

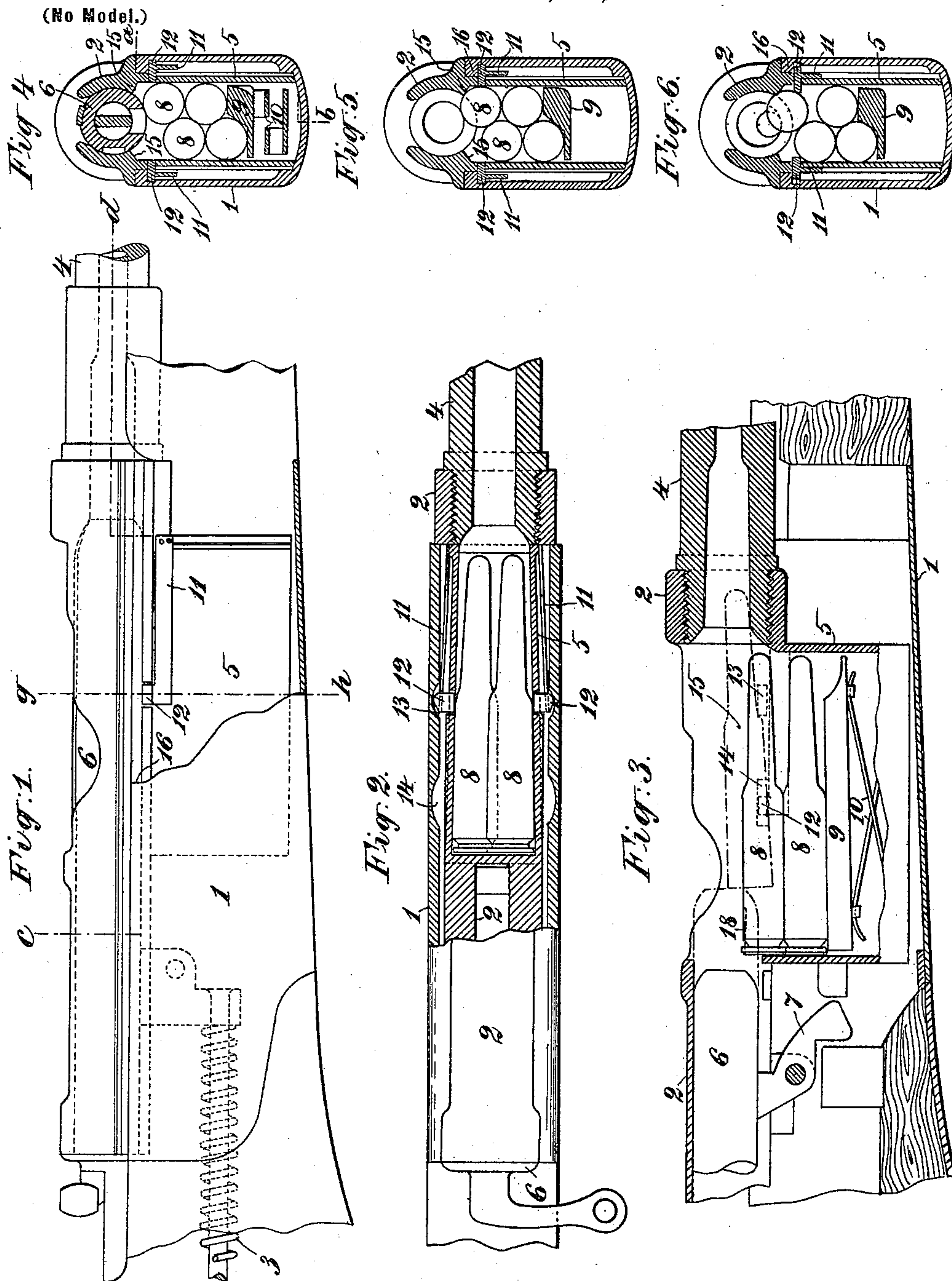
No. 680,488.

Patented Aug. 13, 1901.

R. H. KJELLMAN & G. L. ANDERSSON.

AUTOMATIC FIREARM.

(Application filed Jan. 17, 1901.)



WITNESSES:

J. H. Kloman
Peter A. Ross

INVENTORS:

Rudolf H. Kjellman
Gustaf L. Andersson
BY
Harry Connell
ATTORNEY

UNITED STATES PATENT OFFICE.

RUDOLF HENRIK KJELLMAN AND GUSTAF LEANDER ANDERSSON, OF
STOCKHOLM, SWEDEN, ASSIGNORS TO AKTIEBOLAGET AUTOMAT-
GEVÄR, OF SAME PLACE.

AUTOMATIC FIREARM.

SPECIFICATION forming part of Letters Patent No. 680,488, dated August 13, 1901.

Application filed January 17, 1901. Serial No. 43,590. (No model.)

To all whom it may concern:

Be it known that we, RUDOLF HENRIK KJELLMAN, director, and GUSTAF LEANDER ANDERSSON, mechanic, subjects of the
5 King of Sweden and Norway, and residents of Handtverkaregatan 37, Stockholm, in the Kingdom of Sweden, have invented certain new and useful Improvements in Automatic Firearms, (for which we have filed applica-
10 tions for patent in Sweden the 27th day of September, 1900, under No. 1,592/00; in Norway the 19th day of October, 1900, under No. 13,082; in Denmark the 19th day of October, 1900, under No. 1,118; in Germany the 24th
15 day of October, 1900; in Austria the 22d day of October, 1900; in Hungary the 25th day of October, 1900, under No. 14,929; in Switzerland the 23d day of October, 1900, under No. 25,148; in France the 10th day of Novem-
20 ber, 1900, under No. 293,656; in Belgium the 27th day of October, 1900, under No. 121,018; in Italy the 9th day of December, 1900, under No. 15,921; in Finland the 16th day of November, 1900; in Spain the 13th day of No-
25 vember, 1900; in Russia the 6/19th day of November, 1900, under No. 12,508, and in Turkey the 22d day of November, 1900, under No. 501/472,) of which the following is a specification, reference being had therein to
30 the accompanying drawings.

This invention relates to improvements in automatic firearms with a view to providing a satisfactory means of guiding the cartridge while being pushed by the breech-bolt into
35 the bore of the barrel. As the firearm is self-loading and the movements necessary therefor being produced by the recoil are extremely rapid and as the cartridges are piled loosely on top of one another in the cartridge
40 box or magazine it is of great importance that the uppermost cartridge should be in its proper position when ready to be pushed forward by the breech-bolt for insertion into the barrel and that during the insertion it should
45 be supported from above, from below, and from the sides, so as not to deviate from its determined course. To accomplish this result, there are according to this invention arranged at the sides of the receiver yield-
50 ing lugs which are actuated by the frame in

which the receiver reciprocates and are made to occupy different positions, according to the position of the receiver in the frame, so as to form supports for the cartridges at certain moments, as will be more fully described be- 55 low.

Figure 1 shows the lock-section of the fire- arm viewed from one side, partly in section, on line *a b* of Fig. 4. Fig. 2 shows the fire- 60 arm viewed from above, partially in section, on line *c d* of Fig. 1. Fig. 3 shows the car- tridge-box in a vertical longitudinal section and some of the adjoining parts. Figs. 4, 5, and 6 are cross-sections on line *g h* of Fig. 1 with the cartridges shown in different posi- 65 tions.

In the frame 1 the receiver 2, owing to the recoil, recedes in firing and compresses the re- coil-spring 3, only to be immediately afterward returned into its former advanced position. 70 Figs. 1 and 2 show the receiver in its ad- vanced position, and Fig. 3 the same part in its rear position. In the said movement partake the barrel 4 and magazine 5, which are rigidly secured to the receiver 2. In the receiver, 75 about simultaneously with the movement mentioned, the breech-bolt 6 first slides rear- wardly into the position in Fig. 3, and then for- ward to the position in Figs. 1 and 2. This movement is effected by means of a lever 7 80 engaging with the breech-bolt and attached to the receiver, said lever being actuated by certain lugs in the frame as the receiver moves in the latter. This mechanism forms no essential part of our present invention, 85 and as it is known it will require no further description. On each side of the receiver, suitably to the magazine, is attached a spring 11, extending along the latter, the free rear end of said spring carrying a lug 12, project- 90 ing inward perpendicularly to the barrel and entering in an aperture in the wall of the mag- azine, (see Fig. 4,) and on its outer side bear- ing against the side of the frame. In the latter side, in the path described by the lug 95 12 in the motion of the receiver, are made two recesses, one, 13, in front of the other, 14. When the receiver 2 is occupying its forward position and the mechanism consequently is closed, the lugs 12 12 are situated opposite 100

the recesses 13, and being forced outward by the springs 11 occupy a withdrawn position, in which they do not project with their inner ends beyond the inside of the magazine, Fig.

2. When the receiver is in its rear position, Fig. 3, the lugs 12 12 are situated opposite the recesses 14, consequently occupying the same withdrawn position as just mentioned. If the receiver is in an intermediate position, where the lugs 12 12 are situated between the forward and rear recesses, the said lugs are forced inward toward the box 5 by the elevated portion of the wall of the frame between the said recesses. The lugs then protrude with their inner ends into the magazine, as shown in Fig. 6. The lugs 12 12, the outward-pointing ends of which are rounded, are located closely beneath the rib 16, by means of which the magazine 5 engages with a groove in the receiver, the lugs being thereby well guided.

The lugs 12 12 operate as follows: When the mechanism is closed, Figs. 1, 2, and 4, the motion of the cartridges is limited from above by the breech-bolt 6, against which the upper cartridge bears, Fig. 4. When immediately on a discharge the receiver 2 recedes, the lugs 12 12 enter into the box 5. The lug which happens to have the uppermost cartridge resting close to it (this being alternately the right and left lug, Fig. 4) forces said cartridge, and consequently all the cartridges, slightly downward, so that the breech-bolt receding immediately after the commencement of the rearward movement of the receiver can move freely without sliding against the uppermost cartridge. During the last portion of the rearward movement of the receiver the cartridges rise once more to the position in Fig. 4, owing to the lugs being brought opposite the recesses 14, the cartridges for a moment bearing upward against the breech-bolt. The breech-bolt continuing rearward to the position shown in Fig. 3, the cartridges will subsequently be moved upward by the carrier until the uppermost cartridge is brought with its forward end against the projection 15 at the inside of the magazine, while at the rear it bears against another projection 18, similar to that previously mentioned, 15, but situated at the rear end of the magazine. The uppermost cartridge now occupies such a level as to be partly in the path of the breech-bolt, Fig. 5, which consequently can push it forward. Immediately on the turning of the receiver and the commencement of its advancing movement the lugs 12 12 enter into the box 5. The uppermost cartridge being consequently subjected to a lateral pressure from the lug 12 is brought into such a position, while supported from below by the adjoining cartridge, that its point is directed obliquely upward toward the flaring mouth of the barrel. Owing to the lateral motion thus communicated to the cartridge the latter will be moved sufficiently inward

toward the middle of the box 5 to allow it to move upward past the projection 15. The cartridge next to the uppermost one, on the other hand, is kept depressed by the lug 12, situated at the same side of the box 5, forming, however, such a support for the upper cartridge as to compel the latter to ascend in the aforesaid movement. The breech-bolt 6, advancing at the next moment, pushes the upper cartridge into the barrel, as shown by dotted lines in Fig. 3. When the receiver has completed its forward movement, which in the next instant the breech-bolt will likewise have done, the lugs 12 will be moved aside into the recesses 13 and the cartridges will once more occupy the position shown in Fig. 4, though the upper left-hand cartridge will now be at the top. While being extracted the empty shell recedes above the projection 15 to be finally ejected from the receiver, which is open at the top. The greater length of the recess 14 as compared with the recess 13 is due to the receiver moving a slight distance forward before the breech-bolt advances in relation to the receiver and to the fact that during this period the lugs 12 12 should be inactive.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an automatic firearm, the combination with the barrel, the frame, the recoiling-receiver therein, the breech-bolt, and the magazine in and partaking of the recoiling movement of the receiver, of the yielding lugs on the sides of the receiver and engaging apertures in the magazine below the breech-bolt, the frame having recesses and elevations at its sides situated so as to act on said lugs and cause them to protrude more or less into the magazine, in the different positions of the receiver in the frame, substantially as and for the purposes set forth.

2. In an automatic firearm, the combination with the barrel, the frame, the recoiling-receiver therein, the breech-bolt, and the magazine in and partaking of the recoiling movement of the receiver, of the lugs 12, secured to the respective sides of the receiver by springs 11, the said springs tending to move said lugs laterally outward, and means carried by the frame for pressing said lugs inward through apertures in the magazine, said means being so positioned as to press in the said lugs at the moment when the uppermost cartridge in the magazine is about to be inserted in the barrel, substantially as set forth.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

RUDOLF HENRIK KJELLMAN.
GUSTAF LEANDER ANDERSSON.

Witnesses:

ERNST SVANGVIST,
AUG. SORENSEN.