

R. FROMMER.
AUTOMATIC FIREARM.
APPLICATION FILED JAN. 11, 1910.

Patented Sept. 17, 1912.

4 SHEETS—SHEET 1.

1,038,555.

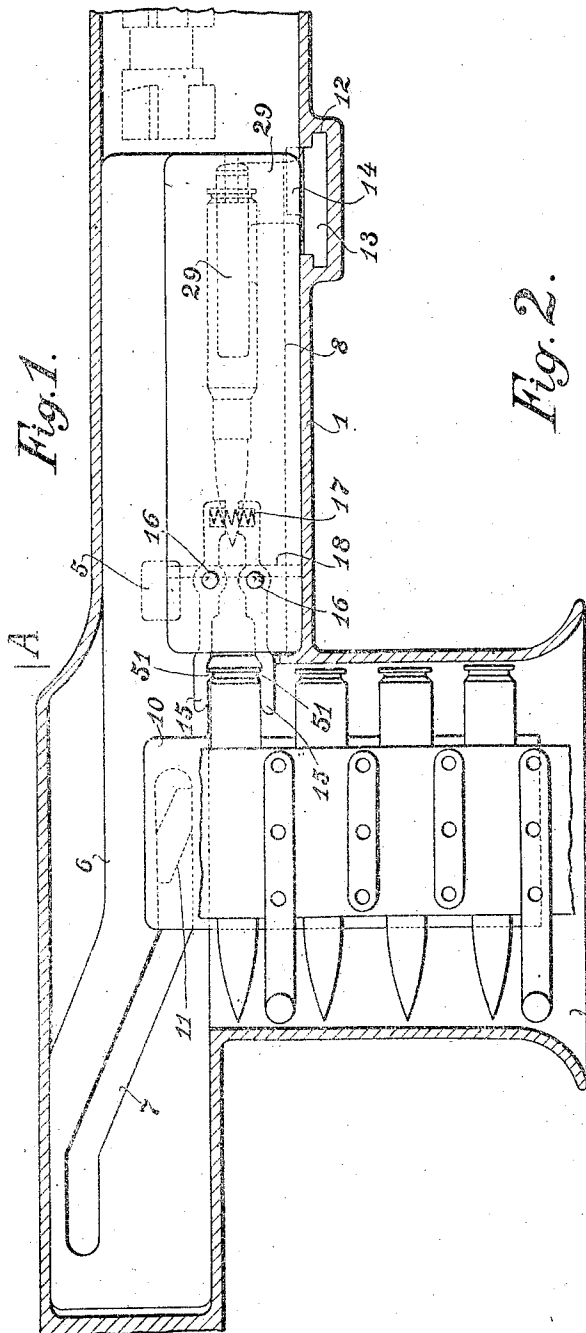
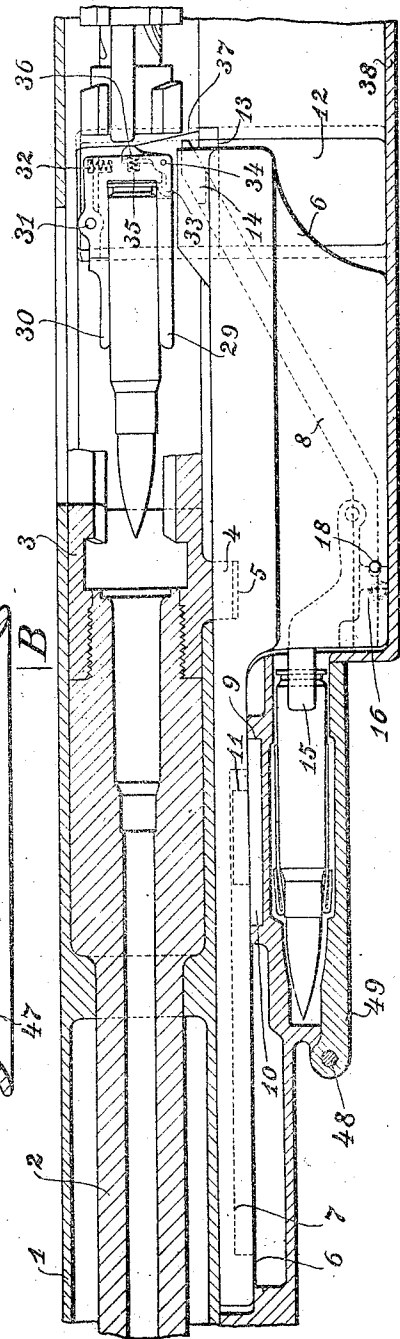


Fig. 1.

Fig. 2.



Witnesses:

A. Hoyt.
L. H. Craiden.

Inventor:

Rudolf Frommer
By *[Signature]*
Attorney

1,038,555.

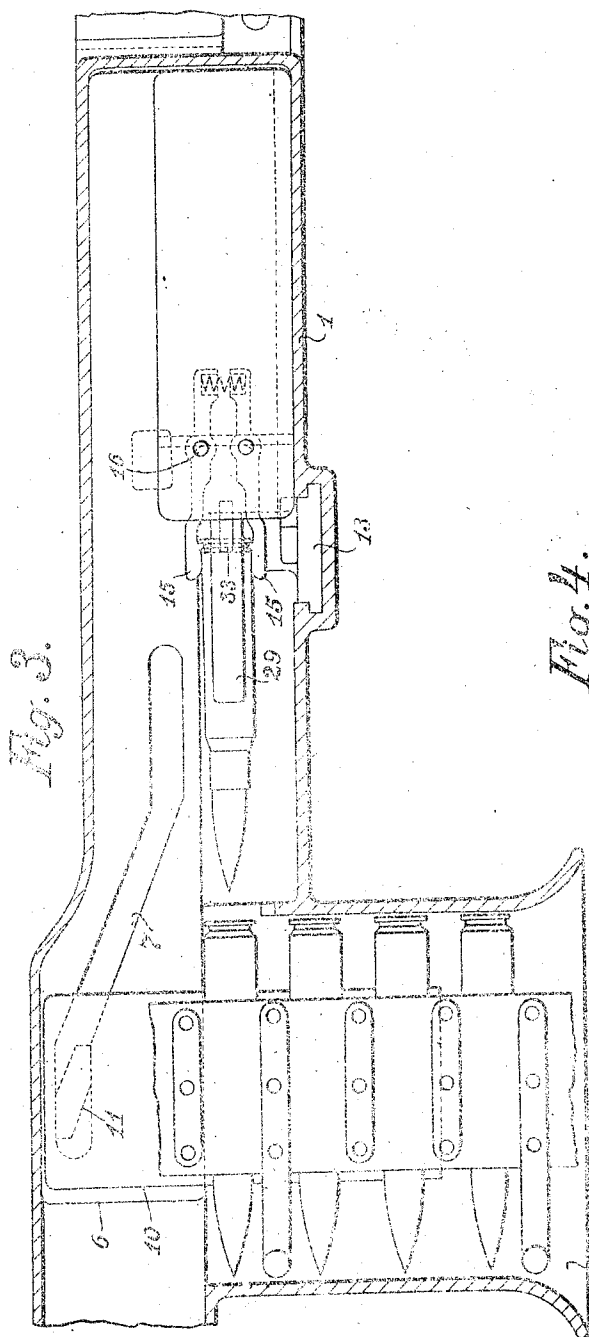
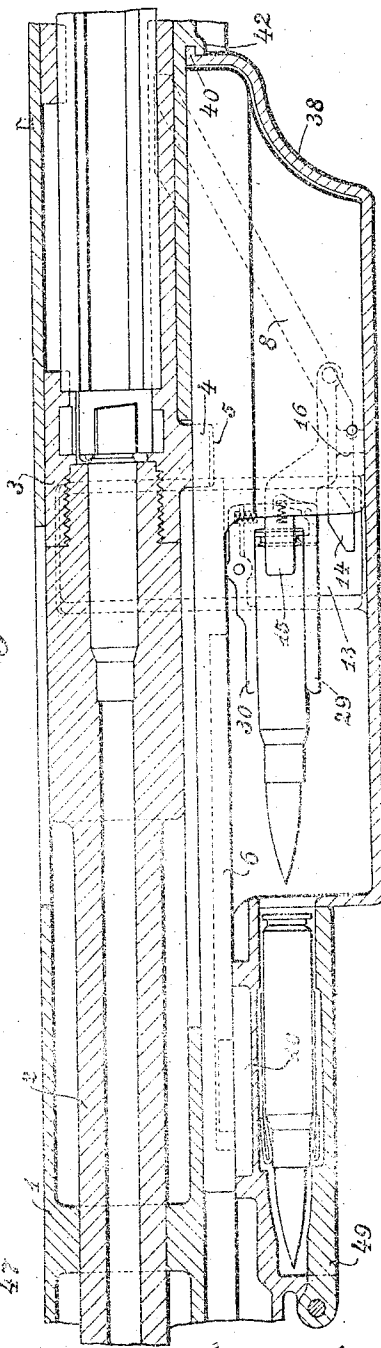


Fig. 3.

Witnesses:
 A. Lloyd.
 L. H. Staden

Fig. 4.



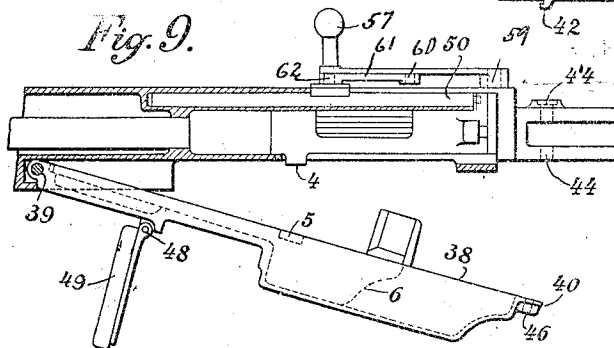
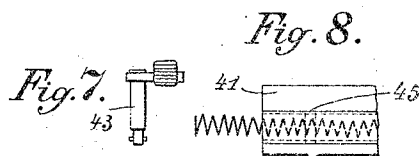
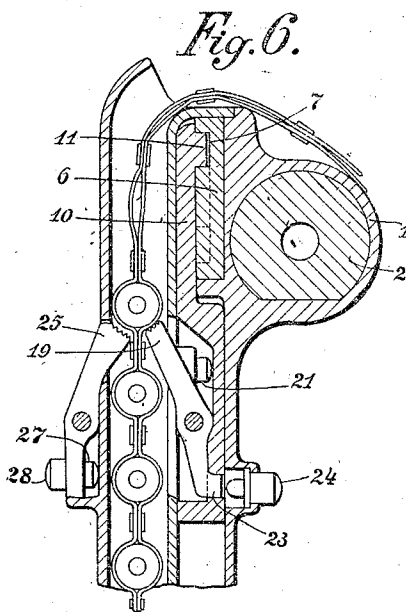
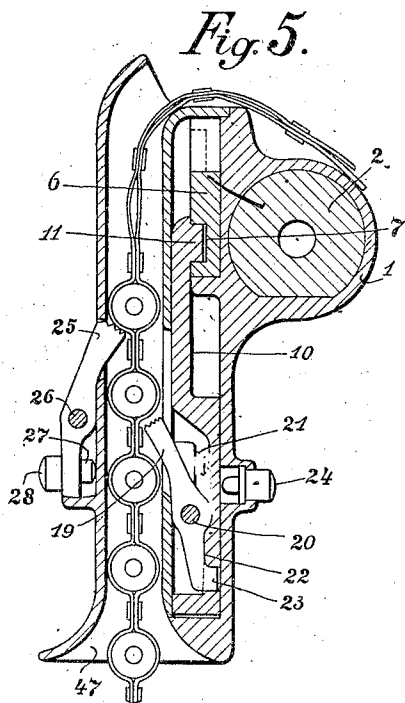
Inventor
 Rudolf Frommer
 by *A. H. Staden*
 atty.

R. FROMMER.
AUTOMATIC FIREARM.
APPLICATION FILED JAN. 11, 1910.

1,038,555.

Patented Sept. 17, 1912.

4 SHEETS—SHEET 3.



Witnesses

A. Hoyt.
R. W. Straden

Inventor:

Rudolf Frommer
by Arthur M. Miller
Att.

R. FROMMER.
AUTOMATIC FIREARM.

APPLICATION FILED JAN. 11, 1910.

Patented Sept. 17, 1912.

1,038,555.

4 SHEETS—SHEET 4.

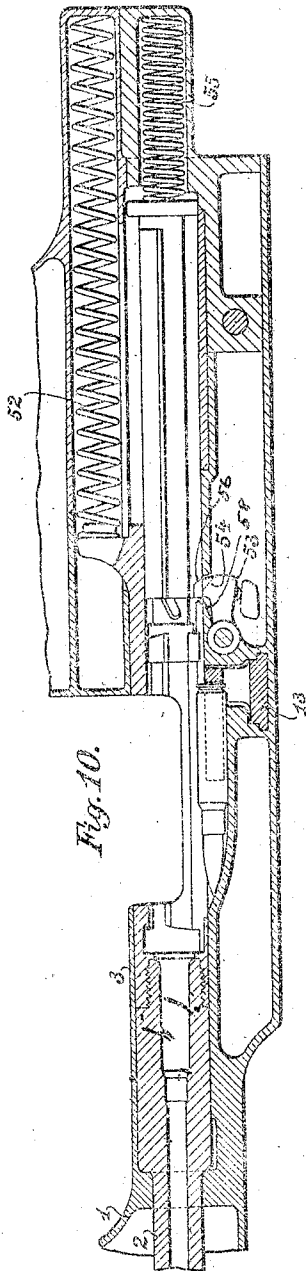


Fig. 10.

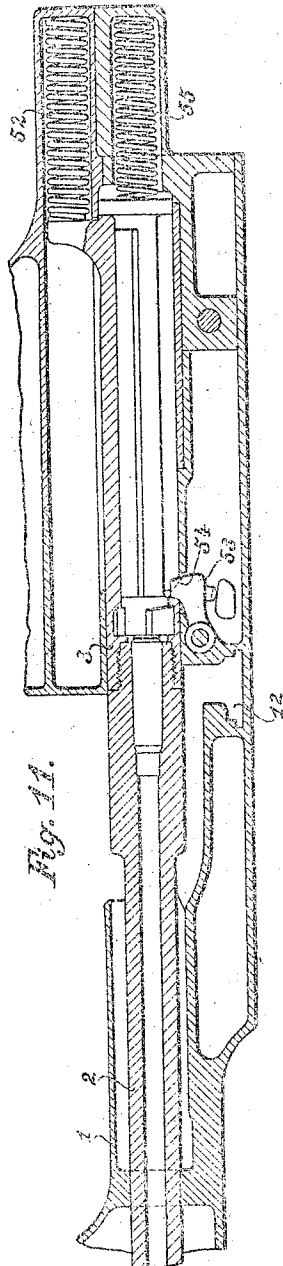


Fig. 11.

Witnesses:

H. Hoyer.
L. H. Hadden.

Inventor:

Rudolf Frommer
by Asst. Attorney
at Law.

UNITED STATES PATENT OFFICE.

RUDOLF FROMMER, OF BUDAPEST, AUSTRIA-HUNGARY.

AUTOMATIC FIREARM.

1,038,555.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed January 11, 1910. Serial No. 537,432.

To all whom it may concern:

Be it known that I, RUDOLF FROMMER, residing at 158 Külső Soroksári út, Budapest, Austria-Hungary, have invented certain new and useful Improvements in and Relating to Automatic Firearms, of which the following is a specification.

The present invention has for its object an automatic firearm with sliding barrel, in which the cartridge to be taken from the cartridge holder, such as a belt, magazine or the like, and to be transferred to the loading chamber, is withdrawn by means of an extracting member (such as a pair of pincers or the like) connected with the barrel. In accordance with the present invention the cartridge withdrawn from the cartridge holder is transferred to a transverse slide which conducts it in front of the loading chamber so that it can be pushed into this chamber by the breech bolt in its forward movement. Owing to this arrangement, the cartridge is securely seized and conducted into the loading chamber in an entirely positive manner.

An embodiment of the invention is illustrated by way of example in the accompanying drawing, in which:

Figure 1 is a side elevation of a part of a firearm, the casing being shown in section. Fig. 2 is a horizontal section through the barrel. Fig. 3 is an elevation corresponding to Fig. 1, but in a different position. Fig. 4 is a horizontal section corresponding to Fig. 3. Figs. 5 and 6 are cross sections of the firearm on the line A—B in Fig. 1, with the parts in two different positions, and Figs. 7 to 9 illustrate details of the firearm. Figs. 10 and 11 are vertical sections through the barrel in two different positions.

The barrel 2 is displaceable in the casing 1, as is also the breech socket 3 connected with the barrel. The breech socket comprises a stud 4 which engages in a corresponding recess 5 in a longitudinal slide 6, in such a manner that this slide participates in each forward and rearward movement of the barrel and breech socket. Grooves 7 and 8 are provided on the longitudinal slide 6 the former being in engagement with the stud 11 of the vertical slide 10 arranged in the groove 9, while the latter is in engagement with the stud 14 of the transverse slide 13 arranged in the groove 12.

In the longitudinal slide 6 there is arranged a pair of pincers, the claws 15 of which can swing about the bolts 16 and are acted upon by a spring 17. A pin 18 serves for fixing the pincers in the slide 6.

The vertical slide 10 carries an operating pawl 19 (Figs. 5 and 6) capable of oscillating around the bolt 20 and subjected to the pressure of a spring 21. Its oscillation is limited by a stop 22. The nose 23 serves to enable the operating pawl 19 to be released in the raised position of the slide 10 by means of the knob 24 (Fig. 6). A retaining pawl 25 rotatably mounted on the casing 1 on the bolt 26 coöperates with the operating pawl 19; the pawl 25 is acted upon by a spring 27. By pressing upon the knob 28 this retaining pawl can be disengaged.

A fork 29 is mounted on the transverse slide 13, its prong 30 being acted upon by a spring 32 and adapted to oscillate about the bolt 31. A hook 33 adapted to swing about the bolt 34, is acted upon by the spring 35 and comprises a disengaging knob 36.

In the embodiment of the invention as illustrated, the ammunition is introduced into the firearm by means of a cartridge belt; the ammunition can, however, also be loosely supplied by means of a loading hopper, metal band or the like.

The manner in which cartridges are fed is as follows:—After firing the barrel 2, the breech socket 3 and the rigidly locked breech bolt effect in common the total breech movement (Figs. 4 and 11). The longitudinal slide 6 participates in this movement and the pincers 15 withdraw the uppermost cartridge from the belt. During this withdrawal the vertical slide 10 remains stationary. Only after the cartridge has been withdrawn it is lifted by the inclined part of the groove 7 whereby it lifts the filled cartridge belt to the extent of one cartridge by means of the operating pawl 19 (Fig. 6) that is to say lifts the following cartridge to such an extent that it is ready to be withdrawn at the next operation of the pincers 5. The cartridge withdrawn from the cartridge belt by the pincers 15 during the recoil is drawn into the resilient fork 29 arranged on the transverse slide 13 (Figs. 4 and 5) the hook 33 snapping into the groove at the rear end of the cartridge and holding it in the fork 29. When the recoil ceases the barrel 2 and the breech socket 3 return

to the firing position under the influence of a spring 52 (Fig. 10) the longitudinal slide 6 being also moved forward again together with the breech socket. During this time the pincers 15 resiliently slip off the cartridge which is held by the hook 33 and when they again reach their front position they will grip the next cartridge which is facilitated by the form of the teeth 51 near the forward end of the claws 15. The vertical slide 10 returns to the position shown in Fig. 5 and is ready upon the next recoil to lift a fresh cartridge; during the downward movement of the vertical slide the cartridge belt is held by the retaining pawl 25. During the forward travel of the longitudinal slide 6 the stud 14 of the transverse slide 13 which already carries a cartridge in its fork 29 enters the oblique part of the groove 8 whereby the transverse slide 13 is guided in the groove 12 as far as the axis of the barrel (Fig. 2) and comes to rest in front of the breech bolt. The breech bolt which during the recoil is rigidly locked to the barrel and moves rearwardly with it has in the meantime been held in its rearward position by a spring cam 53 (Figs. 10 and 11) which enters the recess 56 of the breech bolt and remains in this position, until the barrel reaches its forward position in which it releases the spring cam 53 by means of an inclined surface 58 pushing upon a chambered face 54 so that the breech bolt is freed and pressed forward by the closing spring 55. The breech bolt then presses the cartridge located in the fork 29 of the transverse slide 13 into the loading chamber and becomes rigidly locked to the barrel. In order to enable the cartridge in the fork 29 to be pressed into the loading chamber by the breech bolt it is necessary that the hook 33 should previously be released. This is effected by an inclined face 37 provided in the casing 1 and the disengaging knob 36 of the hook 33 striking against this face whereby the hook is released so that the cartridge is then only retained by the spring prong 30 and can be pressed into the loading chamber by the breech bolt in its forward movement. The procedure described is repeated at each recoil and forward movement of the barrel and breech bolt.

In order to render all the parts of the feed mechanism readily accessible the latter is arranged in the cover 38 of the casing (Fig. 9) hinged to the bolt 39. At its rear end the cover of the casing when closed is fixed by means of a nose 42 (Fig. 8) of the cover cap 41 of the firearm said nose 42 pressing the ledge fillet 40 of the cover of the casing onto the casing when the cover cap is slid onto the firearm; the cover cap 41 is fixed by means of the bolt 43 (Fig. 7) which is passed through corresponding bores 44, 45 and 46.

In order that the cartridge hopper 47 and the cartridges situated therein may be readily accessible and that the cartridge belt or the like may be readily inserted and removed at any time the cartridge hopper is provided with a cover 49 hinged on the bolt 49 (Figs. 2 and 9); this cover can be secured to the cover 38 of the casing in the known manner by means of a spring catch or the like.

A special feature of the novel firearm is the simplicity and speed with which its barrel can be replaced. To this end the bolt 43 is withdrawn, the cover cap 41 removed, the cover 38 of the casing opened (the stud 4 is then disengaged from the recess 5) whereupon by means of the rod 50 actuated by the lever mechanism 57 the barrel, breech socket and breech can be withdrawn.

The lever mechanism shown in Fig. 9 comprises a lever 57 provided with a knob, which lever is adapted to swing about the fixed stud 59 provided on the casing. The lever 57 has secured to it a pivot 60 and is connected by a link 61 with the rod 50, which carries a pivot 62. If, therefore, the lever 57 is moved about its fulcrum 59, the rod 50, by means of the link 61, is also moved in a straight line, whereby the barrel, breech socket and breech bolt can be withdrawn. The barrel can then be removed by means of four movements of the hand and another barrel can be introduced to take its place, after which the fire arm can be readily remounted.

Claims:

1. In automatic fire-arms the combination with the sliding barrel, breech mechanism and loading chamber of a cartridge feeder, means directly connected with the barrel and operated thereby for automatically extracting a cartridge from said cartridge feeder, and a transverse slide adapted to receive the cartridge from said extracting means and to position it in front of the loading chamber.

2. In automatic fire-arms the combination with the sliding barrel, breech bolt and loading chamber, of a cartridge feeder, a longitudinal slide connected with the barrel, means on said slide for automatically extracting a cartridge from said cartridge feeder, a transverse slide adapted to co-operate with said longitudinal slide and to receive the cartridge withdrawn from the cartridge feeder, and position it in front of the loading chamber.

3. In automatic fire-arms the combination with the sliding barrel, breech bolt and loading chamber, of a cartridge feeder, a longitudinal slide connected with the barrel, means on said slide for automatically extracting a cartridge from said cartridge feeder, a transverse slide adapted to co-operate with said longitudinal slide and to

receive the cartridge withdrawn from the cartridge feeder, and position it in front of the loading chamber, and means for retaining the breech bolt in its rearward position during the forward movement of the barrel, and means on the latter for releasing the breech bolt.

4. In automatic fire-arms the combination with the sliding barrel, breech bolt and loading chamber, of a cartridge feeder, means for automatically extracting a cartridge from said cartridge feeder, a transverse slide adapted to cooperate with said extracting means and a yielding fork on said transverse slide adapted to receive the cartridge withdrawn from said cartridge feeder.

5. In automatic fire-arms the combination with the sliding barrel, breech bolt and loading chamber, of a cartridge feeder, means for automatically extracting a cartridge from said cartridge feeder, a transverse slide adapted to cooperate with said extracting means and a yielding fork on said transverse slide adapted to receive the cartridge withdrawn from said cartridge feeder, and a hook pivoted to said slide and

adapted to temporarily retain the cartridge in said fork.

6. In automatic fire-arms, the combination with a sliding barrel and the breech-bolt, of a cartridge feeder, a detachable cover, a longitudinal slide mounted on said cover, means on said slide for withdrawing a cartridge from said cartridge feeder and means detachably connecting said slide with the barrel.

7. In automatic fire-arms the combination with the sliding barrel, and the breech bolt, of a cartridge feeder, a longitudinal slide, means on said slide for withdrawing a cartridge from said cartridge feeder, means detachably connecting said slide with the barrel, and a detachable cover inclosing said slide, and a second cover pivoted to said detachable cover and inclosing the said cartridge feeder.

In testimony whereof I affix my signature in presence of two witnesses.

RUDOLF FROMMER.

Witnesses:

GUSTAF SCHÖN,
HUGH KEMEINY.