Feb. 23, 1932. E. STERNBERG 1,846,229

LOCK FOR SMALL ARMS

Filed April 4, 1930 2 Sheets-Sheet 1

Fig. 1

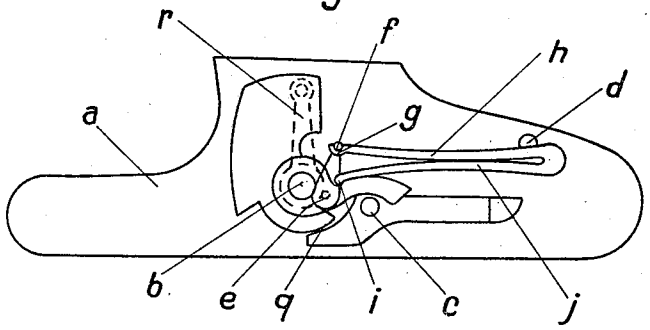

Fig. 2

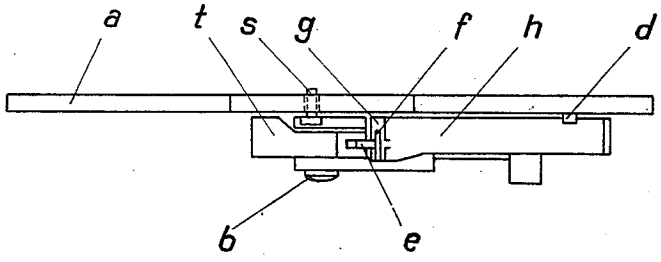

Fig. 3

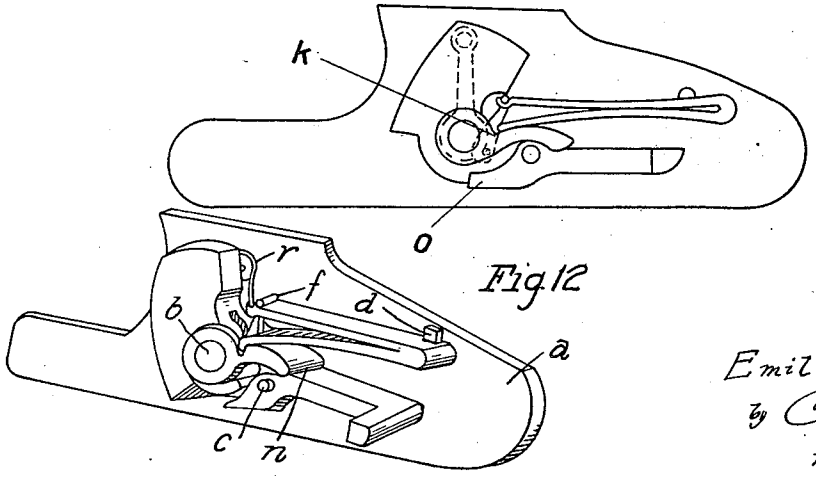

Fig. 12

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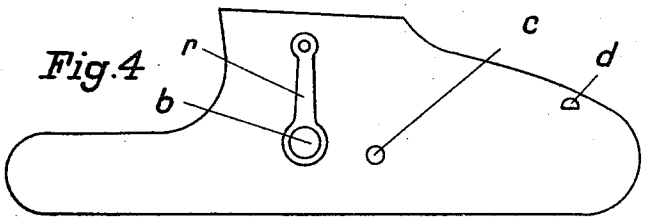
Feb. 23, 1932. E. STERNBERG 1,846,229

LOCK FOR SMALL ARMS

Filed April 4, 1930 2 Sheets-Sheet 2

Fig. 4



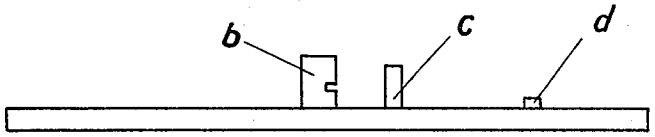


Fig. 5

Fig. 8

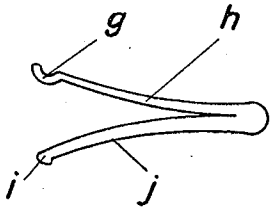


Fig. 6

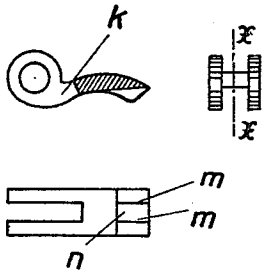


Fig. 7

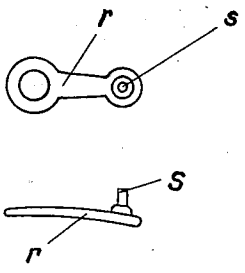


Fig. 9

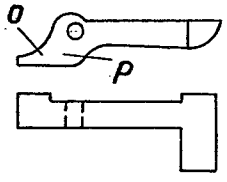


Fig. 10

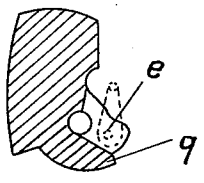
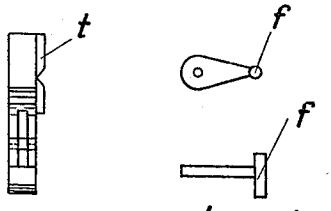


Fig. 11



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UNITED STATES PATENT OFFICE

EMIL STERNBERG, OF BREMEN, GERMANY

LOCK FOR SMALL ARMS

Application filed April 4, 1930, Serial No. 441,473, and in Germany April 9, 1929.

The invention relates to a rebound lock for small arms, and its object is to afford the possibility of a deeper bend in the cocking piece, thus ensuring absolute safety of the lock without prejudice to the gentleness of the pull off. In addition, the intention is to construct the lock so that it may be stripped without the aid of auxiliary tools.

A small arm lock is already known in which a pawl acting as a power transmission device transmits to the sear a part only of the force of the mainspring acting directly upon it. In the known construction, the mainspring is secured at its apex by a pivot in the lock plate, so that it cannot transmit its full striking force to the cocking piece. As a consequence, considerable cocking is required, which slows down the firing considerably. The pawl acting as a power transmission device is mounted between the pivot of the cocking piece and the pivot of the sear, which gives a very long lever arm to the nose end of the sear, and consequently results in a very harsh and stiff pull off. The safety of the lock is rendered questionable by this device.

According to the present invention, despite a deep bend in the cocking piece, a rebound lock with a very gentle pull off is obtained by the use of the known transmission device in the form of a bridge, the bridge being placed loosely, with its forked end embracing the cocking piece, on a retaining pin in the lock plate, the said bridge by co-operating with the mainspring, which is placed with its apex resting freely against a stop pin on the lock plate, holding together all the movable parts of the lock, the said parts being secured to the lock plate by the chain which is passed through a slot in the retaining pin. The one forked end of the mainspring then rests in the known manner against the chain pin of the chain, and the second forked end of the mainspring rests hingedly in a depression in the bridge. In the new lock, therefore, the bridge and cocking piece are mounted on the same pivot, so that, in order to afford the possibility of a gentle pull off, the nose end of the sear may be made very short. Absolute safety of the lock is also secured by making the bend in the cocking piece very deep. The lock may be stripped very simply without the aid of auxiliary tools. After the spring has been released from its elastic mounting, the other parts come loose of themselves.

The sear is preferably guided in a groove in the lever end of the bridge.

According to the invention, the bridge may at the same time hold the end of a leaf spring of an indicating device, while the other end of the bent leaf spring, with the pin secured thereto, is actuated by the cam on the underneath part of the cocking piece, so that when the pin projects laterally from the lock plate, it indicates that the lock is in the cocked position.

A lock constructed according to the invention is shown by way of example in the accompanying drawings, in which,

Figure 1 is a side elevation of the uncocked lock.

Figure 2 is a view of the same from above.

Figure 3 is a side elevation of the cocked lock.

Figure 4 is a side elevation of the lock plate with the parts riveted thereto.

Figure 5 is a view of the same from above.

Figure 6 is the bridge in three views.

Figure 7 is the indicating pin with the leaf spring in two views.

Figure 8 is the mainspring viewed from above, and a side elevation of the upper limb of the mainspring.

Figure 9 is the sear in two views.

Figure 10 is the cocking piece in two views.

Figure 11 is the chain in two views.

Figure 12 is the lock in perspective.

To the lock plate *a* of the small arm lock, which is in the form of a side lock, are secured a retaining pin *b*, a pin *c* and a stop pin *d*. The bridge *k* (Figure 6), and in the fork of the bridge, the cocking piece (Figure 10) are mounted rotatable about the retaining pin *b*. The chain (Figure 11) is pivoted at *e* in the fork of the cocking piece, the pin *f* of the said chain being situated in the forked end *g* of the limb *h* of the mainspring (Figure 8). The free end *i* of the limb *j* of the mainspring lies in a depression *k* of the bridge. The apex of the mainspring rests

against the stop pin *d*. The sear (Figure 9) is made in the form of a double armed lever, mounted rotatable about the pin *c*, and is held by the side walls *m* of the groove *n* in the free end of the bridge. The end *o* of the shorter lever arm *p* may engage in a bent *q* of the cocking piece. One end of a leaf spring *r* is pressed against the lock plate by the bridge. A pin *s* is fixed to the other end of the leaf spring. Leaf spring and pin together act as an indicating device.

The pin *s* is pressed by a cam *t* on the under portion of the cocking piece through a hole in the lock plate, and thus indicates in a manner visible from the outside the cocked position of the lock.

After the shot has been fired, the cam releases the spring with the pin, the latter disappearing within the lock plate.

When the lock is to be cocked as shown in Fig. 3 the cock piece pivoted on pin *b* is turned arcuately so that its outer portion will move from the position shown in Fig. 1 to that of Fig. 3. The turning movement of the cock piece in turn causes the cam *t* located on the under portion of the cock piece to laterally push the indicating pin so that the part *s* laterally projects from the cock piece. At the same time, the chain *f* and the bridge *k* approach toward each other such that the ends *f* and *i* respectively, of the main spring parts *h* and *j* are brought closely together so as to increase the tension within the main spring. The upper portion of the bridge *k* being grooved, the end *i* of spring *j* slides along its upper surface and then held into final position while the under portion of the bridge slides over the sear *p*. The nose piece *o* of the sear *p* is brought up against the side *q* of the rounded portion of the cock piece. In order to reduce the recoil of the lock to a minimum, it is to be noted that the bridge and cocking piece are mounted on the same pivot. When the tension on the spring arms *h* and *j* is released, nose piece *o* of the sear being relatively short, slides very easily away from the bend *q* of the cock piece without any danger of resisting the pull of the trigger to release the tension of the different parts within the locked units. Furthermore, the nose piece *o*, after being released from the part *q* of the cock piece, slides over the broad bend of the cock piece, thereby eliminating any excessive pull otherwise required to set off the lock.

All the movable parts of the lock are pressed against one another by the mainspring, and hold one another together mutually by virtue of their forked construction, especially that of the bridge. The whole is held securely at the lock plate by the chain which moves in a slot in the retaining pin.

I claim:

1. A rebound lock for small arms, in which a power transmission device, for example a bridge, transmits to the sear a part only of the force of the mainspring acting directly on the said device, characterized in that the transmission device constructed in the form of a bridge, is placed loosely with its forked end embracing the cocking piece on a retaining pin on the lock plate and with the cooperation of the mainspring, one forked limb end of which rests hingedly in the known manner on the chain pin of the chain, while the second similarly forked limb end of the said mainspring rests hingedly in a depression of the bridge, holds all the movable parts of the lock together, the said parts being secured to the lock plate by means of the chain passed through a slot in the retaining pin.

2. A small arm lock as claimed in claim 1, characterized in that the sear is guided in a groove located at the lever end of the bridge.

3. A small arm lock as claimed in claim 1, characterized in that the bridge holds securely one end of the leaf spring of an indicating device, while the other end of the bent leaf spring, with the pin secured thereto, is actuated by the cam on the under portion of the cocking piece, such that when the pin projects laterally beyond the lock plate it indicates the cocked position of the lock.

In testimony thereof I have signed my name to this specification.

EMIL STERNBERG.