Nov. 6, 1945. G. IRONSIDE 2,388,413

MAGAZINE FOR AUTOMATIC FIREARMS

Filed Oct. 20, 1941 2 Sheets-Sheet 1

Fig. 5

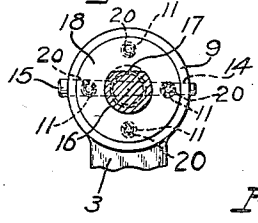


Fig. 4

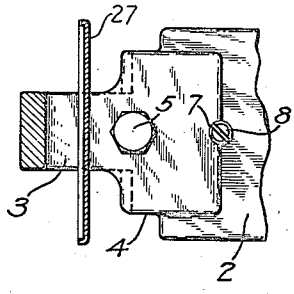


Fig. 1

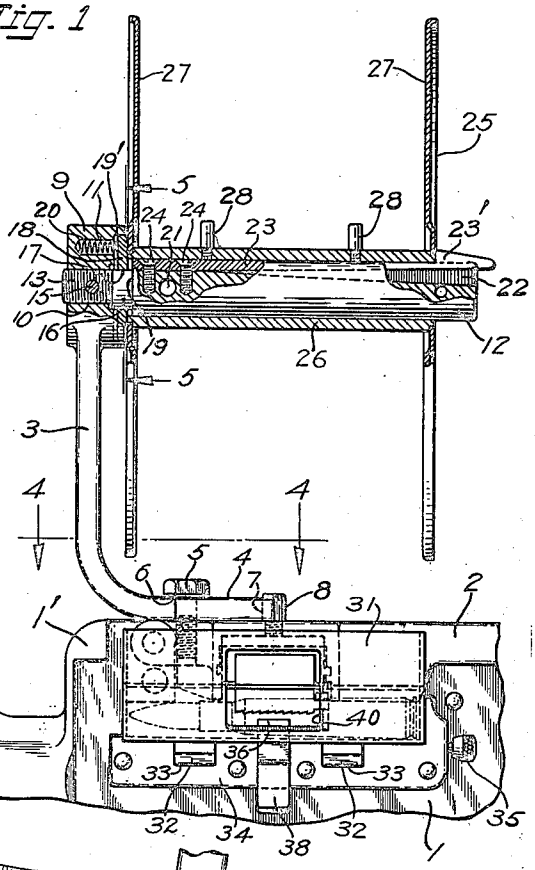
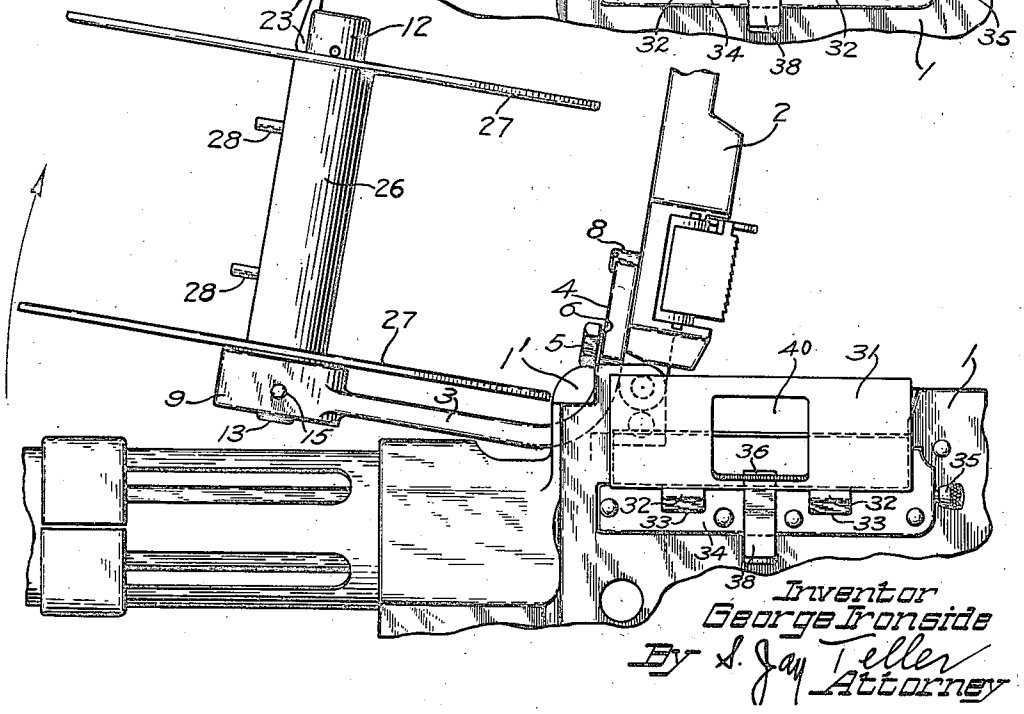


Fig. 2



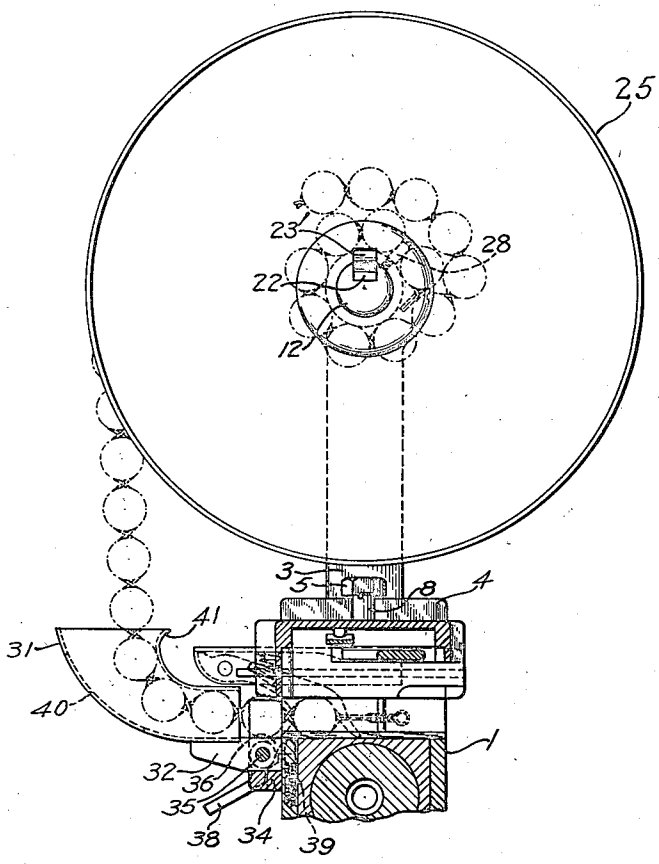
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Fig. 3



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MAGAZINE FOR AUTOMATIC FIREARMS

George Ironside, Hartford, Conn., assignor to Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn., a corporation of Connecticut

Application October 20, 1941, Serial No. 415,758

1 Claim. (Cl. 89—34)

This invention relates to a magazine or ammunition holder for automatic firearms and more particularly for machine guns.

One object of the invention is to provide a sturdy, simplified, space-conserving magazine for holding a belt of ammunition on a firearm.

Another object of the invention is to provide a support for the magazine which can be quickly attached to and detached from the machine gun with a minimum of manipulation.

A still further object of the invention is to provide a magazine having a rotatable reel or drum to hold the ammunition belt and means for preventing overrunning of the reel or drum while the ammunition belt is being fed from the same to the machine gun.

Further objects of the invention are to provide certain improved details of construction and mounting such as will be clear from the following specification and claims.

The accompanying drawings show the embodiment of the invention which is deemed preferable, but it will be understood that the drawings are intended for illustrative purposes only and are not to be construed as defining or limiting the scope of the invention, the claims forming a part of this specification being relied upon for that purpose.

In the drawings:

Figure 1 is a side elevation, partly in section, of my construction;

Fig. 2 is another side elevation showing some of the parts in a different position;

Fig. 3 is a front elevation of the ammunition holder attached to the gun, the gun being partly in section;

Fig. 4 is a plan view partly in section taken on the line 4—4 of Fig. 1; and

Fig. 5 is an elevation, partly in section, on the line 5—5 of Fig. 1.

In view of the limited working space in certain military equipment such as tanks or armored cars, the use therein of conventional, previously designed magazines for machine guns has resulted in awkward conditions wherein either the loading of the magazine is difficult if at all possible, or far too much of the mechanism has to be disassembled should the gun, for instance, jam and the cover plate or other necessary parts of a machine gun have to be removed in order to expose vital parts of the gun to permit working on the same.

The present invention provides a simplified mounting for a magazine having an ammunition holder employing a reel or drum, the magazine being supported on the cover plate of a machine gun of the Browning type, such as illustrated, for example, in U. S. Patent 1,293,021. The reel is supported for ready rotation above the breech casing of said gun and the design is such that the belt of ammunition is held on the reel in alignment with the feed channel in the breech of the gun so that substantially no distortion or twisting of the belt takes place while the same is being fed to the feed chanel of the gun. In addition to this, the reel may be quickly mounted on a pintle supporting the same and, similarly, the reel may be quickly detached from said pintle. Overrunning of the reel is prevented by suitable braking means.

Furthermore, no parts of the magazine have to be dismounted from the cover plate should the latter have to be raised to expose some of the vital parts of the gun.

In the drawings, sufficient of an automatic firearm of the Browning machine gun type, including the belt feeding mechanism of the breech casing, has been illustrated at 1 to satisfactorily describe the instant invention. This illustration is, of course, by way of example only since the present invention is also useful on other types of automatic firearms. The hinged cover plate 2 supports a bracket 3 which has a portion in the nature of a relatively narrow post or arm extending substantially vertically upward when the firearm is in horizontal position. The bracket 3 is provided with a planar footed portion or base 4 directly attachable to the plate 2 by means of a threaded bolt or screw 5 which passes through a suitable aperture in the footed portion to securely bolt the bracket to the cover plate. Preferably a lock washer 6 is placed between the head of the bolt and the footed portion. In one end of the footed portion a substantially semicircular notch or recess 7 is provided to receive a part of a cylindrical pin 8 which is threadably secured to the cover plate, in order that the bracket 3 may be properly aligned with respect to the cover plate. In effect, the alignment thus afforded is the same as that of a pair of headed screws or bolts, yet the manipulation of only one bolt is necessary to attach or detach the bracket to the cover plate.

The width of the post portion of bracket 3 is such that, when the cover plate carrying the bracket is pivoted to the position shown in Fig. 2, the post portion is readily accommodated between the upper, forward corners 1' of the trunnion block of the gun 1.

A boss 9 is formed on the upper end of bracket 3, the same being substantially circular in cross

section, as shown in Figs. 3 and 5. An aperture or bore 10, preferably threaded, extends centrally through the boss. Four evenly spaced, smaller bores 11 are formed in the boss about the central bore 10, see Fig. 5, the bores 11 not extending all the way through the boss.

Mounted in the boss 9 is a substantially cylindrical shaft or pintle 12, one end of which has a reduced threaded portion 13 received in the threaded bore 10 of the boss. After the pintle has been secured to the boss, a suitable aperture 14, preferably tapered, is drilled through the boss and pintle and a tapered pin 15 is secured in said aperture by a driving fit, for example.

The pintle 12 has another reduced portion 16 adjacent the threaded end 13, the diameter of 16 being greater than that of 13. One part of the reduced portion 16 is flattened as shown at 17, Fig. 5. Surrounding said reduced portion 16 is an annular brake shoe 18 having a central opening, the periphery of which closely fits the reduced portion of the pintle, including the flattened portion 17, whereby the brake shoe 18 is held substantially non-rotatable with respect to the pintle 12. The shoulder 19 on the pintle 12 adjacent the reduced portion 16 is placed to permit limited longitudinal movement of brake shoe 18 on the pintle but precludes the brake shoe 18 from coming entirely out of recess 19' formed in boss 9 to receive the brake shoe 18. The depth of recess 19' is sufficient to fully receive the brake shoe 18.

Mounted within the bores 11 and pressing against the inner face of the brake shoe 18 are small compression springs 20, as shown in Fig. 1, which urge the brake shoe in the direction of the free end of the pintle.

In the instant embodiment of the invention, a plurality of bores 11 and compression springs 20 have been illustrated to provide the means for urging the brake shoe in the direction of the free end of the pintle. It is to be understood that this illustration is in no way to be considered restrictive since the principles at present illustrated may be carried out by other means. A single coil spring to surround the reduced portion 16 of the pintle 12 and disposed between the brake shoe 17 and the base of the recess 19' may be used with equal facility. In this event, the recess 19 may have to be made deeper than as at present illustrated in Fig. 1.

For purposes of assembling the pintle 12 in the boss 9, a hole 21 is provided in said pintle to receive any kind of a suitable pin whereby the pintle may be rotated to thread the portion 13 into the boss, following which the pin may be removed.

The pintle 12 is also provided with a tapered spline 22 extending substantially parallel with the axis of the pintle. Mounted within said spline is a resilient tongue 23 which is secured to the pintle by suitable threaded screws or studs 24. Adjacent the outer end of the pintle, the tongue 23 is provided with a detent 23' having a tapered upper surface which detent is adapted to detachably secure a reel or drum 25 to the pintle 12. The outer end of the detent 23' extends beyond the outer end of pintle 12 to provide a finger engaging portion that is readily accessible when desired to depress the detent to remove a reel from the pintle. The outer end of the spline 22 is of sufficient depth to accommodate the full height of the detent when depressed into the spline against the action of tongue 23. By camming against the tapered upper surface of the detent, the reel hub depresses the same when mounting said reel on said pintle.

The reel 25 is preferably composed of a hub portion 26 to which are secured side flanges 27. The hub also has spaced upstanding studs 28 secured thereto which are for the purpose of engaging between two adjacent cartridges at one end of a belt of ammunition when the belt is being wound upon the drum, thus facilitating the winding of said belt. The space between the studs is sufficient to receive the cartridge belt per se therebetween.

The detent 23', being constantly urged upward by the resilient tongue 23, is sufficient to lock the reel on the pintle 12 during rotation of the reel while the same is being operated to feed cartridges to the firearm and said detent constitutes the only means holding the reel on the pintle 12.

The dimensions of the reel 25 and the placement of the detent 23' on the pintle 12 are such that when the drum is locked in position by the detent, the flange 27 of the reel adjacent the brake shoe 18 will bear against said brake shoe to the extent that the springs 20 will be compressed sufficiently to afford adequate frictional contact between the brake shoe 18 and said flange 27 of the reel to prevent overrunning of the reel while the same is feeding to the firearm.

In order that the feed of the belt of cartridges to the breech of the firearm may be facilitated, a feed chute 31 having a flared upward extending mouth to receive the cartridge belt is secured to the breech casing adjacent the feed channel which receives the cartridges. The outlet end of the feed chute, adjacent the feed chute, extends generally horizontally as best shown in Fig. 3.

The feed chute 31 is secured to the side of the breech casing by means of a plurality of spaced lugs 32 fixed to said feed chute, which lugs are received in suitable openings 33 arranged in a bracket 34 affixed to the side of the breech casing. The bracket and lugs are suitably bored to receive a securing pin 35. Said pin also serves as a pivotal mounting for the pawl 36. One end of said pawl extends upward into the cartridge opening in the breech to engage the ammunition belt and prevent backward movement of the same out of the feed chute. The pawl, at its outer end, is provided with a downward extending finger engaging portion 38 which may be readily manipulated to depress the pawl against the action of spring 39 and thus permit removal of the belt.

The outer side of the feed chute 31 is preferably provided with an aperture 40, best shown in Fig. 2, whereby the operator may engage the cartridge belt in any desirable way to guide and urge the front end of the belt on the reel into the breech of the firearm, particularly when mounting a new cartridge belt in firing position in the breech.

In the preferred embodiment of the invention, the side of the feed chute adjacent the breech is more acutely flared, as shown at 41, than the outer side of the feed chute in order to protect against any possible binding of the belt in feeding the same into the feed chute particularly when the belt is nearly exhausted and the diameter of belt winding on the reel is small.

Should the firearm jam or, if for any other reason, it is desired to lift the cover plate 2 to expose the breech of the firearm, the dimensions

of the reel and its supporting structure are such that the cover may be tilted about its mounting pivot as shown in Fig. 2 without first having to remove the reel from its mounting or the belt from the feed chute. Furthermore, the brake means will prevent the reel from unwinding in the position shown in Fig. 2 equally as readily as in Fig. 1.

The reel may be made in any desirable size; depending upon the number of rounds of ammunition to be supplied with each magazine. The design has been found to be especially adaptable to magazines holding between one hundred and one hundred and twenty-five rounds.

It will thus be seen that a compact, simplified, sturdy, and efficient magazine having a rotatable reel has been devised whereby the ammunition supply is mounted in an appropriate space above the breech of the firearm to afford the use of available space below the firearm for other purposes which is a distinct advantage particularly when the firearm is mounted in mechanized equipment in which available useful space is at a premium. Furthermore, no parts of the magazine have to be removed or dismounted in any way to permit access to the breech of the firearm. In addition to this, an exhausted reel may be quickly detached from the mounting means and a new one substituted therefor without the use of any tools or extra equipment of any kind. Still further, adequate braking means are provided to prevent overrunning of the reel either in the firing position or in the position where the cover plate has been opened to expose the breech. Also, supplementary guiding means for the belt have been provided adjacent the breech opening to facilitate proper feeding of the belt into the breech.

In the foregoing, terms describing position and direction such as vertical, horizontal, upper, lower, and the like, have been used with respect to the normal position of the firearm and magazine which is that position shown in Figs. 1 and 3 when the sheets of drawings are held vertically. Said descriptive terms are therefore to be considered in the same relative sense with respect to these figures, regardless of the position in which the firearm and magazine may be ultimately disposed.

While the invention has been illustrated and described in its preferred embodiment and has included certain details, it should be understood that the invention is not to be limited to the precise details herein illustrated and described since the same may be carried out in other ways, falling within the scope of the invention as claimed.

What I claim is:

An ammunition reel support comprising in combination, a bracket including a portion constructed to be directly attached to a firearm and a post projecting therefrom and terminating in an apertured boss, said boss having an annular recess extending inward from one face and around said aperture, a substantially cylindrical pintle secured at one end within the aperture of said boss and adapted to rotatably support said ammunition reel, a portion of said pintle adjacent said boss being reduced in diameter to provide an annular shoulder spaced from said boss, an apertured disc comprising a brake shoe slidably and nonrotatably mounted on said reduced portion of said pintle and at least partially within said annular recess and constructed to frictionally engage said ammunition reel, the inner wall of said annular recess and said shoulder respectively limiting the slidable movement of said brake shoe in opposite directions, means within said annular recess and normally biasing said brake shoe toward said shoulder, and means carried by said pintle and constructed to engage said reel when mounted on said pintle to detachably maintain said reel in operative position on said pintle.

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