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MULTIPLE AMMUNITION BOXES

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MULTIPLE AMMUNITION BOXES

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This invention relates to aircraft armament and is concerned particularly with the stowage of ammunition, in continuous belts, to be carried within portions of the aircraft, an associated object being to carry the belted ammunition in relatively small increments to allow of ease of handling and loading of the ammunition into the aircraft. A further object of the invention comprises the provision of means by which the belted ammunition may be fed to an automatic gun with a minimum of drag on the gun feeding mechanism. Another object of the invention is to provide means by which a maximum amount of ammunition may be carried in the wings of an aircraft, with particular provision for utilizing available space within the tapered wing of modern combat aircraft. A further object is to provide tandem ammunition feeding provisions for guns disposed in side-by-side relationship in an aircraft wing, along with feed chute means serving the guns from respective ammunition containers.

Further objects of the invention will become apparent in reading the annexed description in connection with the drawings, in which:

Fig. 1 is a plan of a pair of machine guns and the ammunition feed provisions of the invention, as disposed in a tapered aircraft wing which is shown in dotted lines;

Fig. 2 is a front elevation of the guns and ammunition feed provisions, partly in section, indicated with relation to the aircraft wing shown in dotted lines;

Fig. 3 is a perspective elevation of one of the ammunition feed boxes;

Fig. 4 is a diagrammatic perspective elevation showing the mode of packing belted ammunition in the ammunition boxes; and

Fig. 5 is a perspective view of a modified box construction.

In Figs. 1 and 2, a wing 10 is indicated in dotted lines, the wing being tapered in plan form as shown in Fig. 1, and in thickness as shown in Fig. 2. Chordwise of the wing, two automatic guns 11 and 12 are shown in side-by-side relation, the inboard gun 11 being disposed a short distance to the rear of the outboard gun 12 by an amount slightly greater than the length of one of the cartridges adapted to be fed to the gun. Suitable mounting provisions indicated at 13 and 14, secure the guns within the wing structure. The guns are remotely and selectively operated by means of control devices, not shown, which are well known in the art.

Within the wing and extending span-wise thereof toward the wing 10 are a plurality of ammunition boxes 15, 16, 17, and 18 arranged in end-to-end relation to serve the outboard gun 12, while in tandem relation with said boxes is another set of boxes 19, 20, 21, and 22 arranged in end-to-end relation and serving the inboard gun 11. The inboard box 15 is provided with a feed chute 24 registering with the feed port on the outboard side of the gun 12, while a feed chute 25 cooperating with the ammunition box 19 bridges the gun 12 and registers with the feed port on the inboard side of the gun 11. Each of the boxes 15 to 22 is provided with a central substantially vertical partition 27 dividing the box into two compartments, the upper end of each partition 27 carrying a roller 28 supported in suitable bearings 29. Also rollers 30, supported in bearings 31, are disposed at the upper ends of each end partition of each ammunition box. Each box, when removed from the aircraft, may be loaded independently with an ammunition belt of appropriate length to fill the box, the belt being threaded or reeled into each box compartment in the manner shown in Figs. 2 and 4. The outboard end of the belt starts from the outboard roller on each box and is led down to the bottom of the compartment close to the outer partition. Thence the belt is laid in layers to fill the compartment, the uppermost layer passing over the partition roller 28 down to the bottom of the inner compartment whence it is again laid in layers to reach the top of the box. When all boxes are similarly loaded they may be stowed in the aircraft independently of one another and the free ends of the belts in the boxes are joined to the adjacent free ends of the belts in the adjacent boxes. This jointer of belts may be readily accomplished through the fact that the belts are composed of interlocking links through which the cartridges pass, the cartridges serving as pivots at the ends of each link. It is merely necessary, to join belts, to remove an end cartridge from one belt, assemble the link openings in the belt ends in aligned relationship, and re-insert the cartridge by which the belt continuity is established.

Upon operation of a machine gun, the ammunition compartments will be emptied sequentially from the inboard compartments toward the outboard compartments and as each compartment is emptied, the ammunition belt rides over the rollers 28 and 30 of the boxes which afford adequate anti-frictional support to minimize drag on
the gun feeding mechanism as the ammunition supply diminishes and as the inboard boxes are emptied.

Each ammunition box is provided with end lips 35, as shown in Fig. 3, which rest upon recessed portions of the upper side of cross members 36 which are structural parts of the wing 18. In this way when the length of ammunition belt in each box is connected to the adjacent box or boxes it passes over the recessed portion of each adjacent structural member 36 thereby remaining within the confines of the wing. As shown in Fig. 1, the boxes are provided with covers 37 hinged to the sides of the boxes, and folding handles 38 are secured to the boxes to facilitate handling. In the arrangement shown, boxes 15 and 19, 16 and 20, 17 and 21, and 18 and 22 form tandem pairs which may be installed and removed jointly and accordingly, the handles 38 for the boxes are preferably disposed close to the adjacent sides of respective pairs of boxes. If desired, each tandem pair of boxes 15, 19, etc., may be joined together or constructed as a unitary box, to reduce the number of boxes to be handled, e.g., as illustrated at 40 in Figure 5. This consolidated box is otherwise similar to a pair of boxes 15 and 19 and accordingly includes the end lips 42 and rollers 26 and 39 as in the single boxes. The use of consolidated or single boxes would depend largely on the weight of the loaded boxes to allow of ease of handling. In Fig. 2 it will be noted that the inboard box 15 is quite deep while the outboard boxes become successively shallower in conformity with the thickness of the wing as it tapers from its root toward its tip. Thus, maximum ammunition capacity is secured within the wing.

Actual testing with an installation of this character proves that a large amount of ammunition can be successively carried in a succession of ammunition boxes without any danger of failure to feed to the gun. Furthermore, by the use of a continuous belt for the large stock of ammunition, the scope of a fighting plane's activity may be considerably broadened.

While I have described my invention in detail in its present preferred embodiment, it will be obvious to those skilled in the art, after understanding my invention, that various changes and modifications may be made therein without departing from the spirit or scope thereof. I aim in the appended claims to cover all such modifications and changes.

I claim as my invention:

1. In an aircraft wing having a pair of side-by-side automatic guns mounted therein, a plurality of ammunition boxes disposed spanwise within said wing in end-to-end relation, each box having a forward compartment in line with the ammunition feed chute of one gun and a rear compartment in line with the ammunition feed chute of the other gun, each of said boxes being removable from the wing independently of the other boxes, and each of said boxes being independently loadable with a folded length of an ammunition belt in each of its compartments respectively joinable with the length of belt in each adjoining forward or rear compartment.

2. In an aircraft wing having a gun mounted therein and having a plurality of spaced transverse structural members for said wing, a plurality of ammunition boxes disposed in end-to-end relation from said gun and disposed within said wing, each of said boxes being supported by and extending between a pair of said transverse structural members and being removable from said wing independently of the other boxes, each of said structural members having a recessed portion on its upper side, and an individual folded length of belt-carried ammunition separately loaded within each box, the length of belt within each adjoining box within said wing being connected in series over the adjacent ends of said boxes and over the recessed portions of said supporting structural members to form a continuous length of belt-carried ammunition for said gun feedable thereto from the box nearest the gun all within the confines of the wing.

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