June 9, 1931. J. L. HATCHER 1,808,847

BELT FEED MECHANISM FOR MACHINE GUNS

Filed Jan. 24, 1931

Fig. 1.

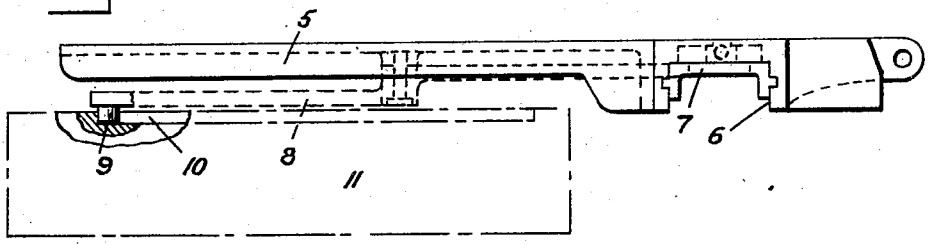


Fig. 2.

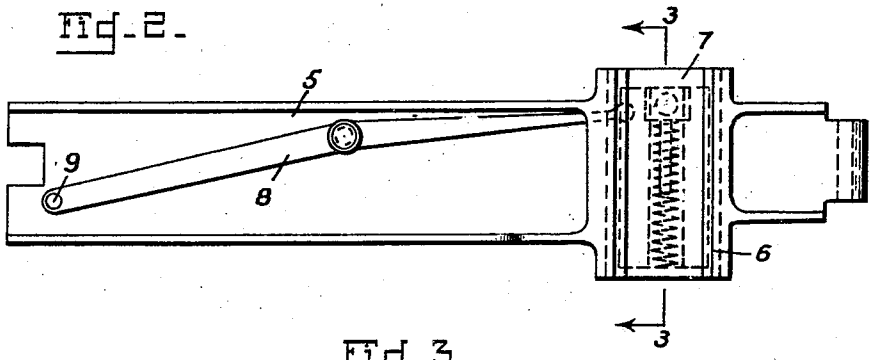


Fig. 3.

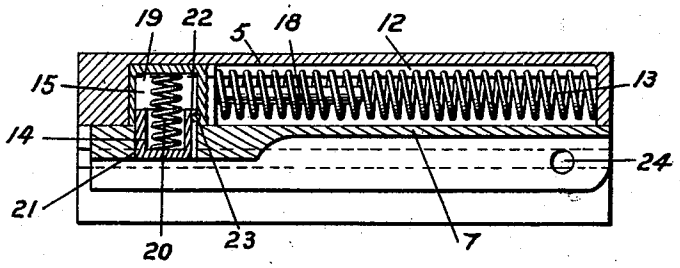


Fig. 4.

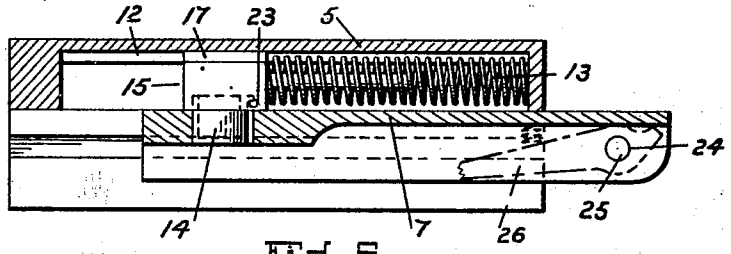


Fig. 5.

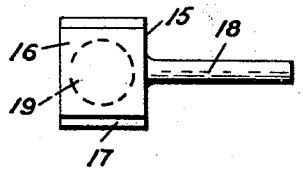
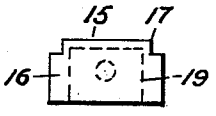


Fig. 6.



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Patented June 9, 1931

1,808,847

UNITED STATES PATENT OFFICE

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BELT FEED MECHANISM FOR MACHINE GUNS

Application filed January 24, 1931. Serial No. 511,071.

(GRANTED UNDER THE ACT OF MARCH 3, 1883, AS AMENDED APRIL 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a belt feed mechanism for machine guns.

In certain types of machine guns, such as the Browning, a transversely movable slide is provided to produce a step-by-step advance of the cartridge belt. Reciprocation of the slide is obtained through the agency of a lever that is cam-actuated by movement of the breech bolt in recoil and counterrecoil. On recoil of the bolt the feed slide is moved into position to engage the next cartridge in the belt and on counterrecoil the belt is advanced. In this arrangement all of the work is performed during the counterrecoil stroke and a considerable burden is placed on the return spring.

The improvement contemplated in the present invention proposes to reverse this procedure by utilizing the energy of recoil to provide a force effective during counterrecoil to automatically advance the cartridge belt.

With the foregoing and other objects in view, the invention resides in the novel arrangement and combination of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

A practical embodiment of the invention is illustrated in the accompanying drawings, wherein:

Fig. 1 is a view in side elevation of the feed mechanism of a machine gun;

Fig. 2 is a bottom plan view of Fig. 1;

Fig. 3 is a sectional view on the line 3—3 of Fig. 1;

Fig. 4 is a view similar to Fig. 3, showing the slide in belt advancing position;

Fig. 5 is an enlarged plan view of the spring guide; and

Fig. 6 is a view in end elevation of Fig. 5.

Referring to the drawings by numerals of reference:

The feed mechanism is conventional in type and consists generally of the cover 5 having a transverse feedway 6 in which is mounted a slide 7 reciprocated by means of a lever 8 having a stud 9 riding in the cam slot 10 in the upper face of the breech bolt 11.

The portion of the cover above the slide is chambered and provided with a channel 12 above the longitudinal axis of the slide to accommodate a resilient element, specifically a coil spring 13. A connection between the slide 7 and the spring is established by means of a plunger 14 carried by a spring guide 15.

The spring guide consists of a head 16 fitting between the slide and the cover and having a rib 17 fitting in the channel 12. The head confines one end of the coil spring and has a finger 18 inserted within the spring. The head 16 is formed with a cylindrical recess 19 capable of housing the plunger 14.

The plunger 14 is hollow for the purpose of receiving the plunger spring 20 which is seated on the floor of the recess 19 in the guide and normally holds the plunger in a recess 21 in the slide. Movement of the plunger under the action of its spring is limited by engagement of a lip 22, formed by notching the plunger, with a pin 23 carried by the guide. As shown clearly in Fig. 3, the plunger may be readily disengaged from the slide, when it is desired to remove the latter, by merely pressing on the plunger until it is completely housed within the guide.

One end of the slide is provided with aligned apertures 24 for receiving a pin 25 carrying a pawl 26.

In operation when the breech bolt 11 moves to the rear due to the energy of recoil, the lever 8 moves the slide to the left (Fig. 4) so that the pawl 26 will be in position to engage behind the next cartridge in the cartridge belt. During this action the spring 13 will be compressed.

As the bolt is restored to battery by its return spring (not shown) the spring 13 moves the slide to advance the cartridge belt and also moves the lever 8. Since the stud 9 on the lever 8 rides in the cam slot 10 of the bolt, the lever acts as a control to regulate the movement of the slide. The spring 13

functions to relieve the bolt return spring of the task of advancing the cartridge belt and insures a smooth and uniform operation.

The spring 13 also functions when the cover 5 is raised, to maintain the slide in a normal position so that when the cover is lowered, the stud 9 on the lever 8 will drop into the cam slot 10 of the breech bolt when the bolt is in battery.

I claim:

1. In a machine gun, a cover having a transverse feedway, a slide mounted in the feedway, a spring housed in the cover in line with the longitudinal axis of the slide, a guide fitting between the slide and cover and confining one end of the spring, a plunger carried by the guide and engageable with the slide, and recoil operated means for moving the slide to energize the spring.

2. In a machine gun, a cover having a transverse feedway, a slide mounted in the feedway, a spring housed in the cover in line with the longitudinal axis of the slide, a guide fitting between the slide and cover and confining one end of the spring, a connection between the slide and the guide, and recoil operated means for moving the slide to energize the spring.

3. In a machine gun, a member having a transverse feedway, a slide mounted in the feedway, a spring housed in the member having the feedway and opposing movement of the slide, and recoil operated means for moving the slide to energize the spring and for controlling return of the slide.

4. In a machine gun, a member having a transverse feedway, a slide mounted in the feedway, a spring opposing movement of the slide, and recoil operated means for moving the slide to energize the spring and for controlling return of the slide.

5. In a machine gun, a member having a transverse feedway, a slide mounted in the feedway, a spring opposing movement of the slide, and recoil operated means for moving the slide to energize the spring.

JAMES L. HATCHER.