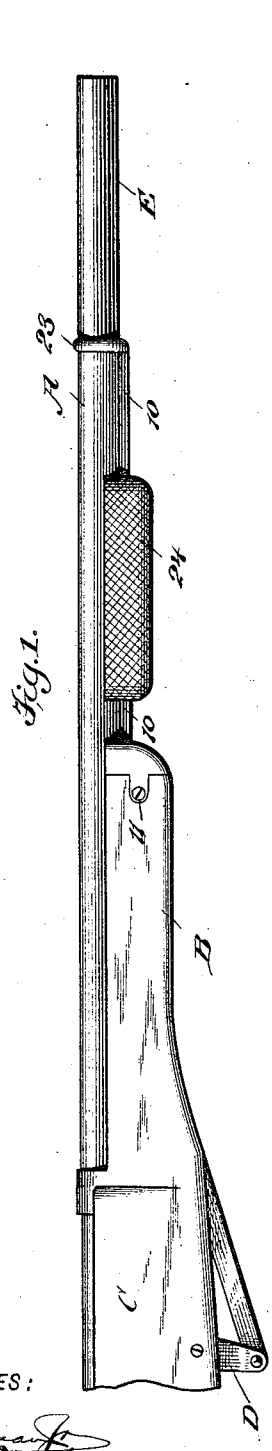
No. 684,173. Patented Oct. 8, 1901.

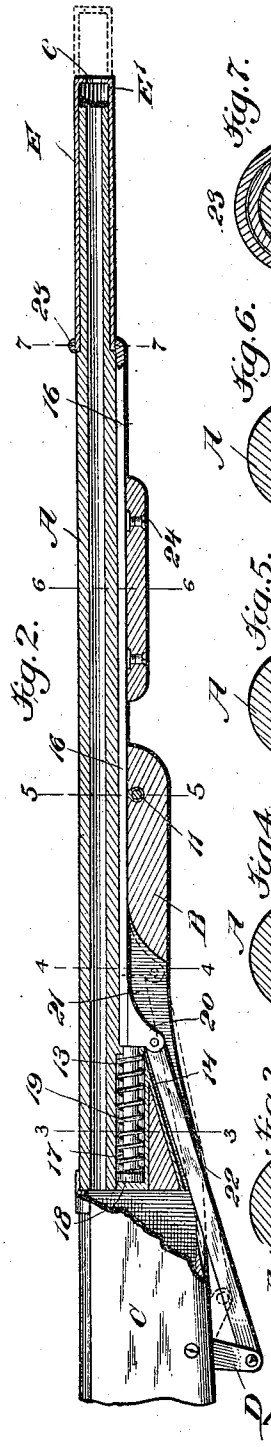
K. K. BJERKNESS.

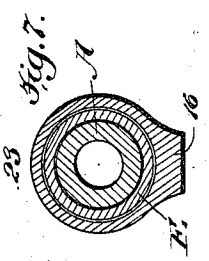
FIREARM.

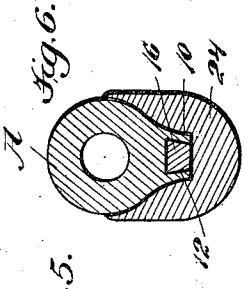
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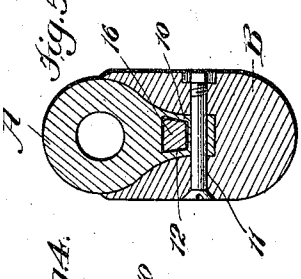
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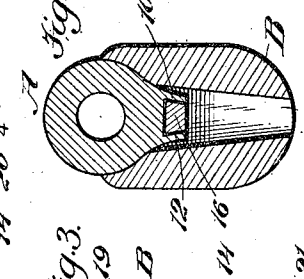


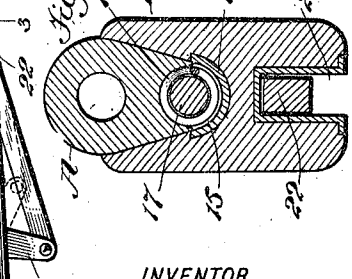












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KARL KRISTEAN BJERKNESS, OF KASLO, CANADA.

FIREARM.

SPECIFICATION forming part of Letters Patent No. 684,173, dated October 8, 1901.

Application filed November 30, 1900. Serial No. 38,184. (No model.)

To all whom it may concern:

Be it known that I, KARL KRISTEAN BJERKNESS, a subject of the Queen of Great Britain, and a resident of Kaslo, in the Province of British Columbia and Dominion of Canada, have invented a new and useful Improvement in Firearms, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide an attachment to firearms which is connected with a lever in the magazine-chamber and which has such relation to the muzzle portion of the barrel that through the expansion of gases escaping from the barrel the device will automatically operate the said lever at each time the charge is fired, whereby as such charge is fired the empty shell is extracted, a new shell brought in position for firing, and the hammer is carried to firing position, all without the assistance of the marksman.

A further purpose of the invention is to provide a simple mechanism for accomplishing the above-named results and a mechanism which may be readily applied to any form of firearm or to large or small ordnance.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the barrel and a portion of the fore-arm of a gun, showing the adaptation of the invention thereto. Fig. 2 is a longitudinal section through the barrel and through the fore-arm, the attachment being shown partially in side elevation and partially in section. Fig. 3 is a transverse section on the line 3 3 of Fig. 2. Fig. 4 is a transverse section on the line 4 4 of Fig. 2. Fig. 5 is a similar section taken on the line 5 5 of Fig. 2. Fig. 6 is a transverse section taken on the line 6 6 of Fig. 2, and Fig. 7 is a similar section taken on the line 7 7 of Fig. 2.

A represents the barrel of a gun; B, the fore-arm; C, that portion of the frame in which the magazine-chamber is located, and D the lever used in the magazine-chamber for operating the extractor or ejector and for operating the feed mechanism for the cartridges and recording device, if one be employed. This lever D may be of the usual type.

The barrel A at its muzzle portion is exteriorly reduced in diameter, and upon this reduced portion of the barrel a sleeve E is held to slide, and when the inner end of the said sleeve is against the shoulder of the barrel, formed by the reduction of its outer surface, the forward end of the sleeve will be some distance beyond the muzzle of the barrel, forming thereby a chamber E′, and the sleeve E is partially closed at its forward end, being provided only with an opening *e* of the same diameter as the diameter of the bore of the barrel, so that when a charge is fired the gases expand in the chamber E′ and force the sleeve E forward to the dotted position shown in Fig. 2.

The barrel is preferably made with a longitudinal rib 10 at its bottom, and this rib commences near the breech end of the barrel and continues to a point near where the sleeve E is on the barrel. This rib is of greatest depth at or near its center, and at this point a bolt 11 is passed through the rib and through the fore-arm, as is shown in Figs. 1, 2, and 5. A groove or channel 12 is produced longitudinally in the said rib 10, which groove or channel 12 is dovetailed in cross-section and extends through the bottom portion of the rib at the front and rear sections thereof, as shown in Figs. 4, 5, and 6; but at the central portion of the rib the groove or channel 12 is entirely within the rib, as shown in Fig. 5.

The barrel A is deepened at its breech, as shown in Fig. 3, and in the bottom of this deepened portion of the barrel A a concaved recess 13 is made, which recess, in connection with a plate 14, located in a recess formed in the fore-arm B, constitutes a longitudinal chamber 15, closed at its rear or breech end, as shown in Figs. 2 and 3. A cylindrical extension 17 from the breech end of a connecting-rod 16 extends into the said chamber 15, and the said connecting-rod 16 is held to slide in the channel 12 at the bottom portion of the barrel A. The rear or breech end of the connecting-rod 16 is provided with a head 18, and a spring 19 is coiled around the connecting-rod within the chamber 15, which spring has bearing against the head 18 and the forward wall of the said chamber, as is clearly shown in Fig. 2. This spring is placed under ten-

sion when the sleeve E is forced forward by the expansion of the gases, and as soon as the gas has escaped from the chamber E' the spring 19 acts to return the sleeve E to its normal position. At that point where the connecting-rod 16 joins its rear extension 17 a downwardly-extending lug 20 is formed, which lug extends and has movement in a slot 21, produced longitudinally in the bottom portion of the fore-arm B. One end of a link 22 is pivoted to the said lug 20, the other end of the link being pivotally attached to the magazine-lever D, and in this manner the magazine-lever and connecting-rod are united. The said connecting-rod at its forward end is in its turn attached to the sleeve E. This attachment is preferably made by forming an interiorly-threaded ring 23 at the forward end of the connecting-rod 16, into which ring the inner or rear end of the sleeve E is screwed. It will therefore be observed that when the sleeve E is forced forward by the expansion of the gases in the chamber E' through the medium of the connecting-rod 16 and link 22 the magazine-lever will be moved to the position shown in dotted lines in Fig. 2, at which time the magazine-lever will operate the extracting mechanism, will bring a new charge in position to be fired, and will also carry the hammer to cocked position.

It is sometimes desirable that the magazine-lever D should be operated by hand, especially when the magazine has just been filled and the lever D should be operated to bring a cartridge in the breech of the barrel. The said lever D may be operated by hand by attaching a grip-block 24 to the connecting-rod 16 in front of the fore-arm B, the said block being so shaped upon its upper face as to receive the rib and the sides of the barrel.

It will be observed that by employing the hand-block 24 in connection with the connecting-rod 16 and the connection between the said rod and the magazine-lever D a gun having an expansion-chamber for gases may be automatically operated or may be operated by hand, as the block 24 forward of the fore-arm is used to operate the mechanism entirely independent of gas forces—that is, the recoil of the gun being resisted by the arm of the operator engaging the block naturally draws the rod 16 outward and operates the mechanism exactly as though it were operated by gas, especially when the gun is held loosely against the shoulder.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In firearms, the combination with the barrel, having a longitudinal rib at its under face provided with a groove, and a sleeve mounted to slide on the barrel at its muzzle end and constituting an expansion-chamber for gases, of a connecting-rod attached at its forward end to the said sleeve the said connecting-rod being mounted to slide in the groove on the under surface of the barrel, the said connecting-rod having a cylindrical extension at its rear end provided with a head and extending into a chamber located at the under side of the barrel at its breech end, a spring coiled on the connecting-rod within said chamber, and a link uniting the connecting-rod with the operative mechanism of the gun, as set forth.

2. In firearms, the combination with the barrel, and a sleeve mounted to slide on the barrel at its muzzle end and constituting an expansion-chamber for gases, of a rod connected with said sleeve and mounted to slide in a longitudinal groove on the under surface of the barrel, the said rod being provided with a cylindrical extension at its rear end extending into a chamber formed by a recess in the under surface of the barrel at the breech end and a corresponding recess in the fore-arm, a coiled spring around the connecting-rod within the chamber, a lug extending downward from the connecting-rod at its junction with its cylindrical extension, and extending into a slot formed in the fore-arm, a link pivoted to the said lug and connected with the operative mechanism of the gun, and a hand-block secured to the connecting-rod in front of the fore-arm, as set forth.

3. In firearms, a barrel having a longitudinal rib at its bottom provided with a longitudinal groove, a rod having a body portion fitted to slide in the groove in the bottom portion of the barrel, the said rod having a cylindrical extension at its breech end, a chamber into which the cylindrical extension extends, a spring in said chamber for exerting tension on the rod, a link connecting the rod with the operative mechanism of the gun, and a hand-block secured to the connecting-rod, for the purpose set forth.

4. In firearms, the combination with the barrel having a longitudinal rib on the under side provided with a groove, of a rod mounted to slide in the said groove, a hand-block secured to the rod, and a link connecting the rod with the operative mechanism of the gun.

5. In firearms, the combination with the barrel having a longitudinal rib at its under face provided with a groove, of a rod mounted to slide in the said groove, a link connecting the rod with the operative mechanism of the gun, and a hand-block secured to the rod in front of the fore-arm of the gun and shaped upon its upper face to receive the rib and the sides of the barrel, the said hand-block being arranged to be grasped by the operator to resist the recoil of the gun, thereby drawing the rod outward and operating the mechanism, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

KARL KRISTEAN BJERKNESS.

Witnesses:

CHARLES W. MCANN,

JAMES WAUGH.