C. A. TUNKS.

MAGAZINE.

APPLICATION FILED APR. 12, 1920.

1,349,350. Patented Aug. 10, 1920.

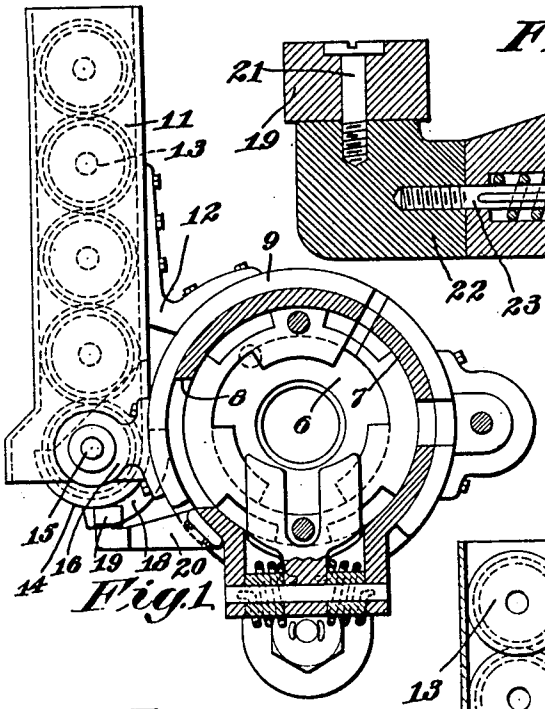


Fig. 1.

Fig. 5.

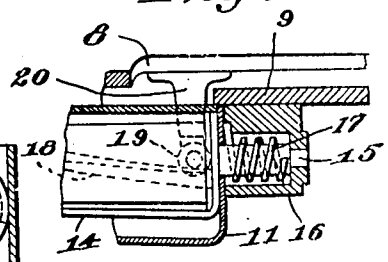


Fig. 4.

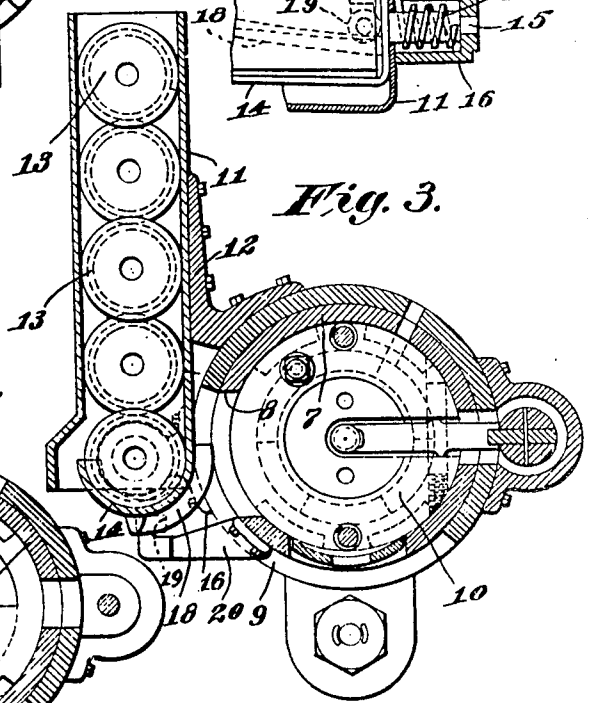


Fig. 3.

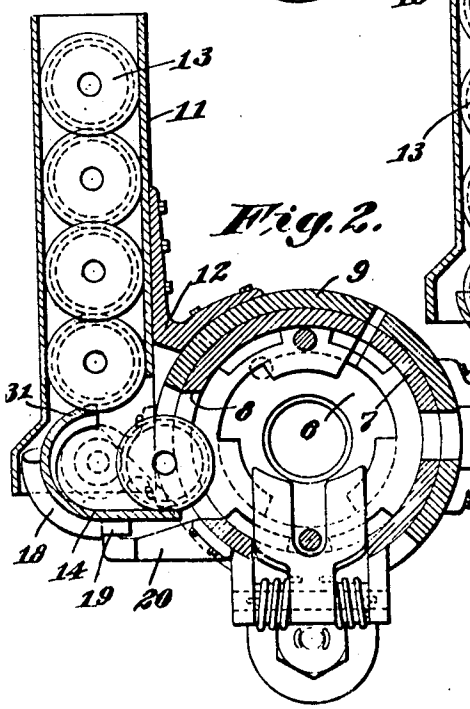


Fig. 2.

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UNITED STATES PATENT OFFICE.

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MAGAZINE.

1,349,350. Specification of Letters Patent. Patented Aug. 10, 1920.

Application filed April 12, 1920. Serial No. 373,165.

To all whom it may concern:

Be it known that I, CHARLES A. TUNKS, a citizen of the United States, and resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Magazines, of which the following is a specification.

This invention relates to an improved magazine for use with ordnance which is particularly adapted for use with guns which are automatic or semi-automatic in action.

My magazine is independent of the particular form of the gun to which it is attached and is so constructed as to positively deliver ammunition, one cartridge at a time, the power being preferably supplied by the movement of some part of the gun which reciprocates under the recoil stresses of discharge. The cartridge feed in my magazine as shown herein, is due to gravity, the device having a hinged closure at the lower end, the closure being actuated by a reciprocating member carried by some portion of the gun or carriage.

It is an object of my invention to provide a magazine which is simple in construction and positive in its operation, which depends upon gravity rather than mechanical means to effect the cartridge feed and which requires but a small amount of power for its operation. It is an object to provide a magazine which may be readily adapted to various types of guns without modification of the gun structure. Other and further objects will appear as the description proceeds.

My invention broadly involves a magazine adapted to be attached to some fixed portion of the gun or carriage adjacent the breech, the magazine having a closure adapted to be swung open by the action of a member preferably attached to a part of the gun or carriage which reciprocates under the stress of discharge.

In the present application I have shown and described a specific embodiment involving these features, the magazine being attached to the fixed shield of the gun and the actuating lug carried by the receiver which reciprocates with the barrel after each discharge. In order to make clear the manner of operation of my device I have shown it attached to the breech of a gun of the type disclosed in the application of Leslie D. Fisher, Serial No. 369,325, filed March 27, 1920, the gun forming no part of the present invention.

In the preferred form shown in the drawings—

Figure 1 is a view from the rear showing the magazine mounted upon a gun, the gun being in the recoil position and shown partly in cross section;

Fig. 2 is a view similar to Fig. 1 but showing the magazine in section and the gun part of the way forward;

Fig. 3 is a view similar to Fig. 2 but showing the gun in the forward position with the breech closed;

Fig. 4 is a plan view partly broken away of the magazine and the adjacent portion of the gun; and

Fig. 5 is a cross section showing the construction of the actuating lug.

The gun shown in the drawings, but forming no part of the present invention, comprises the barrel 6, receiver 7, having the loading opening 8 therein, the fixed guard member 9, and breech closure 10.

My improved magazine comprises the main housing member 11 which is supported on the fixed guide 9 of the gun by the bracket 12, the housing being adapted to receive the cartridges or fixed ammunition 13 in single series as shown. The closure member 14 located at the lower end of the magazine has pivot lugs 15 at its ends supported by the brackets 16 also attached to the fixed guide member 9. Spiral torsion springs 17 surround these pivot lugs 15 and are adjusted to maintain the closure normally in the position shown in Figs. 1 and 3.

The lower surface of the closure 14 carries the spiral cam guide 18 which is adapted to coact with the cam roll 19 supported by the bracket 20 which is attached to the receiver 7. This bracket is shown in detail in Fig. 5. The roller 19 turns on the pin 21 and is supported directly on the elbow 22. The plunger 23 has the feather 24 to prevent rotation and is surrounded by the spring 25, one end bearing on the nut 26 and the other end against the base of its cavity in the member 20.

In the operation cycle of my magazine the position shown in Fig. 3 may be considered normal, the magazine closure 14 being in the closed position and the cam roll being

at the forward end of its path, slightly beyond the end of the cam guide 18. When the gun barrel and receiver recoil due to firing the piece the lug 20 and roll 19 move with them, the roll being out of contact with the cam guide 18 until adjacent the end when it contacts with the outer side of the guide and the roll is moved outward against the spring 25. As the roll passes the end of the guide 18 it is returned to its normal position as shown in Figs. 1 and 5 by the spring 25. During the forward or counter recoil movement of the barrel the cam roll 19 moves forward in contact with the inner side of the cam guide 18 and thereby rotates the closure against the springs 17 to the position shown in Fig. 2 when the lowermost cartridge is thrown into the receiver through the opening 8. The edge 31 of the closure contacts with the next cartridge and prevents its following the lowermost one. The cam roll passes on beyond the end of the guide 18 to its position as shown in Fig. 3 and the closure 14 is immediately returned to its normal closed position by the springs 17.

While I have shown my magazine as placed to one side of the receiver of the piece it may obviously be placed at an angle or substantially above the receiver. The magazine is independent of the type of gun with which it is to be used, simply requiring one member to be attached to a fixed part and the other to a moving part. The actuating lug and magazine proper may be interchanged in this regard without modification. The cam guide 18 may be made of a pitch to correspond to the length and speed of the movement of the gun to which it is attached and the guide and cam will be so related as to cause the magazine to discharge a cartridge at the desired point in the cycle of operation of the gun to which it is attached.

I claim:

1. In combination with a gun having fixed and reciprocating parts, a magazine adapted to contain cartridges attached to the fixed parts, the magazine having a closure at the bottom thereof, the closure having a cam guide thereon, an actuating lug attached to the reciprocating part, and coacting with the cam guide to move the magazine closure to release the lowermost cartridge during the movement of the reciprocating part of the gun, and means to return the closure to the closed position.

2. In combination with a gun having fixed and reciprocating parts, a magazine adapted to contain cartridges attached to the fixed parts, the magazine having a closure at the bottom thereof, the closure having a cam guide thereon, an actuating lug attached to the reciprocating part, and coacting with the cam guide to move the magazine closure about the lowermost cartridge during the movement of the reciprocating part of the gun, and a torsion spring associated with the magazine closure and adapted to return it to the closed position.

3. In combination with a gun having fixed and reciprocating parts, a magazine adapted to contain cartridges attached to the fixed part, the magazine having a rotating closure at the bottom thereof, the closure having a cam guide thereon, an actuating lug attached to the reciprocating part, and coacting with the cam guide to rotate the closure to open position about the axis of the lowermost cartridge during the movement of the reciprocating part of the gun.

4. In combination with a gun having fixed and reciprocating parts, a magazine adapted to contain cartridges attached to the fixed part, the magazine having a rotating closure at the bottom thereof, the closure having a cam guide thereon, an actuating lug attached to the reciprocating part, and coacting with the cam guide to rotate the closure to open position about the axis of the lowermost cartridge during the movement of the reciprocating part of the gun, and to thereby deliver one cartridge to the gun, a portion of the closure preventing delivery of the remaining cartridges.

5. A magazine for guns comprising a housing member adapted to receive the cartridges, a supporting bracket for said housing adapted to be attached to the fixed part of a gun, a rotatable closure for the magazine having its ends pivoted to the housing member, torsion springs surrounding the pivots and adapted to maintain the closure normally in closed position, a spiral cam guide on the outer surface of said closure and a cam roll supported by a bracket adapted to be attached to a moving part of a gun, the cam roll and cam guide being so associated that the closure is opened by the movement of the moving part of the gun.

6. A magazine for guns comprising a housing member adapted to receive the cartridges, a supporting bracket for said housing adapted to be attached to the fixed part of a gun, a rotatable closure for the magazine having its ends pivoted to the housing member, torsion springs surrounding the pivots and adapted to maintain the closure normally in closed position, a spiral cam guide on the outer surface of said closure and a cam roll supported by a bracket adapted to be attached to a moving part of a gun, the cam roll and cam guide being so associated that the closure is rotated substantially a quarter circle and the lowermost cartridge delivered laterally to the gun.

7. A magazine for guns comprising a housing member adapted to receive the cartridges, a supporting bracket for said housing adapted to be attached to the fixed part of a gun, a rotatable closure for the maga-

zine having its ends pivoted to the housing member, torsion springs surrounding the pivots and adapted to maintain the closure normally in closed position, a spiral cam guide on the outer surface of said closure and a cam roll supported by a bracket adapted to be attached to a moving part of a gun, the cam roll and cam guide being so associated that the closure is rotated substantially a quarter circle and the lowermost cartridge delivered laterally to the gun, a portion of the closure being carried by the rotation into contact with the next cartridge to prevent its following the lowermost cartridge.

8. In combination with a gun having fixed and reciprocating parts, a magazine adapted to contain cartridges attached to the fixed part, the magazine having a rotating closure at the bottom thereof, the closure having a cam guide thereon, an actuating lug attached to the reciprocating part, and coacting with the cam guide to rotate the closure about the axis of the lowermost cartridge to open position during the counter recoil movement of the reciprocating part of the gun.

9. In combination with a gun having fixed and reciprocating parts, a magazine adapted to contain cartridges attached to the fixed part, the magazine having a closure at the bottom thereof, the closure having a cam guide thereon, an actuating lug attached to the reciprocating part, and coacting with the cam guide to open the magazine during the movement of the reciprocating part of the gun, the lug being normally out of contact with the guide, passing on one side of the guide during movement in one direction, and contacting with the other side of the guide during the movement in the opposite direction.

10. In combination with a gun having fixed and reciprocating parts, a magazine adapted to contain cartridges attached to the fixed part, the magazine having a rotating closure at the bottom thereof, the closure having a cam guide thereon, an actuating lug attached to the reciprocating part, and coacting with the cam guide to rotate the closure to open position during the movement of the reciprocating part of the gun, the lug being normally out of engagement with the guide, passing outside the guide during recoil of the guide and contacting with the inner side of the guide during counter recoil.

11. A magazine for guns comprising a housing member adapted to receive the cartridges, a supporting bracket for said housing adapted to be attached to the fixed part of a gun, a rotatable closure for the magazine having its ends pivoted to the housing member, torsion springs surrounding the pivots and adapted to maintain the closure normally in closed position, a spiral cam guide on the outer surface of said closure and a cam roll yieldably supported by a bracket adapted to be attached to a moving part of a gun, the cam roll and cam guide being so associated that the closure is opened by the movement of the moving part of the gun in one direction, the cam roll yieldably passing the guide during movement in the opposite direction.

12. A magazine for guns comprising a housing member adapted to receive the cartridges, a supporting bracket for said housing adapted to be attached to the fixed part of a gun, a rotatable closure for the magazine having its ends pivoted to the housing member, torsion springs surrounding the pivots and adapted to maintain the closure normally in closed position, a spiral cam guide on the outer surface of said closure and a cam roll yieldably supported by a bracket adapted to be attached to a moving part of a gun, the cam roll and cam guide being so associated that the closure is rotated substantially a quarter circle by contact between the cam roll and cam during movement of the moving part in one direction and the cam roll yieldably contacts with the cam during movement in the opposite direction.

13. A magazine for guns comprising a housing member adapted to receive the cartridges, a supporting bracket for said housing adapted to be attached to the fixed part of a gun, a rotatable closure for the magazine having its ends pivoted to the housing member, torsion springs surrounding the pivots and adapted to maintain the closure normally in closed position, a spiral cam guide on the outer surface of said closure and a cam roll yieldably supported by a bracket adapted to be attached to a moving part of a gun, the cam roll and cam guide being so associated that the closure is rotated substantially a quarter circle and the lowermost cartridge delivered laterally to the gun by non-yielding contact between the cam roll and cam during counter recoil of the gun, the cam roll yieldably passing the cam during recoil.

Signed by me at Cleveland, Ohio, this 7th day of April 1920.

CHARLES A. TUNKS.