

Jan. 2, 1945.

J. C. TROTTER

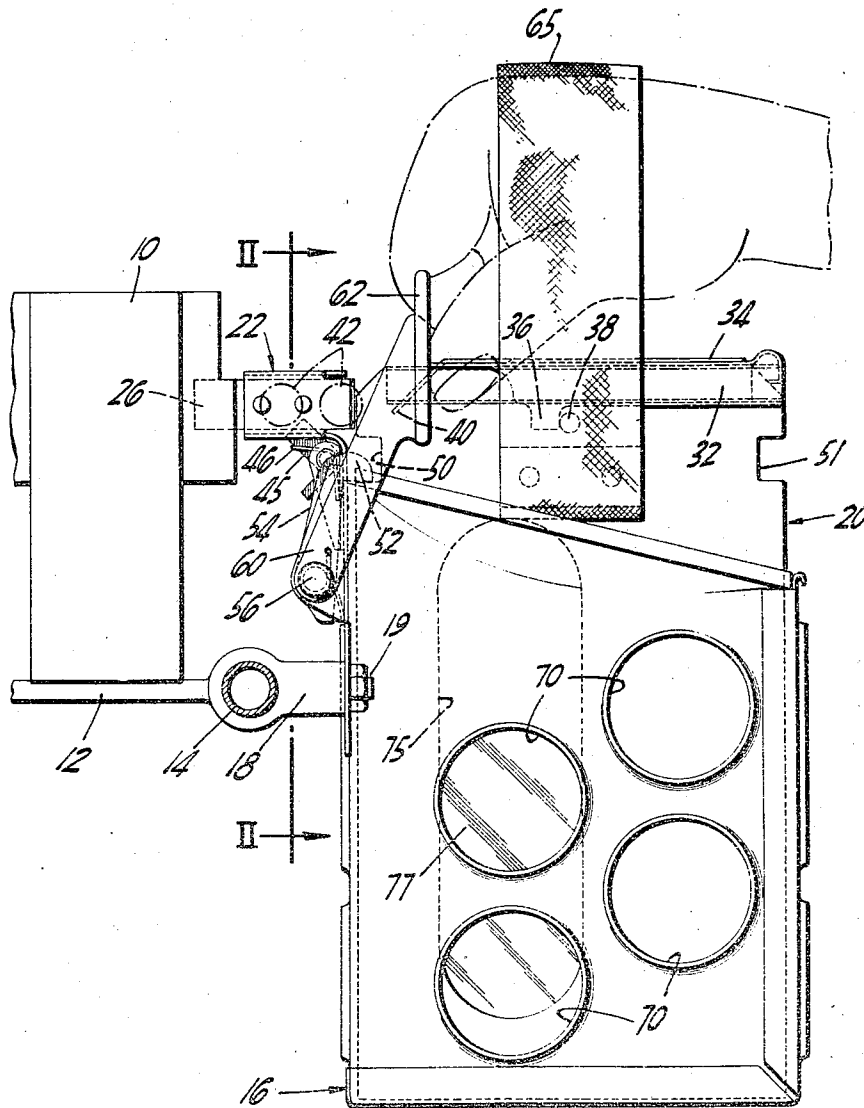
2,366,689

MACHINE GUN AMMUNITION MAGAZINE AND MOUNT

Filed April 7, 1941

2 Sheets-Sheet 1

FIG. 1.



INVENTOR
JOHN C. TROTTER
BY
Bean, Brooks, Buckley & Bean.
ATTORNEYS

Jan. 2, 1945.

J. C. TROTTER

2,366,689

MACHINE GUN AMMUNITION MAGAZINE AND MOUNT

Filed April 7, 1941

2 Sheets-Sheet 2

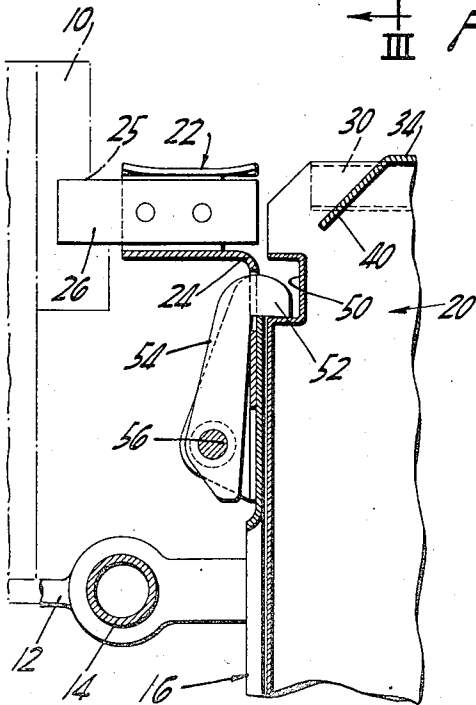
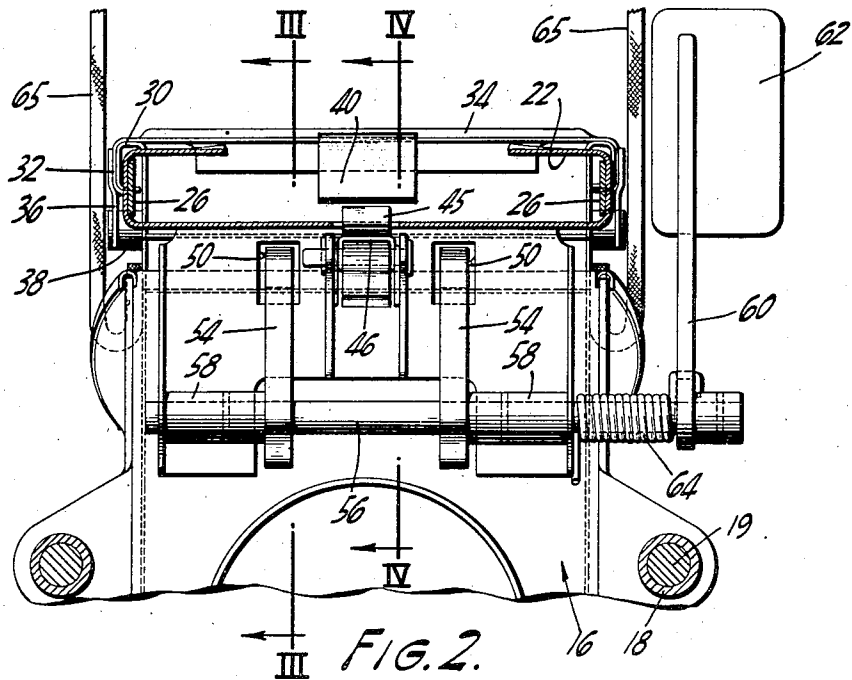


FIG. 3.

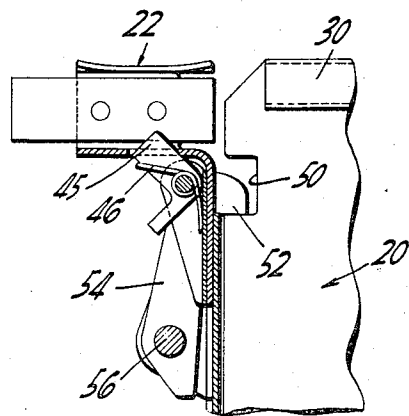


FIG. 4.

INVENTOR
JOHN C. TROTTER
BY
Bean, Brooks, Buckley & Bean,
ATTORNEYS

UNITED STATES PATENT OFFICE

2,366,689

MACHINE GUN AMMUNITION MAGAZINE AND MOUNT

John C. Trotter, Williamsville, N. Y., assignor to
Bell Aircraft Corporation, Buffalo, N. Y.

Application April 7, 1941, Serial No. 387,144

4 Claims. (Cl. 89—34)

This invention relates to feeding of ammunition to machine guns, and more particularly to improvements in ammunition magazines for feeding aerial machine guns in an improved manner. In connection with machine guns using the so-called "box" type of feed; that is, a cartridge belt magazine of box-like form mounted immediately adjacent the machine gun cartridge feed way so as to move as a unit with the gun during aiming adjustments of the latter, it is necessary that the gunner change the ammunition boxes relatively often as they become emptied. While the gunner is changing the boxes the mounting airplane is in dangerous position inasmuch as the gunner is temporarily unarmed. Consequently, an arrangement providing increased speed in connection with changing the boxes is very desirable, and it is one of the objects of the present invention to provide an improved ammunition magazine mounting arrangement providing this feature.

Another object of the invention is to provide an improved ammunition magazine mounting arrangement which enables the ammunition boxes to be changed with a minimum of manual effort on the part of the gunner, for improved operation during combat at high altitudes, for example. Another object of the invention is to provide an improved ammunition magazine mounting arrangement whereby the ammunition container may be changed in an improved manner under restricted space conditions. Another object of the invention is to provide an improved ammunition container mounting arrangement wherein the ammunition container is positively held in operative position in an improved manner during gun firing operations.

Another object of the invention is to provide an improved gun and magazine mount device for use in connection with flexibly mounted machine guns. Another object of the invention is to provide an improved combination ammunition magazine and holder therefor. Another object of the invention is to provide an improved ammunition magazine for use in conjunction with plural machine gun units. Another object of the invention is to provide in conjunction with a machine gun ammunition magazine, improved means for charging the associated gun. Other objects and advantages of the invention will appear from the specification hereinafter.

In the drawings:

Fig. 1 is a fragmentary end elevation of a machine gun mount and machine gun and ammuni-

tion magazine and mount therefor of the invention;

Fig. 2 is a fragmentary section, on an enlarged scale, taken substantially along line II—II of Fig. 1;

Fig. 3 is a fragmentary section taken substantially along line III—III of Fig. 2; and

Fig. 4 is a fragmentary section taken substantially along line IV—IV of Fig. 2.

The invention is illustrated in conjunction with a machine gun designated generally at 10, which may be of any type or style, and is mounted upon and is carried by a mounting structure 12 which in turn is supported upon a bearer tube 14 extending longitudinally of the gun 10 and at each side thereof. If desired, the support 12 may be mounted upon the bearer tubes 14 by slide connection devices (not shown) so that the gun may be free to reciprocate longitudinally relative to the bearer tubes 14 in response to recoil forces of the gun firing operation. The bearer tubes 14 are adapted to be either fixedly or adjustably mounted upon any suitable base (not shown), according to the purpose of the gun installation.

The drawings illustrate a magazine holder 16 of the invention as being rigidly mounted upon one of the bearer tubes 14 by means of a pair of brackets 18 and corresponding bolt and nut connections 19, in such manner that the magazine holder is disposed in upright position to one side of the gun 10. The holder 16 is of generally box-like form, being open at its top end and being formed of sheet metal or other suitable material. The holder 16 is so dimensioned as to be adapted to accommodate the ammunition magazine or box 20 of the invention in vertically slidable relation therewithin, and is so disposed that when the box 20 is seated within the holder 16 the upper end of the box 20 is substantially in registry with a cartridge belt guide throat 22. The guide throat 22 is mounted upon the holder 16 by means of a bracket portion 24 (Fig. 3) so as to extend into registry with the cartridge feed way 25 of the gun 10. Preferably, a pair of spring plate members 26 are fixed to extend in cantilever fashion from the opposite side walls of the guide throat 22 and into the gun cartridge feed way 25 so as to provide smoothly contoured guide ways for the cartridges when passing from the ammunition box 20 into the gun 10 even though the gun 10 may be reciprocating relative to its mounting and the magazine unit in response to recoil forces of the gun firing operation.

The ammunition box 20 is generally of rectangular form having closed bottom and side walls

for supporting the gun feed cartridge belt in accordion-pleated folded arrangement therewithin. At the upper end of the box 20, the side wall portions of the box are beaded as at 30 (Fig. 2) to provide guide rail portions for slidable engagement with corresponding underhanging flange portions 32 of a top cover plate 34. Thus, the cover plate 34 is adapted to be reciprocated relative to the box 20 from right to left as viewed in Fig. 1. A depending boss portion 36 extends from each of the flanges 32 for registry with a corresponding fixed stop or boss 38 extending from corresponding side wall portions of the box 20 to limit the movement of the cover 34 between the position of Fig. 1 thereof and toward the left thereof, only. A tongue 40 is provided to extend in downwardly inclined relation ahead of the forward end of the cover 34 in such manner as to be adapted to engage between adjacent cartridges 42 of the cartridge belt when it is trained into the guide throat 22.

Thus, the cover plate 34 is adapted to be manually shifted from the position of Fig. 1 to the left thereof so as to propel the cartridge belt through the guide way 22 into the gun cartridge feedway. During each return stroke of the cover plate 34 toward the position thereof as viewed in Fig. 1 the tongue 40 is adapted to flex upwardly and to ride over the following cartridges preparatory to reengagement therebehind incidental to further feeding of the cartridge belt toward engagement with the gun feed mechanism. Preferably, a pawl 45 will be pivotally mounted upon the holder 16 and arranged to extend through a slotted portion of the throat 22 and to be urged at all times by means of a spring 46 into engagement with the cartridge belt. Thus the pawl 45 will be adapted to be depressed to a position below the path of movement of the cartridge belt through the guide way 22 as it moves toward the gun 10, but the pawl 45 is adapted to spring upwardly into blocking engagement against the cartridges 42 whenever the cartridge belt tends to move to return toward the ammunition box. Thus, to initially charge the gun with the cartridge belt of the box 20, the outer end of the cartridge belt is simply placed within the opening of the guide way 22 and the box cover plate 34 is manually reciprocated as described hereinabove, whereupon the cartridge belt will be automatically fed into the gun 10 until it meets and engages with the gun feed pawl mechanism. Subsequent firing operation of the gun automatically provides the cartridge belt feeding operation in the usual manner.

To mount the box 20 within the holder 16 in detachably locked relation, the box 20 is provided at opposed end wall portions with recesses as at 50-51 for engagement with overhanging end portions 52 of a pair of latch members 54. The latches 54 are keyed to a shaft 56 which is rotatably carried upon the holder 16 by means of bearings 58. The shaft 56 is arranged to extend beyond a side portion of the holder to carry thereat a vertically extending crank 60 having a thumb pad portion 62. A torsion spring 64 is arranged upon the shaft 56 to engage at its opposite ends with the crank 60 and a stationary portion of the casing 16 so as to resiliently urge the shaft 56 to rotate so as to maintain the latches 54 in engagement with the recesses 50, as illustrated in Fig. 3. A handle in the form of a strap 65 is fixed at opposite side portions of the box 20 so as to extend in spaced looped relation thereabove and to provide suitable space

therebetween for insertion of the hand of the gunner (as indicated in Fig. 1) in such manner that the thumb of the gunner's hand comes naturally into registry with the crank pad 62. Thus, upon emptying of the ammunition supply from the box 20, the gunner simply slips his hand under the strap 65, as illustrated, and bears against crank 60 with his thumb while lifting upwardly against the strap 65 whereupon the latches 54 will be released from engagement with the box 20 and the latter will be raised in response to the lifting forces applied against the strap 65.

Thus, the empty box may be quickly removed and replaced by means of a filled box which has been previously stored in readiness within convenient reach of the gunner. It will be noted that the replacement box will slip readily into position within the holder 16 by reason of the camming action of the box 20 against the upper surfaces of the latches 54 until such time as the latch heads 52 come into registry with the recessed portion 50 of the box, whereupon the latches will snap into locked engagement with the box to maintain the latter rigidly in operative position as explained hereinabove.

It will also be noted that the boxes 20 are provided with similar recessed portions 51 at opposite side wall portions thereof (Fig. 1), whereby each of the replacement boxes 20 will be adapted to be installed within the holders 16 at either side of a pair of guns when mounted in dual-gun relationship. For example, the box 20 of Fig. 1 is adapted to be mounted at the left side of a gun similar to the gun 10 of Fig. 1 but having its cartridge feedway opening to the left instead of to the right as in the case of gun 10 of the drawings. To arrange the cartridge belt to be fed into the dual gun, the cover plate 34 would simply be withdrawn from the top of the box 20 and replaced from the opposite side thereof in such manner that the tongue 40 faces toward the right hand side of the box instead of toward the left hand side of the box, as illustrated in Fig. 1. The cartridge belt of the box 20 would then be trained out of the opening between the cover 34 and the side wall of the box at the right hand side thereof. The box 20 would then be adapted to be slipped into the holder corresponding to the holder 16 of Fig. 1 located adjacent the left hand side of the dual gun, and upon seating of the box 20 within the alternate holder the latches of the alternate holder will detachably engage the recessed portion 51 of the box, as in the manner of the latch engagement described hereinabove. The cover plate 34 may then be reciprocated toward the right for feeding the cartridge belt into connection with the dual gun feed pawl mechanism. Consequently, a simplified and universally exchangeable cartridge belt box and box holder arrangement is provided which is capable of use in an improved manner.

Preferably, the holder 16 is perforated as at 70 so as to provide windows through which the mounted box 20 may be viewed. A vertically elongated opening 75 may then be provided in each of the side walls of the box 20 and closed by a transparent panel 77 of glass or synthetic resin or other suitable material so that the box 20 will be adapted to retain its contents of cartridges while the latter are viewable from externally of the casing 16 so that the gun attendant may be apprised at any stage of the gun firing operation as to the condition of the contents remaining within the box 20.

Although only one form of the invention has been shown and described in detail it will be apparent to those skilled in the art that the invention is not so limited but that various changes may be made therein without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. A machine gun ammunition magazine device comprising a magazine box holder, a magazine box adapted to be seated within said holder and to be bodily lifted vertically therefrom, said holder having latch means pivotally mounted thereon, said magazine box having latch engaging means thereon, a lifting strap mounted upon said box to extend in spaced looped relation thereabove whereby the hand of the attendant may conveniently be inserted thereunder palm downward, and a latch release lever extending from said latch means and having a pad portion at a position above the elevation of the top of said box and in line with the thrust of the outspread thumb of the attendant's hand when being pushed under said strap when said box is in inserted position in said holder.

2. A dual machine gun ammunition magazine device comprising, in combination, a pair of magazine holders disposed at opposite sides of the positions of a pair of parallel machine guns and a plurality of magazine boxes adapted to be seated within said holders, said holders having latch means pivotally mounted thereon for engagement with said boxes when inserted within said holders at corresponding side portions next adjacent said guns, said magazine boxes having latch engaging recessed portions at opposite sides thereof and being otherwise fully symmetrical about fore and aft medial vertical planes thereof whereby said boxes are adapted to interchangeable use in conjunction with either of said holders so as to provide like feeding therefrom of identically folded cartridge belts therein, and cover members for said boxes, said cover members being freely reversible with respect to said boxes to adapt the latter to said interchangeable use.

3. A dual machine gun ammunition magazine device comprising, in combination, a pair of magazine holders disposed at opposite sides of the positions of a pair of parallel machine guns and a plurality of magazine boxes adapted to be seated within said holders, said holders hav-

ing latch means pivotally mounted thereon for engagement with said boxes when inserted within said holders at corresponding side portions next adjacent said guns, said magazine boxes having latch engaging recessed portions at opposite sides thereof and being symmetrical about fore and aft medial vertical planes thereof whereby said boxes are adapted to interchangeable use in conjunction with either of said holders so as to provide like feeding therefrom of identically folded cartridge belts therein, said boxes having cover plates slidably mounted thereon and having tongue portions extending therebelow and adapted to be reciprocated relative thereto for propulsion of the contents of said boxes by said tongues toward the corresponding gun cartridge feedways when mounted within said holders, said cover members being reversible with respect to said boxes for use of the boxes interchangeably with either holder.

4. A dual machine gun ammunition magazine device comprising, in combination, a pair of magazine holders disposed at opposite sides of the positions of a pair of parallel machine guns and a plurality of magazine boxes adapted to be seated within said holders, said holders having latch means pivotally mounted thereon for engagement with said boxes when inserted within said holders at corresponding side portions next adjacent said guns, said magazine boxes having latch engaging recessed portions at opposite sides thereof and being symmetrical about fore and aft medial vertical planes thereof whereby said boxes are adapted to interchangeable use in conjunction with either of said holders so as to provide like feeding therefrom of identically folded cartridge belts therein, said boxes having cover plates slidably mounted thereon and having tongue portions extending therebelow and adapted to be reciprocated relative thereto for propulsion of the contents of said boxes by said tongues toward the corresponding gun cartridge feedways when mounted within said holders, and cover slide stop means extending from said boxes adapted to limit reciprocation of said cover plates so as to prevent unintended disengagement thereof from said boxes when said boxes are seated within said holders, said cover members being reversible with respect to said boxes for use of the boxes interchangeably with either holder.

JOHN C. TROTTER.