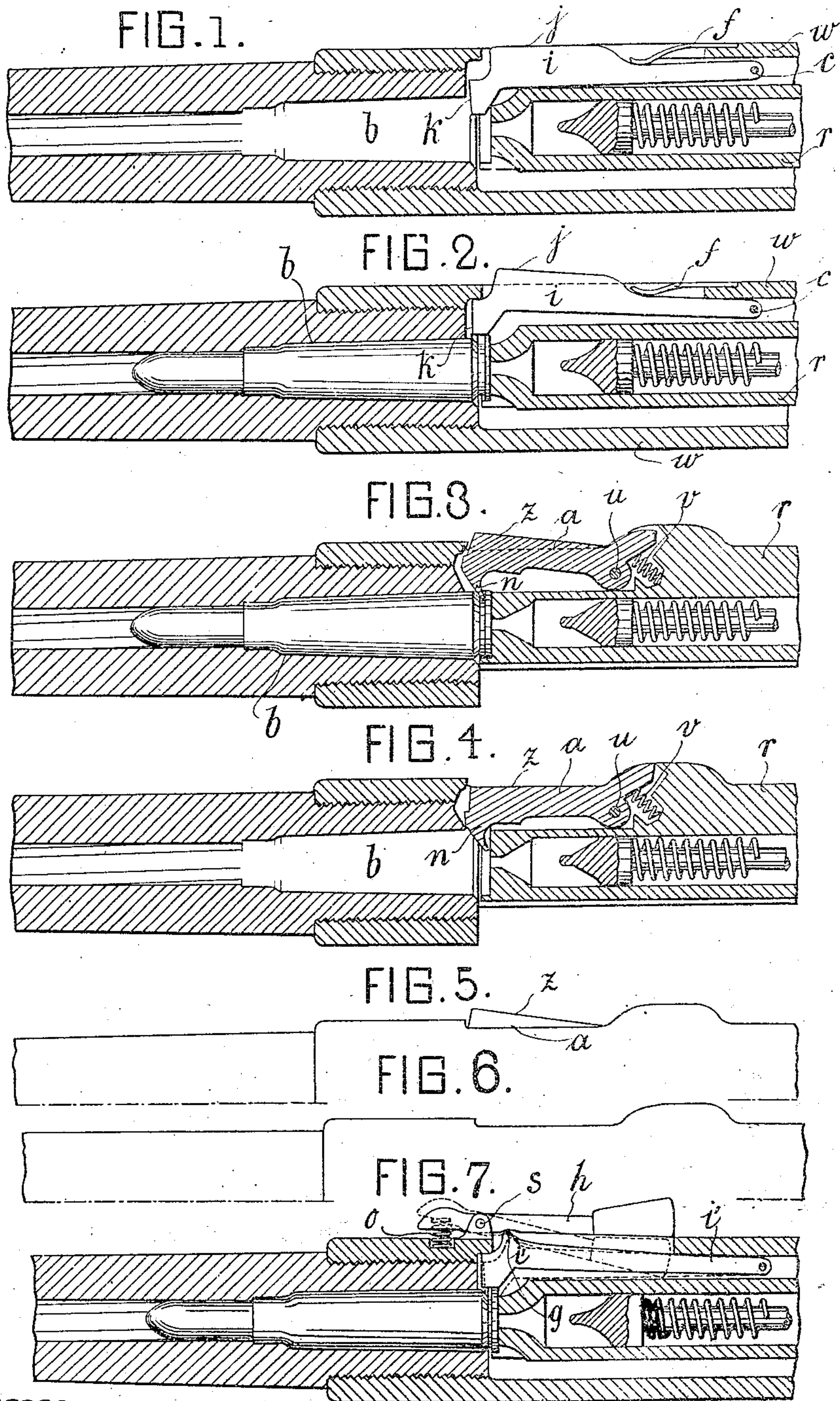


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PATENTED DEC. 26, 1905.

G. LUGER.
FIREARM.

APPLICATION FILED JUNE 28, 1904.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORG LUGER, OF CHARLOTTENBURG, GERMANY.

FIREARM.

No. 808,433.

Specification of Letters Patent.

Patented Dec. 26, 1905.

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To all whom it may concern:

Be it known that I, GEORG LUGER, engineer, a subject of the Emperor of Austria-Hungary, and a resident of No. 34 Weimarerstrasse, Charlottenburg, in the Empire of Germany, have invented certain new and useful Improvements in Means for Indicating the Loaded Condition of Firearms, (for which Letters Patent of Great Britain, No. 13,147, of June 10, 1904, have been granted to me,) of which the following is an exact, full, and clear description.

This invention relates to means whereby it will be readily indicated on the exterior of firearms whether or not a cartridge is contained in the cartridge-chamber of the barrel. The drawback of not being able to see on the outside of the ordinary military firearms the loaded condition of the same is very annoying, especially in connection with firearms having an automatic loading device—as, for instance, the known recoil-loading firearms—because they are regularly reloaded after every discharge, and therefore in the event of carelessness there is danger of an unintentional discharge of the cartridge.

This invention is chiefly characterized by a peculiar arrangement of levers or equivalent means, which inwardly extend with a correspondingly wedge-shaped extremity into the side wall of the cartridge-chamber or the barrel at the receiving end thereof, so that when there is a cartridge in the barrel or when a cartridge is inserted in the cartridge-chamber—i. e., when closing the breech—the cartridge will strike against the wedge-surfaces and the levers or members will be automatically thrown outward, in consequence of which sufficiently long or wide and very conspicuous parts on the outside of the firearms will indicate the loaded condition of the latter. It is essential that the part extending into the cartridge-chamber be formed with a wedge-shaped surface and bear laterally upon the outer surface or rim of the cartridge, whereby the requisite projection can be obtained for indicating the loaded condition of the firearm. The invention is preferably carried out in such a manner that the indicating-levers may also serve as cartridge-extractors.

The object of the invention is to produce a very striking indication of the loaded condition of the firearm, and it can also be fulfilled by lever mechanism, by means of which a small indicating movement of the members which are actuated during the insertion of the

cartridge produces an increased movement of the special indicating part.

In the accompanying drawings, Figures 1 and 2 are longitudinal sections through the cartridge-chamber and adjoining parts of a firearm, a cartridge being shown in position in Fig. 2. Figs. 3 and 4 show the indicating-lever employed as an extractor. Figs. 5 and 6 show in side elevation the positions of the parts shown in Figs. 3 and 4. Fig. 7 is a modification.

The indicating means, for which is used a lever or equivalent member—such as a pawl, a slide, and the like with an indicating projection—may be located on the receiver or on the movable breech part or breech-bolt.

According to the construction shown in Figs. 1 and 2 the indicating-lever *i* is mounted in a slot of the fixed receiver *w* behind the barrel or cartridge-chamber *b*. This lever is fulcrumed at *c* and at its front end has a wedge-shaped projection *k*, movable laterally in a recess in the receiving-end of the barrel, where it bears against the casing or rim of the cartridge when a cartridge is contained in the chamber. By means of the spring *f* the lever *i* tends to move inward. If no cartridge is in the chamber, the projection *k* occupies the position shown in Fig. 1, and when in this position the back or projection *j* of the lever is lowered flush with the receiver *w*; but as soon as a cartridge is inserted in the chamber *b* the lever *i* must, in consequence of the engagement of the cartridge with the wedge-shaped projection *k*, move outward against the action of the spring and finally assume such a position that the back or projection *j* protrudes from the receiver, Fig. 2. Consequently this serves as a true indication that a cartridge is contained in the cartridge-chamber, the rim of the cartridge forming the support for the end of the lever. The projection *k* is flat at its inner end and on its rear face is inclined to permit the free insertion of the cartridge. The indicating-lever may be mounted on a movable breech part or the breech-bolt, in which event the inclined surface of the depending projection must be at the front instead of at the rear, whereby in consequence of the lever impinging against the cartridge when the breech-bolt moves forward the outward movement of the lever occurs during the closing of the breech. This construction is shown in Figs. 3 to 6. In this arrangement the lever is subjected to the action of the spring *v*, so as to oscillate inwardly

on the fulcrum *u* in the breech-bolt *v*, and is of a form suitable for the indicating purpose as described in reference to Figs. 1 and 2; but instead of the cartridge-engaging surface of the lever being flat it is formed as a hook-shaped projection *n*. If the cartridge, Fig. 3, is located in the cartridge-chamber *b*, and consequently the hook-shaped projection *n* engages with the rim of the cartridge, the back or projection *z* of the free end of the lever *a* serves as the indicator and will project far enough upward or outward in order to show that a cartridge is in the cartridge-chamber. The modification which the extractor undergoes in order to act as an indicator consists, essentially, in the fact that the angular stroke or play is adequately increased—that is, is greater than is necessary to serve the office of an extractor. As soon as the cartridge is removed from the barrel and the breech closed the projection *n* is no longer raised outward, the extractor-lever *a* assuming the inward position shown in Fig. 4, so that the part *z* descends into the breech in such a manner that it indicates that the cartridge-chamber is empty. The two different positions are, moreover, shown in profile contour in Figs. 5 and 6. The projection *z*, Fig. 5, may be provided with an indicating inscription.

According to another construction of the invention a plurality of levers is provided for increasing the difference of movement. This construction is shown by way of example in Fig. 7. The lever *z'*, which is adapted to oscillate within narrow limits, actuates, by means of an outwardly-directed projection *g*, the indicating-lever *h*, which oscillates on the fixed pivot *s* and carries at its free end a suitably-shaped indicator, (with inscription or other kind of mark.) The lever *h* tends under the action of a spring *o* to move into the position indicated by dotted lines, and in indicating that the cartridge-chamber is empty the said lever, together with the inwardly-pressed lever *z'*, is lowered against the cheek of the receiver. When a cartridge enters the barrel, the lever *z'* is oscillated a certain distance laterally and produces a comparatively increased outward movement of the indicating-lever *h*, so that the position of the parts which conspicuously indicate the loaded condition results therefrom, as shown in Fig. 7 in full lines.

From what has been said it will be seen that the lever is mounted in a slotted member in rear of the barrel and has a considerable range of free movement at its engaging end, so that it will always indicate by its position whether or not a cartridge is in the barrel, the lever being so moved instantly a cartridge is in the

barrel. The latter has a slight recess at its receiving end to accommodate the free end of the lever, the integrity of the barrel not being impaired. Furthermore, the inclined face of the free end of the lever insures the riding of the latter on the cartridge. When used as an extractor, the lever is mounted in the breech-bolt and in this as in all other instances is exposed through the slot the greater portion of its length, so that its movements will be marked and readily perceptible at a glance.

I claim as my invention—

1. The combination with a firearm having a barrel formed with a recess in its receiving end, and a slotted member in rear of such barrel, the slot whereof is coincident with said recess, of means for indicating the presence or absence of a cartridge in said barrel, comprising a spring-pressed lever fulcrumed at or near one end in said member and fitted in the slot thereof, the free end of said lever having a projection on its inner face extending into said recess, said end of said lever being projected beyond said slot outside the exterior plane of said member when said projection is in engagement with a cartridge in said barrel.

2. The combination with a firearm having a barrel and a slotted breech-bolt in rear thereof, of means for indicating the presence or absence of a cartridge in said barrel, comprising a spring-pressed extractor-lever fulcrumed at or near one end in said breech-bolt and at its other end having an inner projection forming a hooked extremity for engaging the rim of a cartridge, the outer portion of such lever at such end being projected beyond said slot outside the exterior plane of said breech-bolt when said hooked extremity is in engagement with a cartridge.

3. The combination with a firearm having a barrel and a slotted breech-bolt in rear thereof, of means for indicating the presence or absence of a cartridge in said barrel, comprising a spring-pressed extractor-lever fulcrumed at or near one end in said breech-bolt and at its other end having an inner projection forming a hooked extremity for engaging the rim of a cartridge, the forward face of such extremity being inclined, and the outer portion of such lever at such end being projected beyond said slot outside the exterior plane of said breech-bolt when said hooked extremity is in engagement with a cartridge.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GEORG LUGER.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.