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DISCHARGE MECHANISM FOR AUTOMATIC FIREARMS

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Fig. 5 Fig. 3

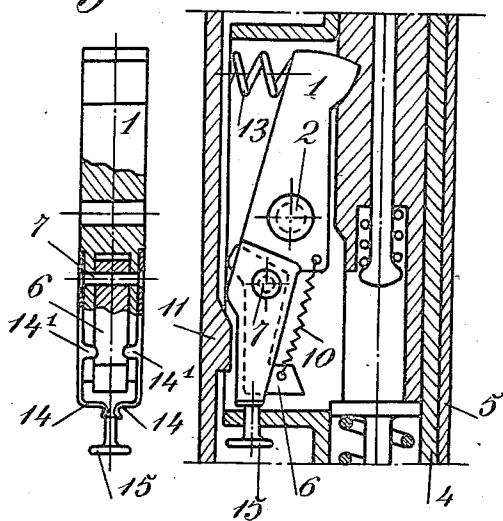


Fig. 2 Fig. 1

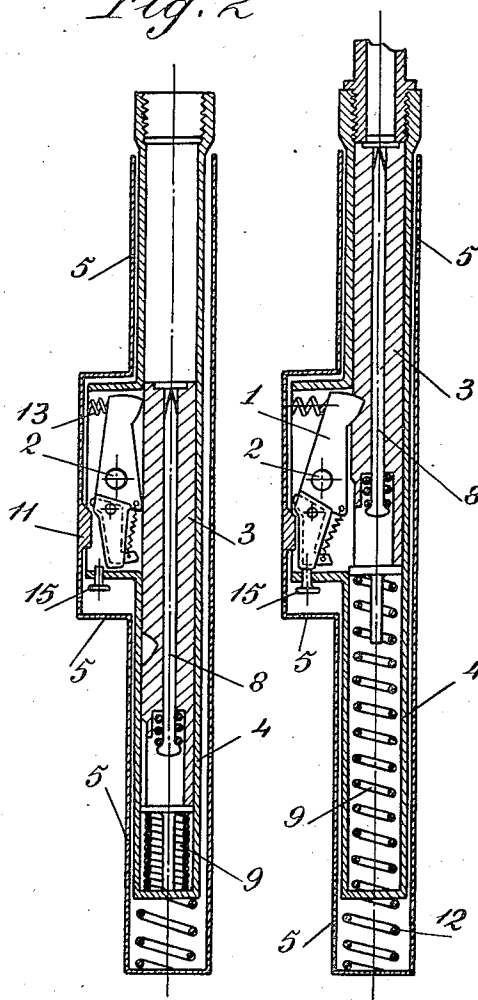
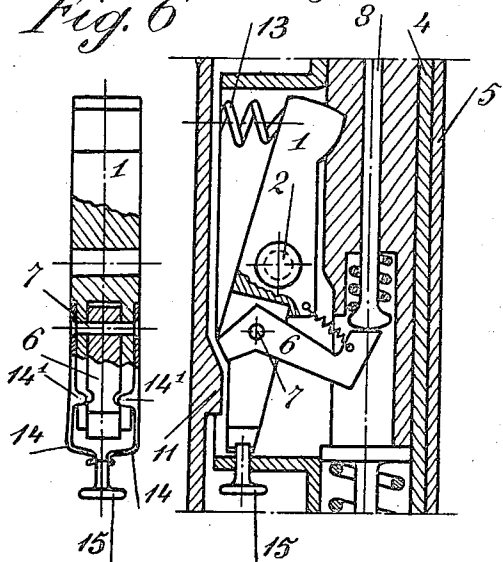


Fig. 4 Fig. 6



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DISCHARGE MECHANISM FOR
AUTOMATIC FIREARMS

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6 Claims. (Cl. 42-69)

Automatic fire arms are known, comprising a double-armed locking lever the fore-arm of which is adapted to lock the bolt whilst the rear-arm retains the firing pin until the bolt is completely locked.

The present invention relates to a simplification in the discharge mechanism of arms of this sort, consisting in that the rear-arm of the locking lever performs another function, namely, it is used as a hammer for actuating the firing pin.

A constructional embodiment of the invention is illustrated in the accompanying drawing, in which

Fig. 1 is a view in longitudinal section showing the discharge mechanism in the normal or rest position,

Fig. 2 is a similar view showing the bolt in its extreme position directly after the discharge,

Fig. 3 is an enlarged view of a part of Fig. 1 i. e., showing the parts in the rest position,

Fig. 4 shows the same parts, but at the moment of discharge,

Fig. 5 is a sectional view through the double-armed locking lever showing the hammer-retaining springs, and

Fig. 6 is a view similar to Fig. 5 with a somewhat different disposition of the parts.

In the drawing all parts which are not directly concerned with the locking and discharge mechanism according to the invention have been omitted. In all of the figures the same parts are indicated by the same reference numerals.

Referring now to the drawing, a double-armed locking lever 1 is rotatably mounted on a pivot 2 in the bolt casing 4, in such a manner that in rest position its fore-arm engages with a recess in the bolt 3 and locks the latter. The bolt casing can be moved to and fro in the box 5. On the rear-arm of the locking lever 1 a hammer 6, which operates the firing pin 8, is rotatably mounted on a pivot 7. The hammer 6 is held in the rest position by the knobs 14' of the springs 14 (Figs. 5 and 6) which engage in recesses in the hammer, and released for discharge of the firearm by means of a trigger knob 15 which spreads the springs 14.

The operation of the device is as follows:

Assuming that the parts are in rest position, the hammer 6 is rigidly hooked to the stationary part of the rear-arm of the locking lever (Figs. 3 and 5) and the fore-arm of the locking lever locks the bolt (Fig. 3). When the knob 15 is pressed the springs 14 are spread. The knobs 14' therefore leave the recesses in the hammer, so that the tension spring 10 can pull the ham-

mer 6 forward, causing the latter to strike against the firing pin 8 (Fig. 4). The fire-arm is, therefore, discharged.

The barrel, bolt casing and the bolt, with the double-armed locking lever, recoil therefore together for a certain distance. During this rearward movement the inclined surface of a projection 11 integral with the cover of the box swings the locking lever 1 around the pivot 2 and at the same time causes the hammer 6 to rotate around the axle 7, so that the latter again snaps securely into engagement with the stationary part of the rear-arm of the locking lever, during compression of the spring 9, whilst the fore-arm of the locking lever releases the bolt.

As soon as the locking lever has released the bolt the spring 12 returns the barrel and the bolt casing; the bolt, however, continues its backward movement until the cartridge case is extracted and ejected from the barrel.

In its forward movement the bolt brings the next cartridge into the barrel, the fore-arm of the locking lever 1 is again rotated, by the spring 13, into engagement with the recess in the bolt. The bolt is therefore locked and the arm again ready for firing.

It is now possible to arrange for the arm to operate quite automatically, by that instead of the trigger knob 15 for spreading the springs 14 a wedge-shaped plate is brought by a trigger lever into the position normally occupied by the springs 14. It is clear that each time the locking lever fore-arm moves upwards, that is when it locks the bolt, the springs 14 are spread by the wedge-shaped plate, the hammer is released and a further cartridge is discharged. This lasts, whilst cartridges are available, so long as the wedge-shaped plate is held, by means of the trigger lever, in the operative position relative to the springs 14.

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 a discharge mechanism for automatic fire-arms, a bolt, a bolt-casing surrounding said bolt, a pivot carried by said bolt casing, a double-armed locking lever rotatably mounted on said pivot, one arm of said locking lever being adapted to engage a recess formed in said bolt, whereby said bolt is locked, another pivot carried by the other arm of said locking lever, a hammer rotatably mounted on the second-mentioned pivot, and resilient means connected with said hammer and said locking lever.

2. A discharge mechanism for automatic fire-arms, comprising a bolt, a bolt-casing surrounding said bolt, a pivot carried by said bolt-casing, a double-armed locking lever rotatably mounted on said pivot, one arm of said locking lever being adapted to engage a recess formed in said bolt, whereby said bolt is locked, a firing pin surrounded by said bolt, another pivot carried by said locking lever, a hammer rotatably mounted on the second-mentioned pivot, means connected with said hammer for swinging the same, whereby said hammer strikes against said firing pin, causing a discharge and a recoil movement of said bolt-casing and bolt, a projection which is immovable during said recoil movement, said projection having an inclined surface which is adapted to come in contact with said locking lever and said hammer during said recoil movement, whereby said locking lever is moved out of engagement with said bolt and said hammer is swung into an inoperative position, and means connected with said hammer for locking the same in said inoperative position.

3. A discharge mechanism for automatic fire-arms, comprising a bolt, a bolt-casing surrounding said bolt, a pivot carried by said bolt-casing, a double-armed locking lever rotatably mounted on said pivot, one arm of said locking lever being adapted to engage a recess formed in said bolt, whereby said bolt is locked, a firing pin surrounded by said bolt, another pivot carried by said locking lever, a hammer rotatably mounted on the second-mentioned pivot, a spring connected with said hammer and said locking lever and adapted to swing said hammer, whereby said hammer strikes against said firing pin, causing a discharge and a recoil movement of said bolt-casing and bolt, a box surrounding said bolt-casing and comprising a projection which is adapted to come in contact with said locking lever and said hammer during said recoil movement, whereby said locking lever is moved out of engagement with said bolt and said hammer is swung into an inoperative position, means connected with said hammer for locking the same in said inoperative position, and means adapted to come in contact with the last-mentioned means to unlock said hammer.

4. A discharge mechanism for automatic fire-arms, comprising a bolt, a bolt-casing surround-

ing said bolt, a pivot carried by said bolt-casing, a double-armed locking lever rotatably mounted on said pivot, one arm of said locking lever being adapted to engage a recess formed in said bolt, whereby said bolt is locked, a firing pin surrounded by said bolt, another pivot carried by said locking lever, a hammer rotatably mounted on the second mentioned pivot, a spring connected with said hammer and said locking lever and adapted to swing said hammer, whereby said hammer strikes against said firing pin, causing a discharge and a recoil movement of said bolt-casing and bolt, a box surrounding said bolt-casing and comprising a projection which is adapted to come in contact with said locking lever and said hammer during said recoil movement, whereby said locking lever is moved out of engagement with said bolt and said hammer is swung into an inoperative position, means connected with said hammer for locking the same in said inoperative position, and a trigger wedge adapted to come in contact with the last-mentioned means to unlock said hammer.

5. In a discharge mechanism for automatic fire-arms, a bolt, a bolt casing surrounding said bolt, a pivot carried by said bolt casing, a double-armed locking lever rotatably mounted on said pivot, an arm of said locking lever being adapted to engage said bolt, whereby said bolt is locked to said casing, another pivot carried by an arm of said locking lever, a hammer rotatably mounted on the second-mentioned pivot, and means co-acting with said hammer whereby said hammer is actuated.

6. In an automatic fire-arm of the recoiling barrel breech mechanism type, in combination with a breech and a breech bolt; a pivot carried by the breech, a double-armed locking lever swingably mounted on said pivot, said double-armed lever having a foremost arm and a rearward arm, said foremost arm serving to block the breech bolt, a pivot carried by said rearward arm, a hammer rotatably mounted on the second-mentioned pivot, a spring operatively connected with said hammer, and means forming an inclined plane which at the time of the recoil engages said lever to cause the two arms of the lever to rock, thereby unlocking the breech bolt and serving to cock the hammer.

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