This invention relates to a carrying handle for an automatic fire arm and more particularly for a machine gun.

One of the objects of the invention is to provide a carrying handle which is pivotable from a substantially horizontal or lowered position to a substantially vertical or raised position with respect to the length of the machine gun. The present invention provides such a handle which is pivotable from a substantially horizontal or lowered position to a substantially vertical or raised position with respect to the length of the machine gun. The present invention provides such a handle which is pivotable from a substantially horizontal or lowered position to a substantially vertical or raised position with respect to the length of the machine gun.

Another object of the invention is to provide a handle which will be substantially balanced in the hand of the carrier.

Another object of the invention is to provide a handle which may be pivoted from an upright or carrying position to a substantially horizontal or lowered position of repose in which latter position it extends outward past one side of the breech casing of the machine gun whereby the cover plate of the breech casing may be raised without interference from the handle.

A further object of the invention is to provide a carrying handle so mounted that it may be pivoted from an upright or carrying position to a substantially horizontal or lowered position of repose in which latter position it extends outward past one side of the breech casing of the machine gun whereby the cover plate of the breech casing may be raised without interference from the handle.

Still another object of the invention is to provide a carrying handle on the top of a machine gun whereby, when the handle is in the lower position, adjacent one side of the breech casing, the line of sight between the front and rear sights of the machine gun is clear in all positions of elevation of the rear sight.

The details as well as other objects of the invention will become apparent from the following specification, and the accompanying drawing.

The accompanying drawing shows 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 drawing:

Fig. 1 is a side elevation of a machine gun having a carrying handle in raised or carrying position.

Fig. 2 is a fragmentary side elevation showing the handle in lowered position and the cover plate raised.

Fig. 3 is a rear elevation partly broken away and on a larger scale illustrating the carrying handle pivoted away from the side of the breech casing into which the cartridge belt is fed.

Fig. 4 is a side elevation of an enlarged view of the details of the front bearing and stop member for the handle, the adjacent portions of the machine gun being illustrated in dot-and-dash lines.

Fig. 5 is a front elevation of the front bearing and stop member illustrated in Fig. 4.

Fig. 6 is a side elevation of the rear bearing and stop member for the handle.

Fig. 7 is a front elevation of the rear bearing and stop member for the handle.

Fig. 8 is a fragmentary rear end elevation showing details of the rear sight and the carrying handle pivoted to lowered position.

Fig. 9 is a plan view of the handle per se.

The handle forming the subject matter of the present invention is a substantially U-shaped bail-type handle having a relatively long hand-engaging or grip portion, as either end of which is an offset leg portion terminating in a trunnion extending outward substantially parallel to the hand-engaging portion. Combination bearing and stop members are provided on the top of the breech casing of the machine gun to accommodate the trunnions of the handle.

Similarly, the vertical dimension of the combination bearing and stop members is such that they do not extend into the line of sight between the front and rear sights of the machine gun so that, when the handle is lowered to the position illustrated in Figs. 2, 3 and 5 the cover plate may be raised without interference of any kind from the handle.

Furthermore, the stops of the combination bearing and stop members limit the swinging of the handle to an arc of substantially 90 degrees in moving from vertical or carrying position to horizontal or lowered position. In the latter position, the handle extends outward beyond one side of the breech casing which side is opposite that containing the feed channel into which the cartridge belt is fed whereby in neither of its extreme positions, or in any position between the extremes, does the handle interfere with the feed-
ing of the cartridge belt into the feed channel. This arrangement is particularly advantageous when first inserting the free end of the cartridge belt into the feed channel since the handle will not interfere with the gunner's vision when so inserting the cartridge belt whether it is being fed from a magazine attached to the machine gun or some other source of supply.

In the drawing, a firearm illustrated in the form of a machine gun is generally indicated at 10. The machine gun comprises the breech casing 14 having a pivoted cover plate 14 arranged on the top thereof. The cover plate 14 is provided with a conventional latch 15. A barrel jacket 16 is provided on the forward end of the breech casing and the barrel 15 projects from the forward end of the barrel jacket.

At the rear end of the breech casing, a back plate 20 mounting a buffer assembly, handle, and trigger mechanism is illustrated but, since these elements comprise no essential feature of the instant invention, the details of the same are not described.

The top plate 22 of the breech casing mounts a rear sight 24. The rear sight has a pivoted leaf 25 which has a conventional sight slide mounted thereto and also a fixed peep sight 26, which is set to extend at a right angle to the leaf 25 and may be used when the rear sight leaf is in inactive position, as illustrated in Figs. 1 and 8.

Mounted on the forward end of the barrel jacket 16 is a pivoted front sight 28 having a blade on its outermost end which, when the front sight 28 is elevated to the position shown in Fig. 2, is used by the gunner in conjunction with the rear sight to aim the machine gun.

The forward end of the breech casing is provided with a trunnion block 32 having spaced upstanding arms 34 projecting from the upper surface thereof and between which the cover detent bracket 35 is secured by suitable rivets 38.

The details of the spaced upstanding arms 34, the cover detent bracket 35, and the securing rivets 38, as well as the complete function of the same, are illustrated in more detail in U.S. Patent 1,803,349, Figs. 6, 7, 29, and 30. Since the details of these elements do not comprise an essential part of this invention, further details of the same are not given herein.

As further illustrated in Fig. 3, the handle 58 is in lowered position and extends outward past the right side of the breech casing, in which position it will in no way interfere with the feed of the cartridge belt 66 to the feed channel on the left side of the breech casing, and even if the handle were swung to the vertical or carrying position it would still not interfere with the feed of the cartridge belt. Freedom from interference from the handle is particularly desirable when initially inserting the outer end of the cartridge belt into the feed channel as the handle will not interfere with the gunner's vision in inserting said end of the cartridge belt.

The stops 48 and 54 engage a portion on each leg 52 to prevent the handle from swinging past vertical position toward the left side of the breech casing so that at no time can the handle swing toward the feed-in side of the breech casing, thus precluding interference of the handle with the feed of the cartridge belt.

When the handle 58 is in the lowered position, it extends beyond the periphery of the cover plate whereby the latter may be raised without interference from the handle as shown in Fig. 2. Furthermore, the handle may not pivot toward the side of the breech casing from which the cover plate latches 15 projects so that the handle will not interfere with the manipulation of this latch.

Also, when in the lowered position just described, the handle and its associated bearing and stop members are free from the line of sight which extends between the upper end of the front sight 30 when raised and the rear peep sight 28. Said line of sight is illustrated by a dot-and-dash line in Fig. 1. As will be seen from this figure.
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the uppermost surface of each of the combined bearing and stop members 42 and 50 is below said line of sight. Fig. 3 clearly shows that the aperture of the peep sight 28 is above the uppermost surface of the combined bearing and stop member 50. The vertical position of the aperture of the peep sight 28 with respect to the top plate of the breech casing is substantially the same as that of the aperture of sight slide on the pivoted leaf 28 when the sight slide is in lowest position.

A further embodiment which may be incorporated in the present invention is to form the hand grip member 60 of some suitable material having low thermal conductivity characteristics whereby, should the machine gun become overheated, the heat will not be transmitted to the hand of the user to such an extent that he will not be able to carry the machine gun. The hand grip member, by way of illustration, may possibly be formed of a suitable synthetic resin having low thermal conductivity characteristics and, if necessary, the resin may be impregnated with appropriate fibrous or other binding material so that the handle will not shatter if subjected to hard use or direct blows.

The construction of the handle mounting means and the manner of securing these means to the machine gun, as well as the particularly selected positions for attaching said means on the machine gun, represent salient features of the instant invention. It will be seen that the combined bearing and stop members afford a compact arrangement for pivotally mounting the handle as well as limiting the movement thereof to a restricted path whereby the handle may not be moved to a position in which it will interfere with the feed of the cartridge belt to the feed channel side of the breech casing but, the handle may be pivoted toward the other side of the breech casing, from carrying position, to clear the path of the cover plate when it is desired to open the same and, when the handle is pivoted toward said side of the breech casing, the handle will be in a position whereby the feed channel side of the breech casing, whereby interference between the handle and the feeding of the belt is substantially prevented.

3. In combination, an automatic firearm including a breech casing and a pivoted cover plate on the upper surface of said breech casing, and a carrying handle pivoted to said breech casing and spanning said cover plate and also being adapted to be swung from a carrying position in which it is substantially vertically above the cover plate to a position adjacent one side of said breech casing, said carrying handle being clear of said cover plate when in the last mentioned position whereby the cover plate may be raised.

4. In combination, an automatic firearm including a breech casing and a pivoted cover plate on the upper surface of said breech casing, bearing members respectively mounted on said breech casing in front of and to the rear of said cover plate, and a handle pivotally mounted on said bearing members and adapted to be swung from carrying position which is substantially vertically above said cover plate to a position adjacent one side of said breech casing in which latter position said handle is clear of the periphery of said cover plate whereby the same may be raised.

5. In combination, an automatic firearm including a breech casing having a trunnion block and a pivoted cover plate on the upper surface of said breech casing, a bearing member mounted on said breech casing behind said cover plate, and a handle pivotally mounted on said trunnion block in front of said cover plate, and a handle pivotally mounted in said bearing members and adapted to be swung from carrying position which is substantially vertically above said cover plate to a position adjacent one side of said breech casing to clear and permit the raising of the cover plate.

6. In combination, an automatic firearm including a breech casing and a pivoted cover plate on the top of said breech casing, a bearing mounted on the top of said firearm rearward of said cover plate, a bearing mounted on the top of the firearm forward of said cover plate, and a handle having a hand engaging portion and trunnions offset with respect to said hand engaging portion, said trunnions being pivotally mounted in said bearings whereby said handle may be swung from carrying position wherein it is substantially vertically above said cover plate to a position adjacent one side of said breech casing in which latter position the handle extends beyond the periphery of said cover plate to permit the raising of the latter.

7. In combination, an automatic firearm in-
4. including a breech casing and a cover plate pivoted on the top of said breech casing, a bearing mounted on the top of said firearm rearward of said cover plate, another bearing mounted on the top of said firearm forward of said cover plate, and a generally U-shaped handle having trunnions on the free ends of the legs of said handle which trunnions are received in said bearing to pivotally mount said handle on the top of said firearm for swinging movement from carrying position wherein the portion of said handle extending between the legs thereof is disposed substantially vertically above said firearm to a position wherein said portion of the handle is disposed outward beyond one side of said breech casing whereby the cover plate may be raised when the handle is in said latter position.

8. In combination, an automatic firearm of the type using a cartridge belt and including a breech casing having a feed channel to feed said belt through said feed channel from one side of said breech casing and said firearm also including a cover plate pivoted on the top of said breech casing, a bearing mounted on the top of said firearm rearward of said cover plate, another bearing mounted on the top of said firearm forward of said cover plate, a generally U-shaped handle having trunnions on the free ends of the legs of said handle which trunnions are received in said bearings to pivotally mount said handle on the top of said firearm for swinging movement from carrying position wherein the portion of said handle extending between the legs thereof is disposed substantially vertically above said firearm to a position wherein said portion of the handle is disposed outward beyond one side of said breech casing whereby the cover plate may be raised when the handle is in said latter position, and stop means mounted on said firearm and adapted to engage said handle to prevent pivotal movement of the handle past the carrying position toward the side of the breech casing into which said cartridge belt is fed.

9. In combination, an automatic firearm of the type using a cartridge belt and including a breech casing having a feed channel to feed said belt through said feed channel from one side of said breech casing and said firearm also including a cover plate pivoted on the top of said breech casing, a bearing member and a combined bearing and stop member mounted on the top of said firearm with one of said members disposed rearward of said cover plate and the other disposed forward of said cover plate, and a generally U-shaped handle having trunnions on the free ends of the legs of said handle which trunnions are received in the bearings of said members to pivotally mount said handle on the top of said firearm for swinging movement from carrying position wherein the portion of said handle extending between the legs thereof is disposed substantially vertically above said firearm to a position wherein said portion of the handle is disposed outward beyond one side of said breech casing whereby the cover plate may be raised when the handle is in said latter position, said handle also being engageable with the stop member of said combined bearing and stop member to prevent pivotal movement of said handle toward the side of the breech casing into which the cartridge belt is fed.

GEORGE IRONSIDE.