K. A. BRÄUNING.

ROTARY MAGAZINE.

APPLICATION FILED DEC. 30, 1915.

1,281,497.

Patented Oct. 15, 1918.

2 SHEETS—SHEET 1.

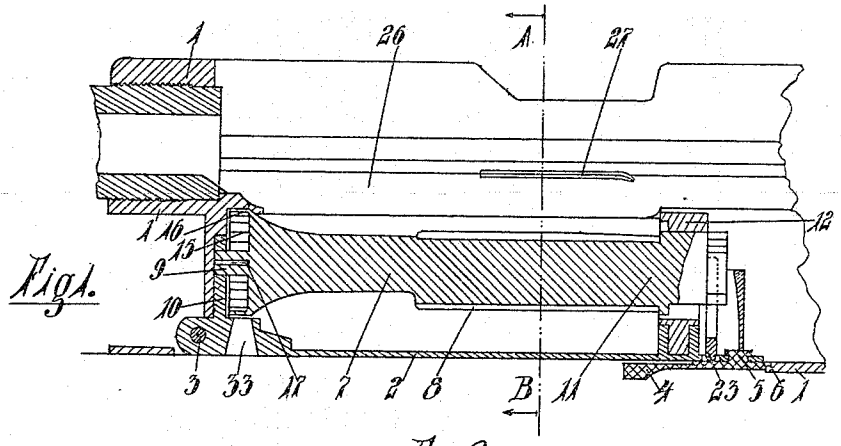


Fig 1.

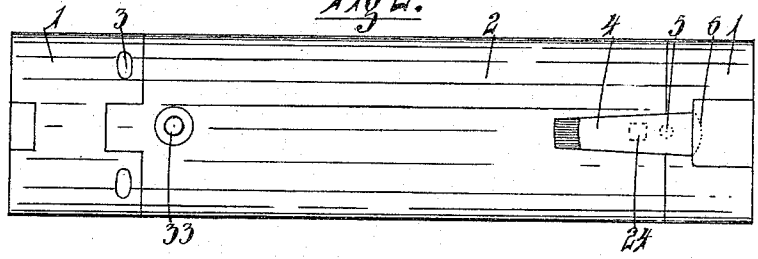


Fig 2.

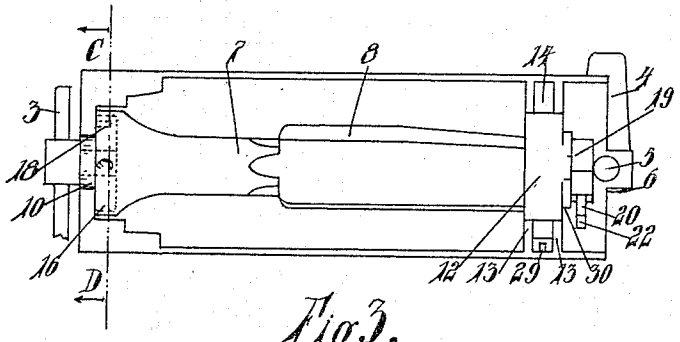


Fig 3.

Karl August Bräuning
Inventor

by Lawrence Langner
Attorney

K. A. BRÄUNING.

ROTARY MAGAZINE.

APPLICATION FILED DEC. 30, 1915.

1,281,497.

Patented Oct. 15, 1918.

2 SHEETS—SHEET 2.

Fig 5.

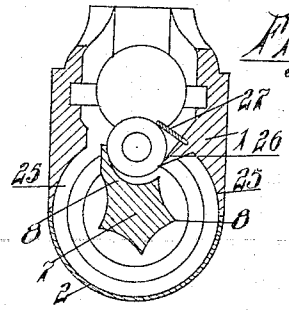


Fig 6.

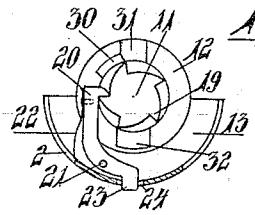


Fig 8.

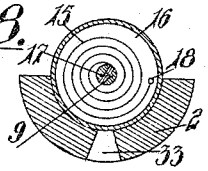


Fig 7.

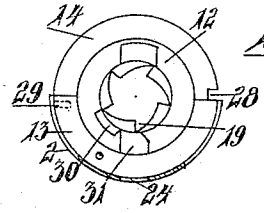


Fig 9.

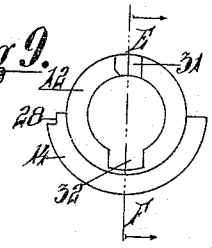


Fig 10.

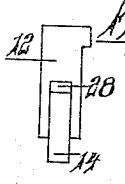
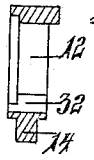


Fig 11.



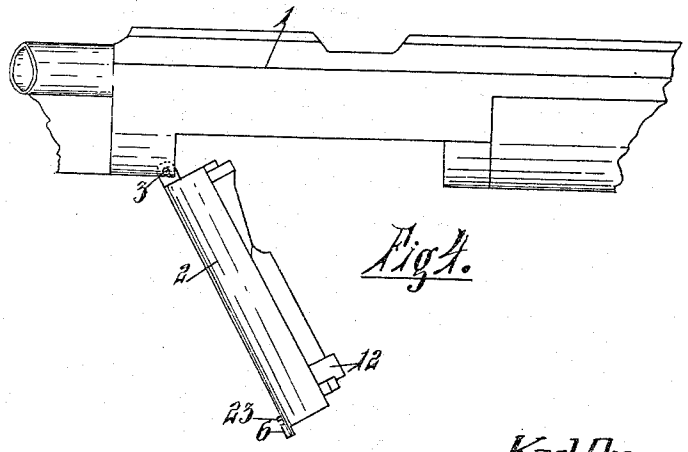


Fig 4.

Karl August Bräuning
Inventor

by Lawrence Langner
Attorney

UNITED STATES PATENT OFFICE.

KARL AUGUST BRÄUNING, OF HERSTAL, BELGIUM.

ROTARY MAGAZINE.

1,281,497. Specification of Letters Patent. Patented Oct. 15, 1918.

Application filed December 30, 1915. Serial No. 69,439.

To all whom it may concern:

Be it known that I, KARL AUGUST BRÄUNING, engineer, resident of Herstal, Belgium, 510 Rue Hayenneus, have invented certain new and useful Improvements in Rotary Magazines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked therein, which form a part of this specification.

This invention relates to a rotary magazine arranged at the lower part of the breech-frame in automatic or other small arms, and comprising a horizontal drum rotating under the action of a spring in a cylindrical housing of the breech-frame, said rotary drum being provided with longitudinal grooves, the number of which is equal to the number of the cartridges to be contained in the magazine. In the known devices, the rotary magazine can only be filled through the opening at the upper part of the breech-frame, after the breech has been previously opened. Such a device has inconveniences when it is desired to fill up the magazine when all the cartridges it contained have not been fired. In this case, indeed, the opening movement of the movable breech block causes the ejection of the cartridge that was in the chamber of the barrel and ready for firing; further the opening of the breech during the filling of the magazine has the inconvenience of leaving the shooter completely disarmed during this operation.

These inconveniences are avoided in the device of my invention because it makes use of a rotary magazine which can be filled through the upper opening of the breech-frame as in the known devices but which can besides be rendered accessible without its being necessary to open the breech block. To this end, the lower part of the cylindrical housing forming the wall of the magazine is rendered movable with respect to the breech-frame and provided with bearings in which the rotary drum is pivotally mounted.

The invention further relates to the use of a spring-catch operated in such a manner by the device fixing the magazine to the gun, that the mazagine spring is prevented from becoming unwound when the magazine is displaced during the filling operation.

The invention further relates to the use of a ring for securing the drum to the movable magazine and at the same time for keeping the initial tension of the magazine spring.

The drawings show a preferred embodiment of the invention in the case of a movable magazine for five cartridges pivoted at the front part of the breech-frame.

Figure 1 is a vertical longitudinal section in the breech-frame and magazine, the breech being opened and the breech block not shown.

Fig. 2 is a view of the breech-frame and magazine seen from below.

Fig. 3 is a view of the magazine alone, seen from above.

Fig. 4 is a partial side view of the gun during the filling up of the magazine under the breech-frame.

Fig. 5 is a section on the line A—B of Fig. 1.

Fig. 6 is an elevation of the magazine alone seen from behind.

Fig. 7 is an elevation similar to that shown in Fig. 6, the parts being in another position.

Fig. 8 is a section on the line C—D of Fig. 3.

Fig. 9 is a front view of the fixing-ring of the drum.

Fig. 10 is a corresponding side view.

Fig. 11 is a section on the line E—F of Fig. 9.

The breech-frame 1 comprises a lower movable portion 2, in the shape of a half cylinder, which constitutes the movable magazine. Its front end is pivotally mounted, by means of a joint-pin 3, on the breech-frame 1; its rear end is secured to the breech-frame by means of a rotary lever 4 rotating on a pivot 5, the end 6 of which lever enters into a groove of the wall of the breech-frame.

Within the movable magazine is arranged the rotary drum 7 having the shape of a cylinder provided with five longitudinal grooves separated from each other by longitudinal fins 8 and intended to receive the cartridges. For the purpose of supporting the front end of the drum 7, its axle 9 is arranged in a cylindrical hole or bearing of the front wall 10 of the magazine; the

cylindrical rear end 11 is supported by means of a ring 12, the semi-circular leaf 14 of which is held, by means of a device hereafter described, between two annular ribs 13 formed on the internal face of the magazine wall.

The drum is also provided with a magazine spiral-spring 15 which is arranged in a cylindrical housing 16, one end of said spring being secured in a notch 17 of the axle 9 while the other end is formed in the shape of an eyelet and slipped on a pin 18 secured to the wall 10.

Five teeth 19 are cut in the cylindrical end 11 of the drum to form a ratchet-wheel. A spring-catch 20 pivotally mounted at 21 on the rib 13 is urged by its spring 22 in such a manner as to come into contact with the teeth 19 when the end of its arm 23 is allowed to go freely through the hole 24 of the wall of the rotary magazine.

The magazine is completed by cylindrical walls 25 formed in the breech-frame.

When the magazine is shut and the movable breech block opened, it is possible to put cartridges into the magazine through the breech opening; Fig. 5 shows the first cartridge placed in the magazine; the action of the magazine spring 15 urges said cartridge to slide upward along the inclined plane 26 but it is prevented therefrom by a spring stop-plate 27 and held in such a position that it lies on the path of the movable breech-block. The other cartridges can thereafter be laid successively one upon the other and forced downward into the magazine by the action of the thumb; the effect of this movement is to cause the drum 7 to rotate and the spring 15 to be completely wound.

During these operations, as when the gun is handled for shooting, the tension of spring 15 is always kept by the last cartridge coming into contact with the stop-plate 27.

When it is desired to again fill the magazine before the same has been completely emptied and without opening the movable breech, it is only necessary to turn the lever 4 so as to free the end 6 of said lever; it is then possible to cause the movable magazine 2 to turn into the position shown in Fig. 4. When turning on its pivot, the lever 4 has uncovered the passage through the hole 24 so that the end 23 of catch 20 passes now freely through said hole. The catch 20 is consequently brought into working contact with the teeth 19 and prevents the spring 15 from coming unwound; it is then possible to again fill the magazine and to wind at the same time the spring 15, while the catch 20 holds the drum 7 motionless every time when the latter has performed a rotation of $\frac{1}{5}$ of one revolution. The fifth longitudinal groove of the drum must be let free, as in the most usual case there is already a cartridge in the chamber of the barrel.

The magazine is then shut again and secured to the breech-frame by means of the lever 4; this causes the arm 23 of catch 20 to again enter into the magazine; the ratchet wheel 19 is then completely freed from the catch 20 so that the spring 15 is allowed to perform the rotation of the drum when the movable breech has caused a cartridge to get out of the magazine.

The device used for securing the drum to the movable magazine comprises a ring 12 provided with a semicircular leaf 14 formed with an indentation 28 to which corresponds a fixed pin 29 projecting radially in the interval between the two annular ribs 13.

When the magazine must be taken to pieces, the catch 20 is first withdrawn, its pivot being only slidably mounted in a suitable hole in the rib 13.

When the pieces are in the position shown in Fig. 6, the magazine being empty, the initial tension of spring 15 urges the drum 7 to rotate in a clockwise direction; the projecting part 30 of the end of the drum pushes against the projecting part 31 of the ring 12 and tends to cause the ring to rotate in the same direction, but such a rotation is rendered impossible by the leaf 14 of the ring coming in contact with the fixed pin 29. The contact of those two pieces has consequently as result both to hold the ring in the position required and to keep the initial tension of spring 15.

For the purpose of dismounting the magazine, the drum is first caused to rotate against the action of spring 15 in a counter-clockwise direction until the projecting part 30 comes in contact with the right hand face of the projecting part 31 (it being assumed that the pieces are seen from behind as in Fig. 6); the drum is then caused to make further half a revolution so that the pieces are brought into the position shown in Fig. 7. The drum is then released in such a manner that the spring 15 is allowed to unwind slightly until the projecting part 30 comes before a notch 32 of the ring. It is then possible to withdraw the ring by causing it to slide in a direction parallel to the axis of the drum, and afterward to cause the drum to slide in the same direction, during which movement the eyelet of spring 15 parts from the pin 18.

When setting the pieces again in working position, the drum is first laid in the magazine with its axle 9 in the bearing of wall 10 and the spring 15 secured to the pin 13; the drum is then caused to make a little more than a revolution, so as to bring the projection part 30 in such a position that ring 12, held with its leaf 14 upward as in Fig. 7, can be slid onto the cylindrical portion 11; the pieces are then released and by the action

of the spring 15 they reassume the required position.

For the purpose of showing at any moment the number of cartridges remaining in the magazine, figures may be engraved on the outer wall of the housing 16 of the magazine spring. These numerals are seen through an opening 33 in the wall of the movable magazine.

Having thus described my invention, I claim:

1. In a magazine for small arms, the combination with the breech frame of an extension thereof, constituting the stationary upper part of the magazine, a breech block, a lower movable magazine part contiguous to the upper stationary magazine part, and adapted to receive cartridges, bearings secured to said movable magazine part, a grooved drum having its axle supported on said bearings, lateral ribs provided on one end of the movable magazine part and extending upwardly and terminating slightly below the axis of rotation of the grooved drum, a spring for rotating said drum, so as to feed the cartridges contained in said magazine parts, means for securing the movable magazine part to the breech-frame, and means for enabling the movable magazine part to be easily displaced, with respect to the upper stationary magazine part, so as to allow the reloading of the movable magazine part without opening the movable breech-block.

2. In a magazine for small arms, the combination with a breech-frame of an extension thereof, constituting the upper stationary part of the magazine, a breech-block, a lower movable magazine part contiguous to the upper stationary magazine part and adapted to receive cartridges, an opening in the front wall of the movable magazine part, a ring supported at the rear end of the movable magazine part, a grooved drum having the front end of its axle resting in said opening, in the front wall of the movable magazine part, the rear end of the axle of said drum being supported by said ring, means for supporting said ring at the rear end of the movable magazine part, a spring for rotating the drum, means for preventing rotation of said ring, means for preventing the spring from unwinding while the movable magazine part is being loaded, means for securing said movable magazine part to the breech frame, and means for enabling the movable magazine part to be easily displaced, with respect to the upper stationary magazine part, so as to allow the reloading of the movable magazine part without opening the movable breech-block.

3. In a magazine for small arms, the combination with the breech-frame of an extension thereof, constituting the upper stationary part of the magazine, a breech-block, a lower movable magazine part, contiguous to the upper stationary, magazine part, and adapted to receive cartridges, a bearing in the front wall of the movable magazine part, two semi-circular ribs provided at the rear end of the movable magazine part, a ring resting on said ribs, a semi-circular leaf secured to said ring and provided with an indentation, a pin projecting between the semi-circular ribs and adapted to engage in the indentation of said semi-circular leaf, and to thereby prevent the aforesaid ring from rotating, a grooved drum, a spring for rotating the drum, a pawl for preventing the spring from unwinding, while the movable magazine part is being loaded, means for enabling the movable magazine to be easily displaced, with respect to the upper stationary magazine part, so as to allow the reloading of the movable magazine part without opening the movable breech-block, and means for securing the movable magazine part to the breech-frame.

4. In a magazine for small arms the combination, with the breech-frame of an extension thereof, constituting the upper stationary part of the magazine, a breech-block, a lower movable part contiguous to the upper stationary magazine part and adapted to receive cartridges, an opening or bearing on the front wall of the movable magazine part, two semi-circular ribs provided at the rear end of the movable magazine part, a ring resting on said ribs, a semi-circular leaf secured to said ring and provided with an indentation, a pin projecting between the semi-circular ribs and adapted to engage in the indentation of said semi-circular leaf, and thereby prevent the aforesaid ring from rotating, a grooved drum, a spring for rotating the drum, a ratchet wheel formed at the rear end of the axle of said drum, a spring catch pivotally mounted in the movable magazine part, and adapted to engage with said ratchet wheel, so as to prevent the aforesaid spring from unwinding while the movable magazine part is being loaded, means for enabling the movable magazine part, to be easily displaced with respect to the upper stationary magazine part, so as to allow the reloading of the movable magazine part without opening the movable breech-block, and a lever for securing the lower movable magazine part to the upper stationary magazine part.

5. In a magazine for small arms, the combination with the breech-frame of an extension thereof, constituting the upper stationary part of the magazine, a breech-block, a lower movable magazine part adapted to receive cartridges, a bearing in the front wall of the movable magazine part, two semi-circular ribs provided at the rear end of the movable magazine part, a ring resting on

said ribs, a semi-circular leaf secured to said ring and provided with an indentation, a pin projecting between the two semi-circular ribs, and adapted to engage in the indentation of said semi-circular leaf, and thereby, prevent the aforesaid ring from rotating, a grooved drum having one end of its axle resting on the bearing in the front wall of the movable magazine part, the other end of its axle being supported by the aforesaid ring, a spring for rotating said drum, a ratchet wheel formed at the rear end of the axle of said drum, a spring catch pivotally mounted on the movable magazine part, and adapted to come in contact with said ratchet wheel, so as to prevent the aforesaid spring from unwinding while the movable magazine part is being loaded, a rotary lever pivotally mounted on the movable magazine part, a recess in the rear wall of the breech-frame for receiving said rotary lever, thereby securing the movable magazine part to the breech-frame, a joint-pin in the front wall of the breech-frame, said pin serving as a pivot for the lower movable magazine part.

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

KARL AUGUST BRÄUNING.

Witnesses:

GEORGES VANDER HAEGLEN,

HENRI JOYEUX.