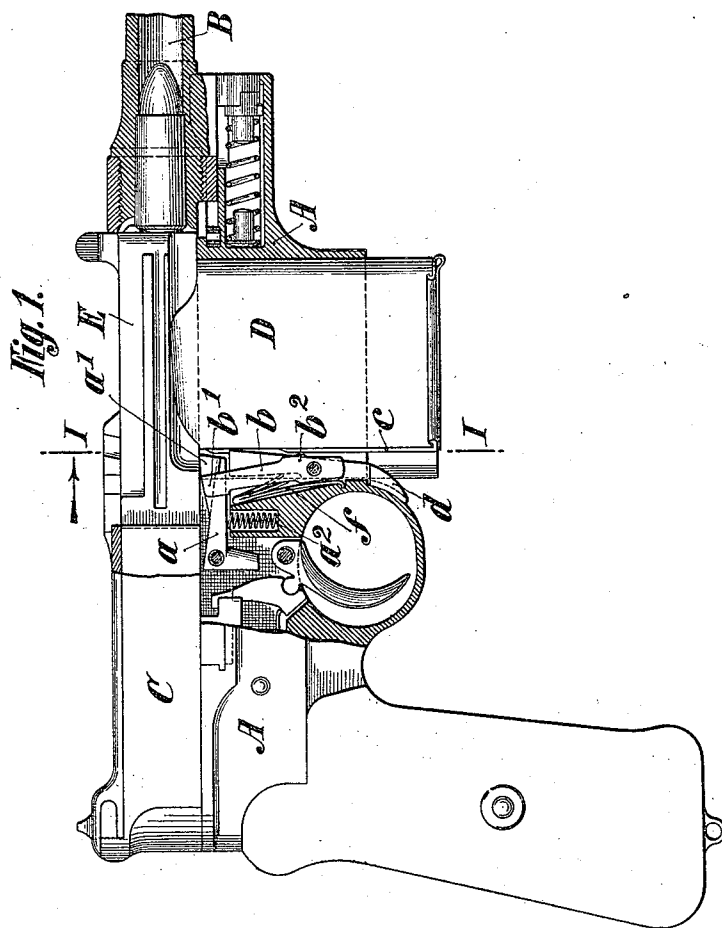
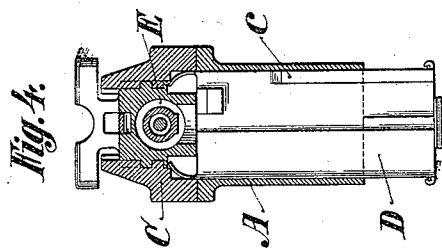


P. MAUSER.  
 RECOIL LOADING SMALL ARM.  
 APPLICATION FILED APR. 29, 1908.

903,998.

Patented Nov. 17, 1908.

3 SHEETS—SHEET 1.



WITNESSES:

*Fred White*  
*René Muine*

INVENTOR:

*Paul Mauser,*

By Attorneys,

*Arthur Chasert & Co.*

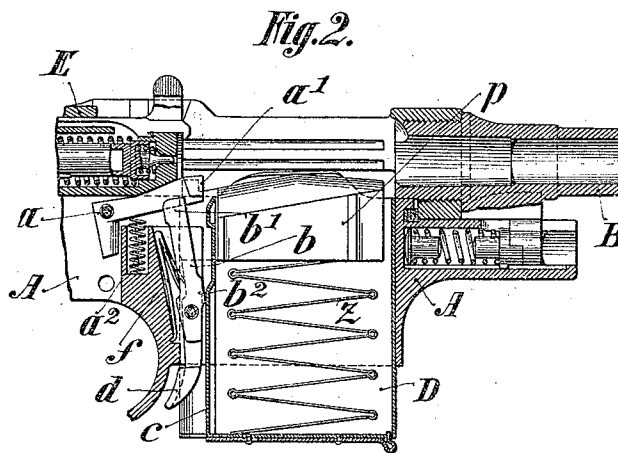


Fig. 6.

Fig. 7.

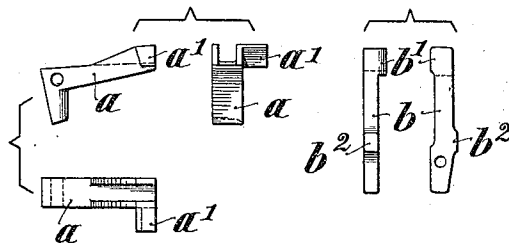
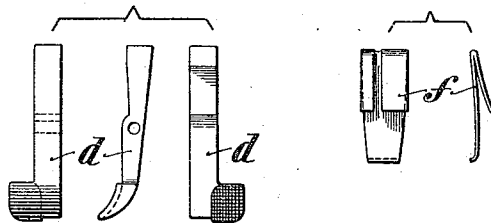


Fig. 8.

Fig. 9.



WITNESSES:

*Fred White*  
*Rene Muine*

INVENTOR:

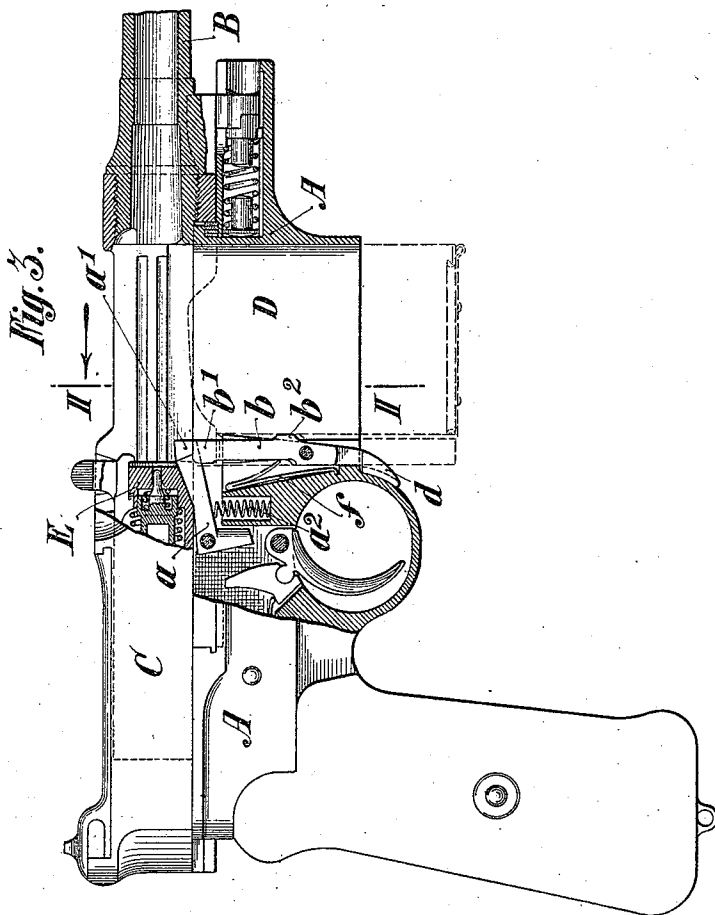
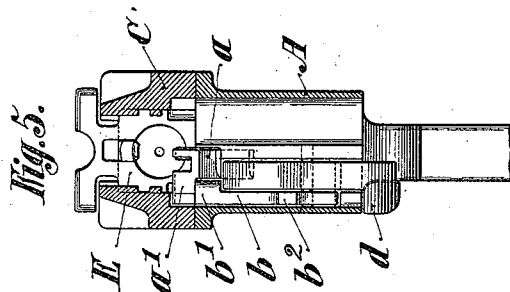
*Paul Mauser,*  
 By Attorneys,  
*Arthur & Cassin Usina*

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3 SHEETS—SHEET 3.



WITNESSES:

*Fred White*  
*Rene Bruine*

INVENTOR:

*Paul Mauser,*  
 By Attorneys,  
*Arthur C. Kaser & Co.*

# UNITED STATES PATENT OFFICE.

PAUL MAUSER, OF OBERNDORF-ON-THE-NECKAR, GERMANY.

## RECOIL-LOADING SMALL-ARM.

No. 903,998.

Specification of Letters Patent.

Patented Nov. 17, 1908.

Application filed April 29, 1908. Serial No. 429,992.

To all whom it may concern:

Be it known that I, PAUL MAUSER, royal commercial councilor, a subject of the King of Würtemberg, residing at Oberndorf-on-the-Neckar, in the Kingdom of Würtemberg, Germany, have invented certain new and useful Improvements Relating to Recoil-Loading Small-Arms, of which the following is a full, clear, and exact description.

In hitherto known automatic loading weapons with changeable magazines the arrangement is such that, after the last cartridge in the magazine has been fired off, the rearwardly moved breech bolt is retained in its rearward position by the cartridge feed plate or by a special arresting member, thereby indicating to the marksman that the magazine in the weapon is empty and must be replaced by a full one. This exchange of the empty magazine for a full one is, as is well known, easy and rapid; in order, however, to prepare the weapon again for firing, it is necessary with the devices hitherto known to partly or completely pull back the breech bolt and allow it again to advance in order to push a cartridge into the barrel. This movement takes more time than the simple exchange of a magazine, as the weapon has to be turned round or to be put from one hand into the other and then back again; this has been found to be a drawback, the removal of which is the object of the present invention.

Every self loading weapon after having fired the last cartridge, must be ready for loading and, after the fitting thereto of a new magazine, must be again immediately ready for firing; the manner in which this requirement is complied with is shown in the accompanying drawings as applied, for example, to a self loading pistol, "Mauser's system".

Figure 1 shows the right hand side of the pistol, partly in section to show the novel parts, the last cartridge out of the magazine and in the barrel ready for firing. Fig. 2 shows the breech bolt held back in the usual way by the cartridge feed plate, after the last cartridge in the magazine has been fired off, the empty magazine being still in the weapon. Fig. 3 shows the breech bolt held back by the cartridge ejector after the removal of the empty magazine from the weapon. Fig. 4 is a section on line I—I of Fig. 1, looking in the direction of the arrow. Fig. 5 is a section on line II—II of Fig. 3

looking in the direction of the arrow. Figs. 6 to 9 show details.

By referring to Figs. 1 to 5 it will be seen that the spring ejector *a*, a detent *b*, and the magazine holder *d*, are mounted at the side of or behind each other in the stock A (that is, that part on which the barrel B with the breech casing C is slidably mounted and guided) immediately at the rear limit of the magazine aperture. The detent *b* is influenced by the spring *f* and forms in its co-action with the spring ejector *a* on the one hand and the changeable magazine D on the other hand, the main feature of this invention.

Supposing the various parts of the weapon to be in the position shown in Fig. 1, all the parts will have assumed the position shown in Fig. 2 after the last cartridge has been delivered from the magazine, that is to say, the cartridge feed plate *p* of the magazine D, by the action of the feed spring *Z* thereon, passes in front of the rearwardly projected breech bolt E and prevents, as is well known, this latter from advancing to its locked position. If the empty magazine is now removed from the weapon to be replaced by a full one, the breech bolt would, in the usual way, be released from the feed plate, and consequently resume its closed position. This is the known operation as described at the beginning of this specification and which is disadvantageous because the weapon is not ready for firing after the full magazine has been introduced, for the reason, first of all, that the breech bolt has to be pulled back by hand until it is able to engage the uppermost cartridge and push it into the barrel. Attempts have already been made, by introducing special arresting members, to meet this drawback, but they have only succeeded so far that the breech bolt has not had to be pulled back the whole distance of its working movement but only a short distance in order to be released from the member holding it and to be able to push a cartridge from the new full magazine into the barrel.

The saving of time by this means is, however, so slight that it is not worth the arrangement provided, as a special handle is necessary for drawing back the breech bolt whether for a greater or smaller distance.

According to the present invention the arrangement is such that after the last cartridge has been delivered by the magazine,

the breech bolt is held back by the feed plate of the magazine in the same manner as heretofore, (Fig. 1); the breech bolt, however, does not immediately advance to its closed position after the removal of the empty magazine but is held fast by the spring ejector *a*, as shown in Fig. 3, until it is released from the latter by the fitting of a new full or empty magazine, when, in advancing to its closed position, it simultaneously pushes a fresh cartridge out of the magazine into the barrel. This is effected by the movability of the spring ejector (which does not hinder the freedom of movement of the breech bolt when shooting and when a magazine is in the weapon) being interrupted when the magazine is removed by means of a detent *b* until a new magazine is introduced. When this has been done the ejector again obtains its spring movement and is then able to eject the empty cartridges.

The details necessary for the above described operation are shown in Figs. 6 to 9. Fig. 6 shows the ejector *a*, which, contrary to the form hitherto adopted, has only one laterally projecting nose *a*<sup>1</sup>, under which the detent *b* (Fig. 7) passes when the free movement of the ejector is to be temporarily interrupted. The magazine holder *d* (Fig. 8), which holds the magazine in the weapon in known manner, and the detent *b* are both influenced by a duplex spring *f* (Fig. 9). The arrangement of these parts in the weapon and their action will be understood by referring to the drawing.

The ejector is constantly pressed upwards by its spring *a*<sup>2</sup> if it is not, as shown in Fig. 1, held down by the breech bolt while the latter is in its closed position; if, however, the breech bolt is in its open position, the ejector is able to pass into a notch or recess provided for this purpose in the underside of the fore part of the breech bolt (Fig. 2) and is again pressed down by the following closing movement of the breech bolt if not meanwhile held by the intervention of a special detent *b* and thereby prevented from any downward movement. This latter takes place when the empty magazine is taken out of the weapon in order to be replaced by a full one (Fig. 3). The detent *b*, which, by a projection *c* on the rear wall of the magazine, was held against the pressure of the spring *f* in the position shown in Fig. 1, is released from the resisting action of the projection *c*, and, by the pressure of the spring *f*, is caused to pass with its upper end *b*<sup>1</sup> under the nose *a*<sup>1</sup> of the ejector *a*; the latter is thereby prevented from moving downwards and consequently holds the breech bolt in its rearward (open) position, (instead of it being held by the feed plate which was re-

moved with the magazine) until the projection *c* of a newly introduced filled magazine again presses back the detent *b*, whereupon the ejector is released by the latter and the breech bolt is capable of advancing without hindrance to its closed position during which it simultaneously pushes the uppermost cartridge out of the magazine into the barrel. The weapon is now in the condition shown in Fig. 1, ready for firing again.

What I claim as my invention, and desire to secure by Letters Patent is:

1. In a self-loading small arm having a detachable magazine, a device for automatically putting the weapon in readiness for firing when changing magazines, comprising a spring ejector for holding the breech bolt back when the magazine is removed, a detent for engaging said ejector, said detent being adapted to be disengaged from said ejector by a fresh magazine whereby the breech bolt can resume its closed position and thereby push a cartridge from the magazine into the barrel.

2. In self-loading small arms, the combination with the breech bolt of an ejector having a projecting nose, a notch or recess in the underside of the nose of the breech bolt into which the ejector can pass, a spring-pressed detent, and a projection on the magazine which holds the detent against the action of its spring, which detent, when the magazine is removed, is pressed forward so as to come under the nose of the ejector when the latter has risen into the notch or recess in the breech bolt and the latter is in the fully open position.

3. In a fire arm having a breech bolt, a detachable magazine, means operated by the magazine for holding back said breech bolt when the magazine is empty, means for holding back said breech bolt when the magazine is removed, and means for releasing said last named means when a fresh magazine is introduced.

4. In a fire arm having a breech bolt, a detachable magazine having means for holding back said breech bolt when the magazine is empty, and a catch mechanism adapted to be interposed in the path of said breech bolt when the magazine is removed, so as to hold said breech bolt in its open position, and means connected with the magazine for releasing said catch mechanism when a fresh magazine is introduced.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

PAUL MAUSER.

Witnesses:

HENRY HASPER,  
WOLDEMAR HAUPT.