartridge to be blocked from behind, the improvement wherein said slide body has a pair of recesses provided in its top surface spaced apart from its front end surface; and said lock member has paired first and second projections extending from its undersurface and an engaging projection provided on the top surface of the front end portion of the lock member and near the second projection, whereby the first projection is slidably shiftable from the forward end portion to the backward end portion of the recess with the first projection as a fulcrum so that the lock member rides on a top surface section of the slide body and near the front end of the slide body to permit the engaging projection to be engaged with the engaging recess provided in the barrel.

In the drawing:

FIGS. 1 and 2 respectively show the "locked" and "unlocked" states of a lock device of a shot gun according to the embodiment of this invention;

FIG. 3 is a plan view of a slide body;

FIG. 4 is a side view of the slide body; and

FIG. 5 is a perspective view showing the bolt and a lock member.

The reference numeral 1 shows a slide body integrally mounted on the upper surface of the rear end portion of a slidable action bar 2. A pair of recesses 3 are provided in the top surface of the slide body and near the rear end of the slide body in a manner to be spaced apart in a crosswise direction. As will be evident from FIGS. 3 and 4 the recess is exposed on each side surface of the slide body and has a predetermined depth. The bottom plane of the recess is substantially flat with its forward and backward end surfaces defined to have a predetermined curvature.

At the center portion of the rear end of the slide body 1 a stopper 4 is integrally provided and extends backwardly. A shoulder 1a is provided on each side surface of the rear end portion of the slide body 1. Between the shoulder 1a and the stopper 4 the front end portion of each arm 5a of a link 5 is located and pivoted by means of a pin 6 so that the link 5 can be swung relative to the slide body and within a vertical plane.

The slide body 1 is slidably inserted within a bolt 7 consisting of a cylindrical body open at its upper and bottom surfaces and having front and rear end walls 7a and 7b. Within the bolt 7 a lock member 8 is inserted in a predetermined relation.

The lock member 8 has substantially the same entire length as that defined by the front and rear end walls 7a and 7b of the bolt 7. As shown in detail in FIG. 5 a pair of projections 8a are provided at substantially the center portion of the undersurface of the lock member and a pair of projection 8b are provided at the front end portion of the undersurface of the lock member. The rear projection 8a is slidably shiftable, in the forward and backward directions, along the recess 3 of the slide body 1. The end of the projection 8a is normally abutted on the bottom surface of the recess 3 and the lock member 8 is rockably moved in a vertical plane with the abutted portion of the projection as a fulcrum.

The projection 8a has a predetermined curved surface which is faced contacted with the backward end surface of the recess when the lock member is locked as shown in FIG. 1 and with the forward end surface of the recess when the lock member is unlocked as shown in FIG. 2.

As a result, these two stable states are alternately maintained. The projection 8b has a front end surface extending in the same plane as the front end surface of the lock member 8 and a rear end surface inclined in a forward direction. A distance between the projections 8a and 8b substantially corresponds to a distance defined between the front end surface of the slide body 1 and the forward end surface of the recess 3. When the lock member is in the "unlock" position, a section defined by the front end surface of the slide body 1 and the forward end surface of the recess 3 is fitted between the projections 8a and 8b of the lock member. The top surface of the section of the slide body is face contacted with a bottom section defined between the projections 8a and 8b of the lock member. On the other hand, the slide body 1 is moved relative to the lock member 8 so as to effect a locking engagement, the projection 8a is abutted against the backward end surface of the recess 3 and the projection 8b of the lock member 8 rides on the top section of the slide body 1 in a manner that the lock member is swung in a counterclockwise direction with the projection 8a as a fulcrum.

On the top surface of the front end portion of the bolt 8 an engaging projection 8c is provided. An engaging recess 9a is provided in a preset location of a gun barrel. When the lock member 8 is swung in the counterclockwise direction the projection 8c is brought into contact with the associated recess 9a of the barrel so that a cartridge 10 filled with a great number of balls is blocked from behind through the front end wall 7b of the bolt.

In substantially the center portions of the front and rear end walls 7a and 7b of the bolt, respective through bores for a needle 11 are provided. The needle 11 is extended through these bores. The intermediate portion of the needle so extended provides no hindrance to the relative movement of the slide body 1 and the lock member 8. A hammer 12 projects upwardly between
the arms 5a of the link in a manner that its upper end section is located near the rear end of the needle 11. When the lock member is in the "locked" position, a trigger is pulled to cause the hammer 12 to be swung in the clockwise direction to permit the rear end of the needle to be struck. This causes the needle to be moved forwardly into contact with the cartridge to permit the cartridge to be fired. Even if a force tending to swing the hammer 12 is accidentally received from outside when the lock member is in the "unlocked" position, the swinging movement of the hammer is blocked by the stopper and, therefore, the needle is prevented from being struck.

With the block device so arranged, the rear end surface of the projection 8b is tapered so that the lock member 8 is smoothly swung in the recess of the slide body and easily rides on the top surface section of the slide body. Instead, the front end of the slide body may be tapered so that the same effect can be obtained. However, such tapered section is not necessarily required in the practice of this invention.

According to this invention, the paired first and second projections 8e and 8f of the lock member are so configured that the first member is slidably swung in the recess of the slide body to permit the second projection 8f to ride on the top section of the slide body. Thus, a simple construction with a minimum of projections and recesses results. This assures a minimum of wear and injury.

What is claimed is:

1. In a lock device for a shotgun having a breech bolt and adapted to block a cartridge from behind when firing, said lock device comprising a slide body slidably disposed along a barrel and a lock member operatively associated with the slide body and adapted to be swung in unison with the sliding movement of the slide body to cause said lock member to be engaged with an engaging recess provided in the barrel to permit the cartridge to be blocked from behind, the improvement wherein said slide body is provided with a pair of recesses disposed in its top surface and spaced apart from its front end surface; and said lock member is provided with paired first and second projections extending from its undersurface and an engaging projection provided on the top surface of the front end portion of the lock member and near the paired second projections, whereby the first paired projections are slidably shiftable from the forward end portion to the backward end portion of the recesses, said first paired projections acting as a fulcrum, cam and sole pivot point which is not fixed to the breech bolt, wherein the lock member rides on a top surface section of the slide body and near the front end of the slide body to permit the engaging projection to become engaged with the engaging recess provided in the barrel.

2. A lock device according to claim 1 in which said paired second projections of the lock member have respective tapered surfaces on respective rear sides.

3. A lock device according to claim 1, in which each of said pair of recesses of the slide body has a forward end surface and a backward end surface both defining a curvature and each of the first projections defines such a curvature as to be fitted relative to the curved forward and backward end surface of said pair of recesses.

4. A lock device according to claim 1 in which the slide body has a stopper projecting from its rear end surface and a link carried integral with the slide body.

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