Aug. 12, 1941. J. F. HABERLIN 2,252,227

AMMUNITION CONTAINER

Filed Nov. 16, 1937 3 Sheets-Sheet 1

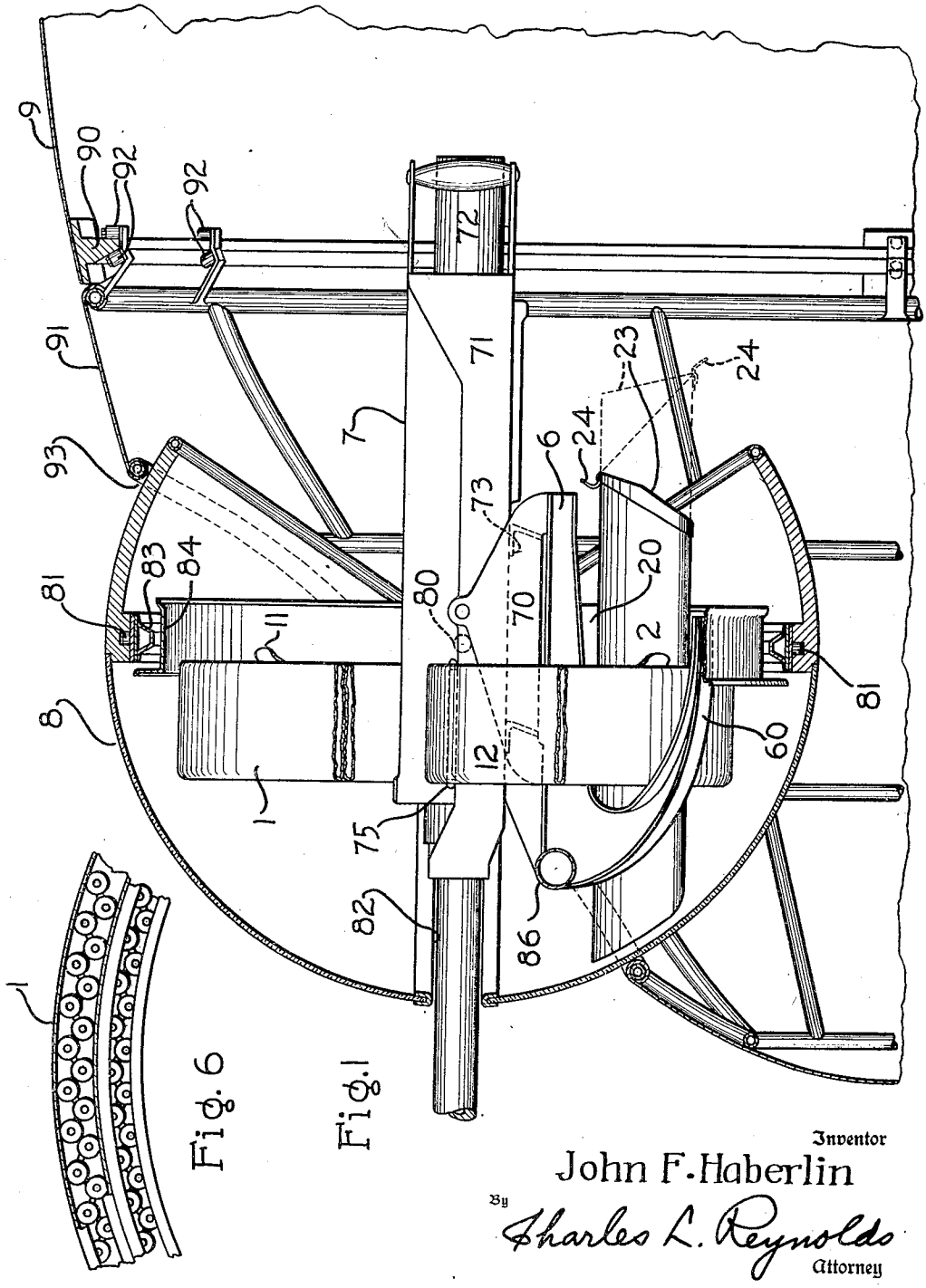



Fig. 1




Fig. 6

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AMMUNITION CONTAINER

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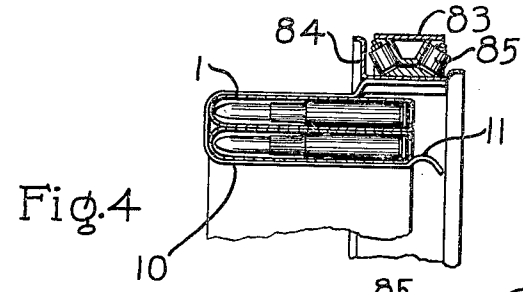



Fig.4

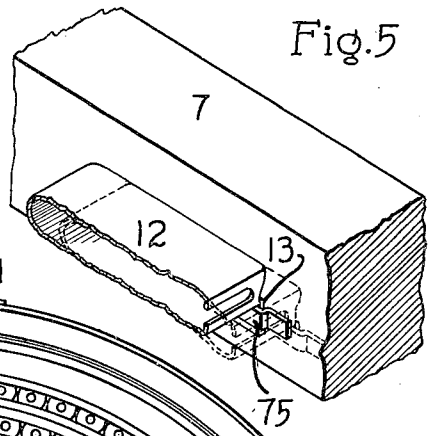



Fig.5

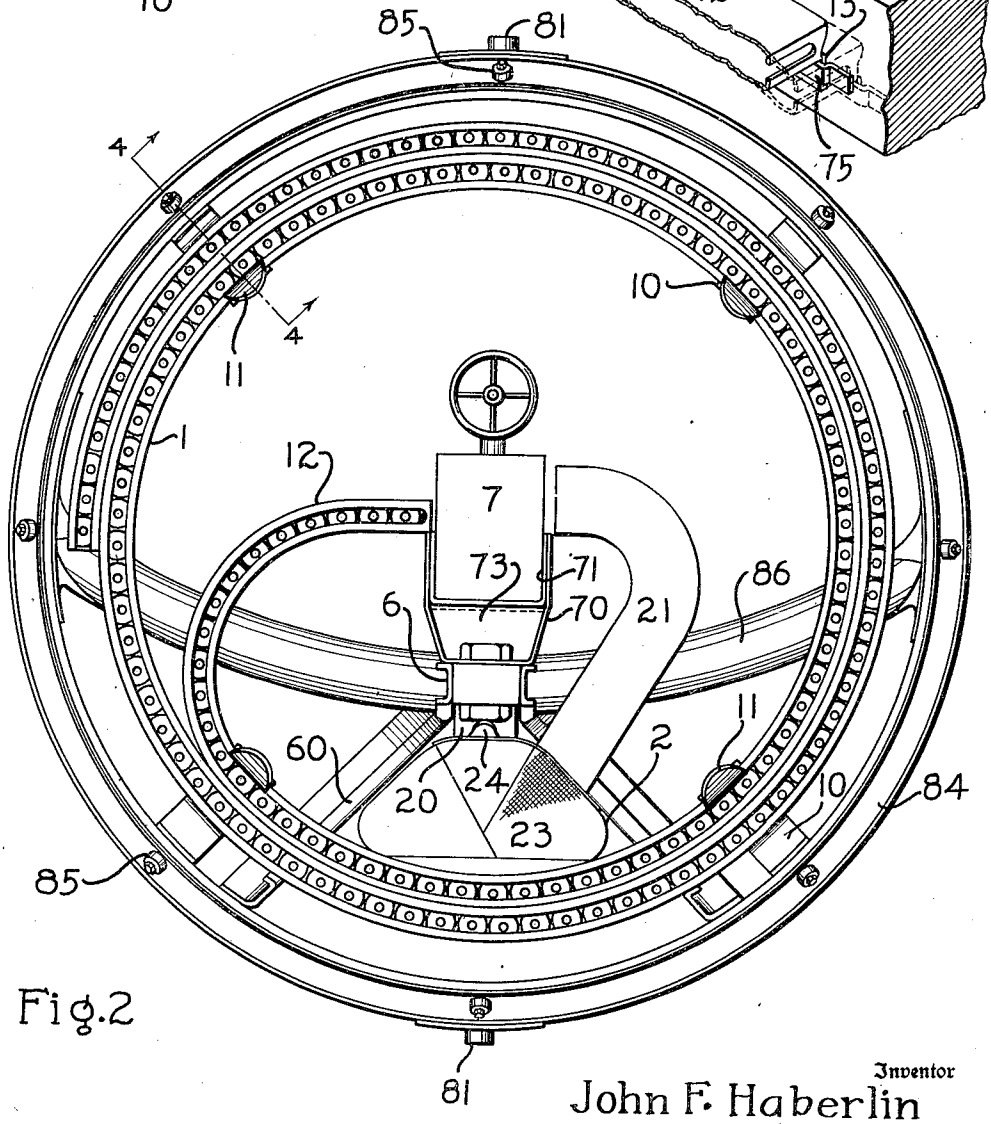



Fig.2

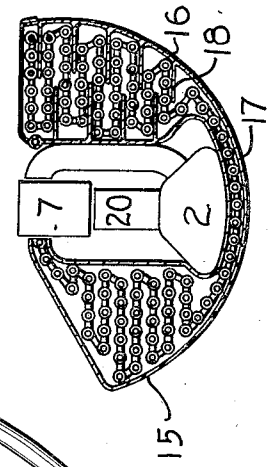
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AMMUNITION CONTAINER

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Fig. 7



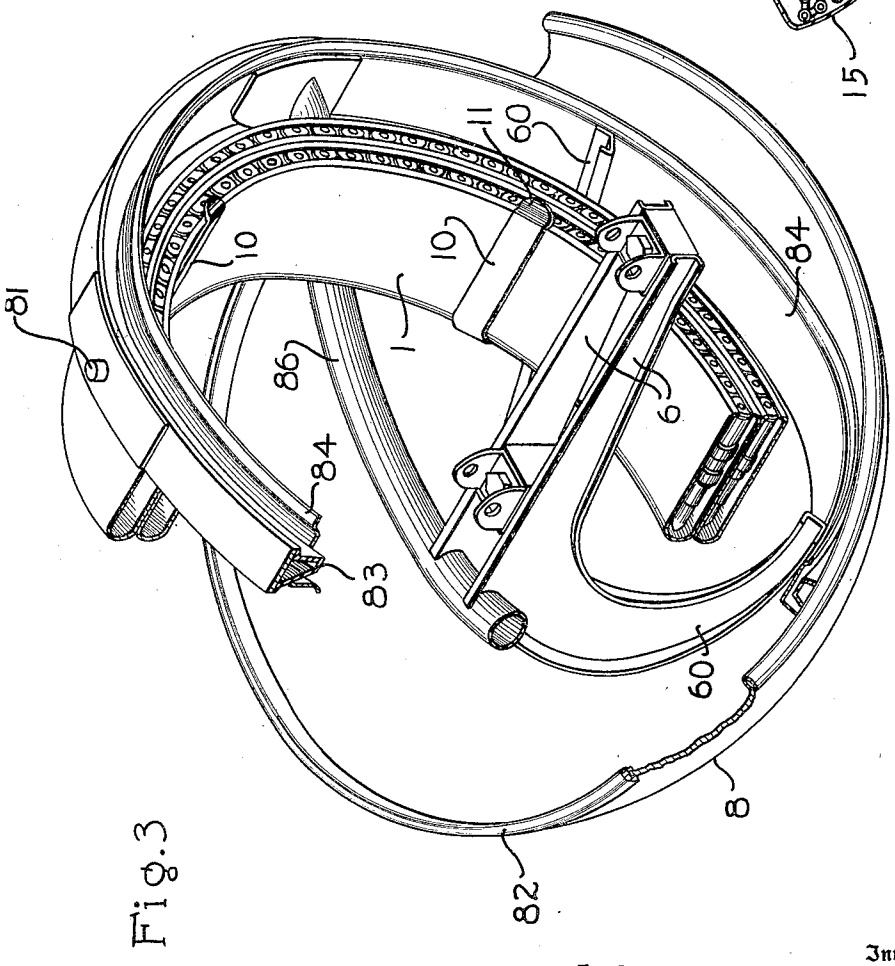




Fig. 3

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Patented Aug. 12, 1941 2,252,227

# UNITED STATES PATENT OFFICE

2,252,227

## AMMUNITION CONTAINER

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Application November 16, 1937, Serial No. 174,817

27 Claims. (Cl. 89—37.5)

The supply of ammunition to machine guns and the like, especially when such guns are mounted upon aircraft in a restricted space or enclosure, and when such guns are flexibly mounted for covering a wide angle or cone of fire (such conditions occurring in a turret mount, for example), is a problem which still persists, notwithstanding various attempts to produce an ammunition container suitable for use under such conditions. Such mounts and ammunition containers for use therewith, are shown, for example, in my copending applications Serial Nos. 104,198, filed October 6, 1936, and 119,905, filed January 11, 1937.

In such a mount the gun is enclosed within a slotted sphere, and is tiltable with the sphere, and along the slot upon another axis with respect to the sphere, and may also be mounted for rotation about an axis which substantially corresponds with the axis of the gun barrel. The sphere or enclosure is usually mainly transparent, as is necessary, not primarily for aiming, but to enable the gunner to pick up a target anywhere within his field of fire—perhaps a hemisphere or greater. The gunner who first sees his target, as it comes within the range of flexibility of his gun mount, is most likely to be first to register a hit. His field of vision, then, must be kept as wide as possible, for it is largely useless to give him a mount sufficiently flexible to cover a wide field of fire, if his field of vision is so restricted that he does not become aware of his target's presence until it is in front of him, and well within the field of fire. Nevertheless, for aerodynamic reasons, the enclosure, especially a sphere or the like projecting from a streamlined surface, must be kept as small as possible—thereby restricting the field of vision—and on the other hand, the amount of ammunition supplied at one time must be as large as possible, to avoid frequent necessity for reloading. The need for keeping the enclosure small and the need for a large capacity ammunition container are in conflict, and both conflict with the need for the fullest possible field of vision, especially around the gun's barrel. If a larger supply of ammunition is required in a small enclosure, it would seem necessary—since the space beneath the gun is needed for a receiver for discharged cases and links—to pile the ammunition, or its container, upward at either side of or above the gun, especially since, with an enclosure of this type having a small rear opening, and having internal rings for tilting and swiveling, the space close about the gun seems the only place where a heavily loaded ammunition container can be inserted and manipulated readily. This, however, only restricts further the field of vision so vitally necessary, to the point of reducing dangerously the efficiency of the gunner and of the entire installation.

It is not practicable to permit the cases and links, discharged from such a gun, to spill into the interior of the enclosure nor of the aircraft, for there would be danger of jamming some part of the mounting so that it would not swing freely, and there is also the danger that they would fall upon the floor where the gunner stands or kneels, and would interfere with his handling of the gun, possibly at some critical moment during combat. In addition, during maneuvers of the airplane or in rough air such links would fly about in the interior of the airplane, to the possible injury of or interference with personnel within the plane. Accordingly a receiver must be provided which will receive and confine an adequate number of cases and links, and this tends to restrict the space which can be occupied by an ammunition container, and requires the allocation of space beneath the gun for mounting such a receiver, and for access thereto to empty or remove it, when filled.

It has been found that due to such considerations the number of rounds which can be supplied from a single ammunition container to a gun is far inadequate. Combat planes, provided with fixed guns, may discharge the cases and links overboard by a chute fixed in proper relationship to the gun, and hence may be supplied from a fixed ammunition container of a capacity sufficient to carry a large number of rounds. Bombing airplanes, which must defend themselves from such combat planes, are therefore at a disadvantage if each machine gun is not provided with an equivalent number of rounds available without change of ammunition containers. If, for example, the flexibly mounted guns may be supplied with only 35 rounds of ammunition at a time, and the attacking plane is provided with 250 rounds, it is obvious that the 35 rounds may become exhausted long before the attacking plane has exhausted its available supply of ammunition, whereupon the defending plane, equipped with the flexible gun, is at a disadvantage because time must be consumed, possibly at a critical moment of the combat, in removing the depleted ammunition container and installing in place a fresh ammunition container. Nevertheless, because of the restricted space available for occupancy by an ammunition con-

tainer and for movement of the container into operative position, and because of the difficulty of handling a heavy container full of ammunition in and into such restricted space, and considering also the necessity of collecting the discharged cases and links, which lessened the space available to receive ammunition, when the case and link receiver was combined with the ammunition container, as in my previously filed applications, above identified, and the necessity for having a clear field of vision for picking up the target and for sighting the gun, it has heretofore been considered necessary to supply an ammunition container of only limited capacity to such flexibly mounted guns.

It will be seen that the supply of ammunition in adequate amounts, to a gun so mounted and within such an enclosure is a very special problem, arising from the nature of and the conditions present in such a mount and enclosure, and not present in mounts where the gun is merely mounted on and movable about the edge of a cockpit, in which the gunner stands, even though such a cockpit be hooded or enclosed. The problem is, how to take fullest advantage of the efficiency of such a mount and enclosure when, from the very nature thereof, the supply of an adequate number of rounds would appear to be impossible without so greatly reducing the gunner's field of vision, and therefore the efficiency of the installation, that, even with its advantages, and with the undoubted need therefor in high speed aircraft, the mount could not be used satisfactorily.

It is a principal object of the present invention to provide an ammunition container which will enable the supply to such a flexibly mounted and enclosed gun of a considerably greater amount of ammunition, whereby the gun may fire a large number of rounds without the necessity of changing ammunition containers, yet without increasing appreciably the difficulty of handling and installing the full container, and which nevertheless leaves space available for an adequate case and link receiver, and which gives to the gunner a sufficient field of vision, and ample room for sighting of his gun, and for its manipulation.

It is a further object to provide such an ammunition container which may be quickly and conveniently removed from operative position with relation to the gun and its mount, and as readily installed, to the end that when one ammunition container is exhausted or depleted, the depleted container may be removed and a fresh one, filled with a new supply of ammunition, may be quickly installed in its place.

It is a further object to provide such an ammunition container which may be used without change, either for .30 caliber or for .50 caliber ammunition.

It is a further object to provide a mount for a gun in such an installation, which is of adequate strength, so formed as to permit the installation of the ammunition container and of the case and link receiver, and which occupies a minimum of space within the interior of the spherical enclosure, and in any event, which occupies space not otherwise usable or necessary to keep clear. A secondary object is to provide such a mount which can be employed with guns having recoil mechanism or without such recoil mechanism, usually by means of adapters, to permit recoil of the gun, when necessary, with relation to the mount.

A still further object is the provision of a suitable case and link receiver which will contain the discharged cases and links, and which is so formed and arranged relative to the associated parts, that when opportunity offers during a lull in combat, it may be conveniently emptied without likelihood of spilling any of the cases or links into the interior of the spherical enclosure, where they might cause trouble by jamming parts of the movable mechanism, or where they might later spill out into the interior of the airplane.

With this and other objects in mind, as will appear hereafter, my invention comprises the novel ammunition container, the novel gun mount which is peculiarly adapted to the use of such an ammunition container and of a suitable case and link receiver, and the combination of the several parts with relation to each other and with relation to the gun mount and enclosure.

In the accompanying drawings my invention is shown in forms such as are now preferred by me.

Figure 1 is a section, taken axially of the gun in a neutral position, through the enclosure, illustrating the application of the gun mount and the ammunition container and the case and link receiver to the gun and to the enclosure.

Figure 2 is an elevation of the gun mount and the immediately supporting portions of the enclosure, showing the gun and the ammunition container and the case and link receiver in position therein, looking from the breech end of the gun.

Figure 3 is a perspective, with parts broken away, of the gun mount, parts of the enclosure, and of the ammunition container, in operative position.

Figure 4 is a detail section on the line 4—4 of Figure 2, illustrating the ammunition container and the method of its support.

Figure 5 is a perspective detail of the manner of engagement of the feed chute of the ammunition container to the gun.

Figure 6 is an elevation of a portion of the ammunition container, with parts broken away, showing the same in use with smaller ammunition.

Figure 7 is a transverse section through an ammunition container of a modified form, showing the same in position relative to a gun, gun mount, and case and link receiver.

In some of its phases the present invention will be found useful in various fields, but as it is particularly designed for employment upon airplanes having gun enclosures of a special type, it is shown and will be described in conjunction with such enclosures.

The nose or tail end of a fuselage, nacelle, or the like is indicated at 9, terminating in an opening defined by a ring 90, extending transversely of the longitudinal axis of the structure. By means of this ring a rotatable nose piece or shell 91, principally of transparent material, is supported for rotation about the longitudinal axis by rollers 92 engaging the ring 90. The rotatable shell 91 is provided with an eccentrically positioned aperture 93 of generally circular shape, that is, of a shape to be filled by a closure 8, which is rotatable with and with respect to the shell 91, in all positions of either. The enclosure 8 is preferably spherical throughout, except as it is interrupted at its inner end to afford access to the gun, to the ammunition container, and to the case and link receiver. It is mounted for tilting or oscillation with respect to the shell 91

upon an axis indicated by the circle 80 in Figure 1, which substantially intersects the axis of the gun barrel. This may be considered an axis of elevation and depression, and the gun 7 is mounted within the enclosure 8 for tilting movement about an axis at right angles to the axis 80, as indicated by the trunnions 81, which movement may be considered a traversing movement. The enclosure 8 is generally of transparent material, and is slotted at 82 for protrusion of the gun barrel and to permit this traversing movement. In addition the gun is mounted for rotation with respect to the enclosure 8 about its own axis. These several movements may be accomplished by providing an outer ring 83, which carries the trunnions 81, and an inner ring 84 supported by rollers 85 from the outer ring 83, whereby the inner ring 84 is rotatable. The gun is therefore supported entirely from the inner ring 84. These elements, largely and necessarily within the enclosure, reduce the available space therein. The enclosure 8 is provided at its inner or breech end with an opening, best seen in Figure 1, of considerable angular extent, whereby the gunner may have access to the gun and to other parts supported within the enclosure.

For the support of the gun I provide a mount which consists of an arm or two parallel arms held rigidly together by spacer members, so that in effect they constitute a single arm 6, and two supporting legs 60. These members may be of suitable cross section and shape to withstand the stresses to which they are subjected. The mount thus formed is carried upon the inner ring 84 by means of a bowed frame member 86, preferably welded to the inner ring 84, and the feet of the legs 60 are likewise carried down to the inner ring 84 and secured thereto, as by welding. Both the arms 6 and the legs 60 extend rearwardly from the bow 86 so that there is a considerable space between the arm 6 and the supporting legs 60, and the legs 60 lie in general close to the inner surface of the enclosure 8, as does also the bow 86, so that a minimum of space, especially adjacent the inner ring 84 and to the rear thereof, is occupied in any way by structural or supporting members, thus leaving room for the ammunition container and the case and link receiver, and freedom for manipulating these and the gun. The arm 6, which constitutes the immediate gun mount, is the only member which projects materially into the interior of the enclosure 8, and this lies immediately beneath the gun.

The form of the gun and the precise details of its mounting upon the arm 6 forms no part of this invention, and have not been shown in detail. The mount is capable of supporting different sizes of guns, as of .30 caliber and of .50 caliber. That shown in the drawings is intended to represent a .50 caliber gun, in which case an adapter 70, 71 is provided, this adapter embracing the gun and permitting some recoil of the same with respect to the adapter through recoil mechanism, indicated at 72, the weight of the gun being carried upon ledges 73, forming part of the adapter. For a .30 caliber gun the adapter is not necessary, or a different type of adapter may be employed. It is only sufficient to note, with respect to the gun, that the feed opening is at the left side, and that links are discharged at the right side, and cases are discharged through the bottom. These are characteristics of the particular gun employed, and further complicate the problem of providing a suitable and adequate ammunition container while leaving a sufficient field of vision.

Instead a compact, concentrated ammunition container, as heretofore employed, the ammunition container is made preferably in the form of a circle or spiral channel, as indicated at 1, which is of an outside diameter such that it will fit closely to or within the inner ring 84, to which it is held by clips 10, in the nature of spring members having a spring latch 11, whereby the ammunition container may be held in place and yet may be readily removed and moved out of the enclosure through the angular opening at the inner or breech end of the enclosure 8, and a filled container may be slipped into place in the same manner. Several such clips are provided about the circumference of the inner ring 84. The ammunition container may consist of one or of several convolutions, and in this way a considerable length is attained for the ammunition belt, consisting of linked together cartridges, yet without unduly filling the space immediately within the enclosure, nor obscuring to too great a degree the vision of the gunner around the gun, either for picking up a target or for sighting upon the target. It may be thought of as composed of two chambers, one at each side of the gun, and connected by a channel beneath the gun. Such an ammunition container terminates at its feed end in a portion 12 which may be considered the feed chute, and which curves smoothly inward toward the feed opening of the gun. It is preferred that the container be of channel shape, open at its rear end, so that the gunner may see at a glance approximately the number of rounds remaining to be fired. The feed chute 12 is preferably secured to the gun, being provided, for instance, with a finger 13 (see Figure 5), which engages closely within a strap 75 carried upon the gun 7. In installations where the gun is permitted to recoil relative to its mount the end of the feed chute 12 will thus be held in proper position relative to the gun at all times, and being preferably of comparatively light sheet metal material, it is sufficiently flexible that its end will follow the recoil movements of the gun without disturbance of the remainder of the ammunition container. During traversing or elevational tilting of the gun the ring 84 and the ammunition container tilt with the gun, so that the field of vision therethrough is not lessened by tilting of the gun relative to the ring and container.

By spreading the legs 60 of the gun mount widely apart, not only is the mount made more stable, but space is provided wherein a case and link receiver 2 may be supported. This is made of a shape to generally fill the space thus provided, so that it has maximum receiving capacity, and is of a length to extend substantially from the front wall of the enclosure 8 to but not outside of the angular opening at the rear of the enclosure, as may be seen in Figure 1. It is connected by a chute 20 to the under side of the gun for receiving discharged cases, and by a chute 21 to the link discharge opening of the gun, whereby discharged links are received in the chute and conducted to the receiver 2. The receiver may be integral with or separate from these chutes. It might be removably mounted, but preferably is fixedly mounted, and is provided with an inclined rear end and a closure 23 therefor, which is formed as a sleeve or chute of paraffined canvas or like comparatively flexible material. This canvas sleeve is provided with fold

lines, as indicated in Figures 1 and 2, whereby its end, in the unfolded position shown in dash lines in Figure 1, extends beyond the rear edge of the angular aperture of the enclosure. When it is desired to empty the receiver 2 this sleeve is unfolded, a catch 24 being released, and the cases and links within it are pulled out by hand or by a raking device, or they roll out by tilting the enclosure, and are caught in a can or the like which is held beneath the extended chute 23. When the receiver 2 is emptied the fold lines cause the chute to fold again into the closed position, and its catch 24 is reengaged at the top of the chute with a keeper (not shown), whereupon it is again in readiness to receive the cases and links.

It will be observed that the ammunition container, by being of a form thus to lie at each side or to encircle the gun and its mount at a distance therefrom, is capable of holding a large number of rounds, a considerably greater number than can be held in a container which lies principally at one side of the gun. Naturally it will hold more of a smaller size cartridge than of a larger size. Thus it may be so designed that .50 caliber caliber cartridges will lie side by side, spaced apart by their links, but that .30 caliber cartridges, as shown in Figure 6, will lie in staggered relation, and consequently a considerably greater number of the .30 caliber cartridges can be held in such a container than of .50 caliber cartridges, yet the one container will accommodate either size.

It is possible to accomplish some of the advantages of this invention without forming the ammunition container to completely encircle the gun and its mount. Thus in Figure 7 the container is shown as expanded at each side of the gun to form two boxes 15 and 16, lying at opposite sides of the gun and gun mount, but connected by a channel 17 of a width to receive only a single cartridge at a time. There is still space left for the case and link receiver 2, and the cartridges are loaded into the boxes 15 and 16 in layers, as is customary, but preferably and in order to prevent pressure of the ammunition in the box 16, communicated through the channel 17 to the box 15, from jamming the cartridges in the latter, means are provided for supporting the greater mass of the cartridges. This permits the cartridges to be withdrawn from the box 16 only a few at a time, still linked together. Such means may consist of baffles 18 so arranged as to support the majority of the cartridges in the box 16, and to permit them to be withdrawn from below only one layer at a time.

It will be observed that the cartridges in this form, and more especially in the completely encircling form, shown in the other views, provide a balance of the weight of cartridges to such an extent that there is no excessive burden placed upon the feed mechanism of the gun to draw the cartridges into the gun. The weight of the cartridges at either side of the gun is balanced one against the other. When cartridges to the number required to fill 90° of the ammunition container have been used there is the minimum load placed upon the feed mechanism, for the opposite 90° of cartridges are unbalanced and may tend to slide down the ammunition container toward the gun, but as the remainder of the belt is closely confined by the channeled container, this will not happen. The gun never has to raise an unbalanced weight of cartridges more than is represented by the weight of the few cartridges from the terminus of the chute 12 to the lowest point of the ammunition container, a weight which is well within the capacity of the gun and its feeding mechanism, and wholly comparable to the weight which it is required to lift from the bottom of an ordinary ammunition box.

What I claim as my invention is:

1. An ammunition container for an aircraft machine gun mount of the type which comprises a hollow sphere open at one side, and slotted across its opposite surface, and tiltably mounted upon an axis disposed diametrically of the slot, an outer ring supported within and tiltable relative to the sphere about an axis normal to the plane defined by the slot, and an inner ring coplanar with the outer ring and rotatable relative thereto about their common axis, and an arm supported from the inner ring, disposed parallel to such common axis; which ammunition container comprises a continuous chute encircling the arm and in the main sufficiently spaced from the arm to afford an appreciable field of vision about a gun supported thereon, and means disposed about the inner ring for supporting the ammunition container for movement with such ring and the arm whereby the ammunition container will move freely with but not relative to a gun supported from such arm, said means including quickly engageable and releasable means for removably engaging or disengaging said ammunition container by movement of this latter bodily through the open inner surface of the sphere in the direction of the length of said arm.

2. In combination with a gun mount for aircraft including a slotted enclosure open to the interior of the aircraft, a gun support therein for supporting a gun protruding through and traversable along the slot, a ring within the enclosure whereon said gun support is supported, said ring being supported from and swingable relative to the enclosure upon a diametrical axis which is normal to the slot, thus to traverse the gun, an ammunition container which extends along the ring, and which in the main is spaced from the gun support to afford an appreciable field of vision about a gun supported upon such support, but including a feed chute leading to the gun's feed opening; and means including members upon the ring and within the enclosure, quickly engageable and releasable from within the aircraft structure to support the ammunition container in feeding relation to the gun, and for movement with the gun support.

3. An ammunition container for an aircraft machine gun mount of the type which comprises an enclosure open to the interior of the aircraft structure and apertured in its exterior surface for the protrusion of the gun, an arm within and supported from and for movement relative to said enclosure, whereon the gun is supported, and a ring spaced about and movable with the arm, which ammunition container is exteriorly substantially circular to fit closely to said ring, and is interiorly spaced in the main from the arm to afford an appreciable field of vision and space for other facilities about the gun supported upon such arm, but including a feed chute leading to the gun's feed opening, and means including members upon the ring, for quick engagement with and release from the ammunition container, through the interior opening in the enclosure, to support the ammunition container thus relative to the ring and in feeding relation to the gun, and for movement with the gun mount.

4. For use with a machine gun mounted upon an aircraft structure which is apertured for the protrusion of the gun's muzzle, a mount for the gun carried within the aircraft structure, and universally swingable to train the gun in elevation and azimuth, a slotted enclosure enclosing the gun mount and open to the interior of the aircraft, supported in and filling the aperture in the aircraft structure, and pivotally mounted for swinging with the gun mount about an axis disposed transversely of the enclosure and in a plane including its slot, the gun mount being mounted for swinging relative to the enclosure about an axis normal to the first axis, to traverse a gun upon the mount along the enclosure's slot, and means to supply ammunition to the gun, comprising a container disposed at each side of and beneath the gun, and in the main spaced from the gun and gun mount to afford an appreciable field of vision, especially above and at each side of the gun, but including a feed chute leading to the gun's feed opening, and means within the enclosure spaced outwardly from the gun, and movable with the universally swingable gun mount, quickly engageable and releasable through the interior opening of the enclosure to support said ammunition container in the specified relation to the gun, in all positions of the latter.

5. For use with a machine gun mounted upon an aircraft structure which is apertured for the protrusion of the gun's muzzle, a mount for the gun carried within the aircraft structure, pivot means supporting the gun mount from the aircraft structure for swinging movement about two axes at right angles to each other, a wind shield through which the gun projects, filling said aperture, and means to supply ammunition to the gun, comprising a container disposed at each side of and beneath the gun, and in the main leaving clear the space above the level of the gun to afford an appreciable field of vision, but including a feed chute leading to the gun's feed opening, and quickly engageable and releasable means supported in common with the gun mount to move with the latter about each axis, and accessible from within the aircraft structure, to support the ammunition container for movement with the gun, always in feeding position regardless of aiming movements of the gun.

6. In combination with a gun mount for machine guns upon an aircraft including an arm disposed parallel to the gun, an ammunition container comprising a member forming a channel of a width corresponding generally to the diameter of a single cartridge, spaced outwardly from and surrounding and fixed for movement with the arm and a gun supported thereon and fixed in a plane substantially normal to the longitudinal axis of the gun.

7. In combination with a gun mount for machine guns upon an aircraft including an arm disposed parallel to the gun, an ammunition container comprising a member forming a channel of a width corresponding generally to the diameter of a single cartridge, spaced outwardly from and surrounding and fixed for movement with the arm and a gun supported thereon and fixed in a plane substantially normal to the longitudinal axis of the gun, and a case and link receiver disposed within the space inside of said channel.

8. A gun mount for a machine gun upon an aircraft housed within an enclosure, including a gun-supporting member and a support therefor, with relation to which said member is mounted for universal relative rotation about two axes disposed angularly with respect to each other, and each with respect to the axis of the gun barrel, an ammunition container disposed in a plane substantially at right angles to and encircling the gun barrel, sufficiently spaced from the latter to allow an appreciable field of vision about the gun, and supported from said support for universal movement jointly with said gun-supporting member, whereby in all positions of the gun the encircling ammunition container remains in a plane at right angles to the gun barrel, and a case and link receiver within the encircling ammunition container supported for movement with said gun-supporting member, the enclosure surrounding the ammunition container, the receiver, the gun-supporting member and the associated part of the gun, and through which the gun's muzzle protrudes.

9. A machine gun mount for aircraft housed within an enclosure, including a gun-supporting member swingable to aim the gun, an ammunition container encircling a gun supported thereon disposed in a plane substantially normal to the longitudinal axis of the latter, and common means rigidly interconnecting said member and the ammunition container for such swinging movement conjointly, and in such relationship in all such swung positions, the enclosure surrounding the ammunition container, the gun-supporting member, and the associated part of the gun, and through which the gun's muzzle protrudes.

10. A machine gun mount for aircraft housed within an enclosure, including a member whereon the gun is supported, for recoil movement relative to said member, means supporting said member for aiming movement of the gun an ammunition container fixedly mounted relative to and movable with said member and terminating in a flexible chute directed towards the feed opening of such a gun, and means to secure the end of the chute against movement relative to, and for recoil movement with the gun, the enclosure surrounding the ammunition container, the flexible chute, the gun-supporting member, and the associated part of the gun, and through which the muzzle of the gun protrudes.

11. In combination with a machine gun mount for aircraft including a gun-supporting member, means supporting said member for conjoint traversing swinging of said member and of a gun supported thereon, an ammunition container encircling a gun thus supported and supported in a plane normal to the axis of the gun barrel, and spaced sufficiently outwardly from such barrel to afford an appreciable field of vision about the same, a case and link receiver beneath a gun thus supported and within the encircling ammunition container, said ammunition container and said receiver being supported from said supporting means for traversing movement conjointly with said member and the gun, the swingable supporting means including an enclosure surrounding the ammunition container, the receiver, the gun-supporting member, and the associated part of the gun, and through which the muzzle of the gun protrudes.

12. In combination, a gun mount for aircraft including an arm disposed beneath and extending lengthwise of and parallel to the gun, and constituting the support therefor, a supporting structure, two legs integrally and rigidly con-

nected to and diverging downwardly from the forward end of said arm and then extending rearwardly, spaced below said arm, and secured in cantilever fashion to said supporting structure, constituting the sole immediate support for the arm, and an arcuate ammunition container disposed in the annular space left between said arm on its radially inner side and the rearwardly extending ends of said legs on its radially outer side.

13. In combination, a gun mount for aircraft including an arm disposed beneath and parallel to the gun, and constituting the support therefor, two legs rigidly connected to and diverging downwardly from the forward end of said arm and then extending rearwardly, spaced below said arm, constituting the immediate support for the arm, an ammunition container disposed in part at one side of the gun and in part at its opposite side, the two parts being connected, in the space beneath the arm, to form a channel for a belt of ammunition, and a case and link receiver extending lengthwise of the gun, in the space between said legs, beneath the arm, and above said channel.

14. In combination with an enclosure formed as a body of revolution of a size and shape to fill a corresponding aperture in the skin of an aircraft structure, and open to the interior of the aircraft, a rigid gun mount arm fixed within the enclosure to support a gun protruding from the enclosure, and means supporting the enclosure and the arm for conjoint swinging to aim the gun, a rigid, hollow case and link receiver fixed entirely within the enclosure, and itself open at its rear end, and a flexible sleeve connected to the rear end of the receiver, of a length to cover such rear end when folded thereacross, or to extend, when unfolded, beyond the interior opening of the enclosure, for discharge of the contents into a receptacle held outside of the enclosure.

15. In combination with a gun support and means supporting the same for tilting, relative to a supporting aircraft structure about two axes relatively angularly disposed and each normal to the plane defined by the other such axis and the axis of the gun barrel, an ammunition container substantially encircling the gun support, at a distance from a gun supported thereon, especially above and at each side of the gun barrel, to afford an appreciable field of vision about the gun, a slotted enclosure enclosing said ammunition container and gun support, and through which the gun protrudes, said enclosure filling a correspondingly shaped aperture in the skin of an aircraft structure, and being formed as a hollow body of revolution, the generating axis whereof lies in the plane defined by its own slot, and coincides with one of the tilting axes of the gun support, and generally with the plane of such aperture, whereby the enclosure and gun support tilt together about such common axis, the gun support in tilting about the other axis traversing the gun along the slot in the enclosure, and means within the enclosure, accessible through the latter's interior opening, and mounted for tilting with the gun support about each such axis, for removably supporting the ammunition container always in a plane normal to the axis of the gun barrel, in all tilted positions of the latter.

16. In a mount for a machine gun upon an aircraft, a ring, a support whereon the ring is mounted for movement to aim the gun, a gun support fixedly supported from said ring to carry a gun disposed axially of said ring for aiming movement therewith, and a generally arcuate ammunition container conforming to the curvature of a substantial portion of said ring and held rigidly therewith for conjoint movement with said ring and with said gun support, but affording an appreciable field of vision immediately above a gun carried by said support.

17. In a gun mount, a two-part ring including a radially inner part, a radially outer part, and means interposed between said inner and outer ring parts guiding them for relative rotation, a gun support mounted rigidly upon said inner ring part to carry a gun extending generally axially through said ring, and an ammunition container rigidly held on said inner ring part for conjoint movement with said gun support by movement of said inner ring part with respect to said outer ring part to effect aiming of a gun carried by said support, said ammunition container including an arcuate portion disposed beneath said gun support of a length axially of said ring substantially equal to the length of a cartridge, and of a width radially of said ring substantially equal to the diameter of a cartridge, and a member extending upward and toward the center of the ring from said arcuate portion of the ammunition container, defining a passage for feeding of cartridges from said ammunition container to a gun carried by said gun support.

18. In a gun mount, a two-part ring including a radially inner part, a radially outer part, and means interposed between said inner and outer ring parts guiding them for relative rotation, a gun support mounted rigidly upon said inner ring part to carry a gun extending generally axially through said ring, and an ammunition container rigidly held on said inner ring part for conjoint movement with said gun support by movement of said inner ring part with respect to said outer ring part to effect aiming of a gun carried by said support.

19. In a mount for a machine gun upon an aircraft, a ring, a support whereon the ring is mounted for movement to aim the gun, a gun support fixedly supported from said ring to carry a gun disposed axially of said ring for aiming movement therewith, and an annular ammunition container conforming to the curvature of said ring and held rigidly therewith for conjoint movement with said ring and with said gun support, but spaced radially outwardly above said gun support to afford an appreciable field of vision between said container and a gun carried by said support.

20. In a mount for a machine gun upon an aircraft, a ring, a gun support mounted rigidly upon said ring in position to carry a gun extending generally axially through said ring for aiming movement with said support, means supporting said ring for movement to effect aiming of a gun carried by said support, an annular ammunition container mounted upon and conforming generally to the contour of said ring, defining an annular passage of a width radially substantially equal to the diameter of a cartridge, and of an axial extent substantially equal to the length of a cartridge, for reception of cartridges therein disposed generally perpendicular to the plane of said ring, and a member extending from said ammunition container inward to a location adjacent to said gun support, defining a passage for movement of cartridges from said ammunition container to a gun carried by the support.

21. In a mount for a machine gun upon an aircraft, a gun support adapted to carry a gun munition container encircling said gun support, means interconnecting said ammunition container and said gun support for maintaining such container fixed with relation to said support in a plane substantially perpendicular to the axis of a gun carried by said support, and a member extending from the inner end of said spiral ammunition container inward to a location adjacent to said gun support, defining a passage for movement of ammunition from said container to a gun carried by said support.

22. In a mount for a machine gun upon an aircraft, a ring, a gun support mounted rigidly upon said ring in position to carry a gun extending generally axially through said ring for aiming movement with said support, means supporting said ring for movement to effect aiming of a gun carried by said support, a spiral ammunition container mounted upon and conforming generally to the contour of said ring, defining a passage of a width radially substantially equal to the diameter of a cartridge, and of an axial extent substantially equal to the length of a cartridge, for reception of cartridges therein disposed generally perpendicular to the plane of said ring, and a member extending from the inner end of said spiral ammunition container inward to a location adjacent to said gun support, defining a passage for movement of cartridges from said ammunition container to a gun carried by the support.

23. In a mount for a machine gun upon an aircraft, a gun support, a cartridge feed member extending from one side of said gun support downward and defining a passage for feeding cartridges to a machine gun carried by said support, a transverse member extending from the lower end of said cartridge feed member beneath said gun support to the opposite side thereof and defining a passage for cartridges of an extent parallel to said gun support substantially equal to the length of a cartridge and of a width substantially equal to the diameter of a cartridge, and an ammunition container connected to said transverse member on the side of said support remote from said feed member, for supplying cartridges thereto, and means rigidly interconnecting said ammunition container and said gun support for conjoint movement during aiming of a gun carried by said support.

24. In combination with an arm whereon a machine gun is supportable, disposed generally lengthwise of the arm, an ammunition container for such a gun including two enclosures, one extending upward at each side of the arm, a member interconnecting said two enclosures below the arm and defining a passage of an extent parallel to the arm substantially equal to the length of a cartridge and of a width substantially equal to the diameter of a cartridge, so that belts of ammunition will run freely from the space within one enclosure to the space within the other, the two enclosures being of approximately equal volume, so that when full the weight of ammunition in one will tend to equalize the weight of ammunition in the other, and a feed chute extending to the gun's feed opening from only one of said enclosures.

25. An ammunition container for machine guns, comprising a storage casing of a length substantially equal to the length of a cartridge, a plurality of superposed shelves extending from one side wall of said casing outwardly for a portion only of the width of the casing, adapted to support a belt of cartridges folded back and forth across the width of said casing, and a cartridge feed member connected to the bottom of said casing and extending upward therefrom to a location adjacent to a machine gun, and defining a passage for movement of the cartridge belt from the bottom of said storage casing to such a machine gun.

26. An ammunition container for machine guns, comprising a storage casing of a length substantially equal to the length of a cartridge, a plurality of superposed shelves extending from one side wall of said casing outwardly for a portion only of the width of the casing, superposed shelves extending outwardly from the opposite wall of said casing at heights staggered relative to said first shelves for a distance less than the width of the casing, said shelves being adapted to support a belt of cartridges folded back and forth across the width of said casing from a shelf on one side to the shelf next below on the opposite side, and a cartridge feed member connected to the bottom of said casing and extending upward therefrom to a location adjacent to a machine gun, and defining a passage for movement of the cartridge belt from the bottom of said storage casing to such a machine gun.

27. An ammunition container for machine guns, comprising a storage casing of a length substantially equal to the length of a cartridge, a plurality of superposed shelves spaced vertically a distance equal to substantially twice the diameter of a cartridge, and extending outwardly from one wall of said casing a distance equal to substantially half the casing width at the position of the respective shelves, superposed shelves extending outwardly from the opposite wall of said casing at heights staggered relative to said first shelves, spaced vertically a distance equal to substantially twice the diameter of a cartridge and extending outwardly from the wall a distance equal to substantially half the width of said casing at the position of the respective shelves, said shelves being adapted to support a belt of cartridges folded back and forth across the width of said casing from a shelf on one side to the shelf next below on the opposite side, and a cartridge feed member connected to the bottom of said casing and extending upward therefrom to a location adjacent to a machine gun, and defining a passage for movement of the cartridge belt from the bottom of said storage casing to such a machine gun.

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