July 26, 1949. C. B. PEARSON ET AL 2,477,264

FLEXIBLE FEED CHUTE

Filed May 13, 1944 3 Sheets-Sheet 1

Fig. 1.

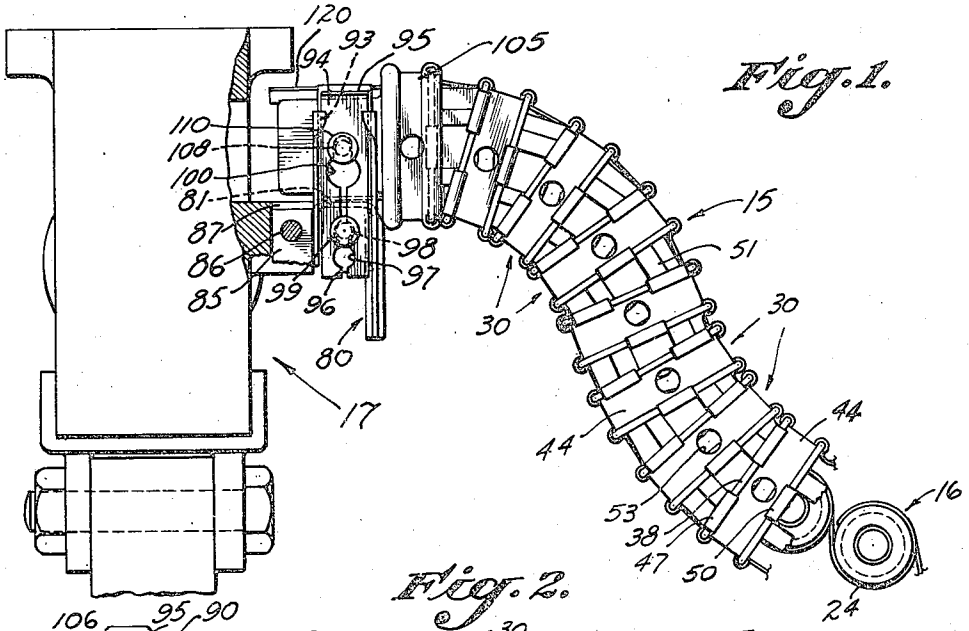

Fig. 2.

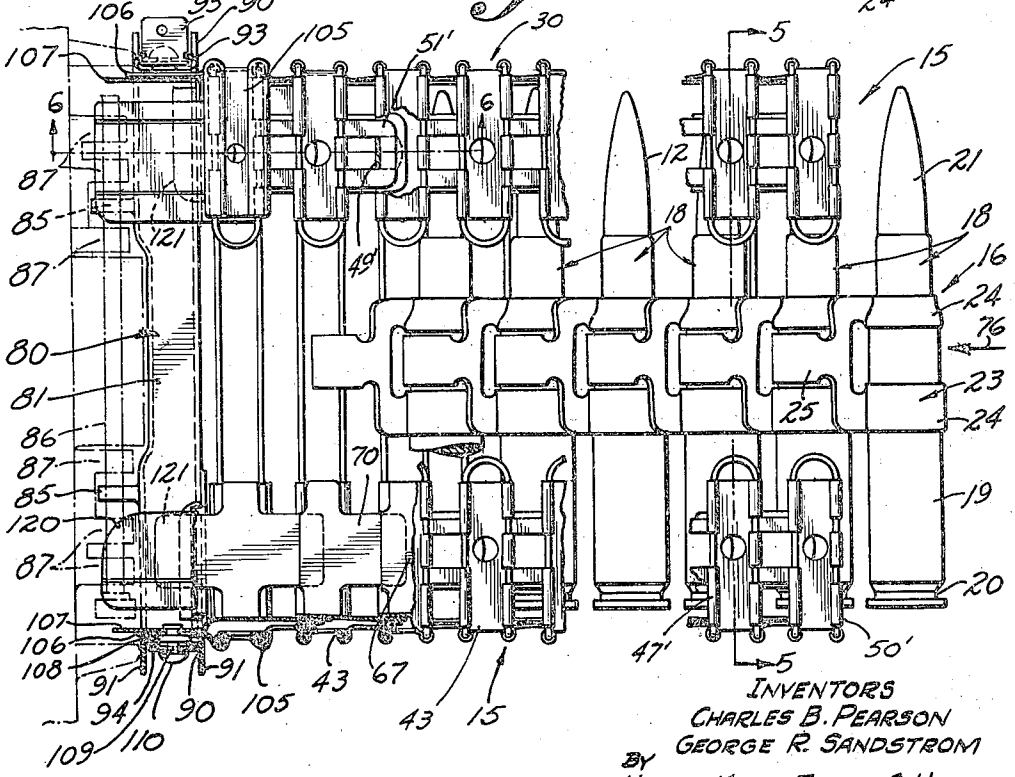

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Fig. 3.

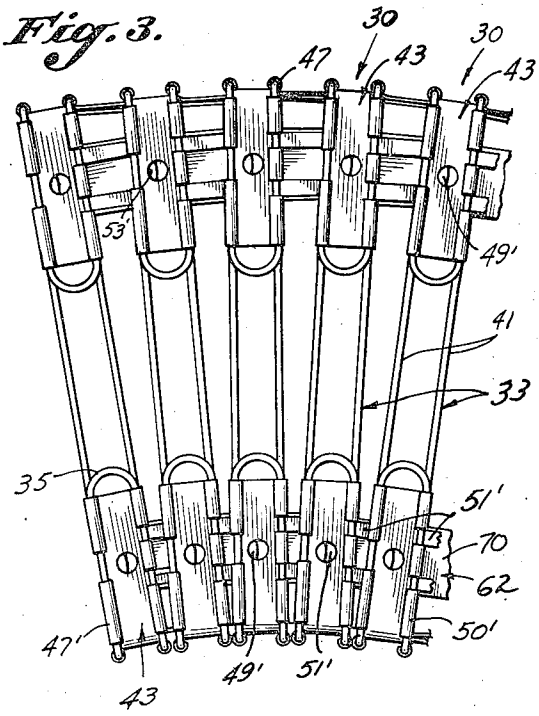

Fig. 4.

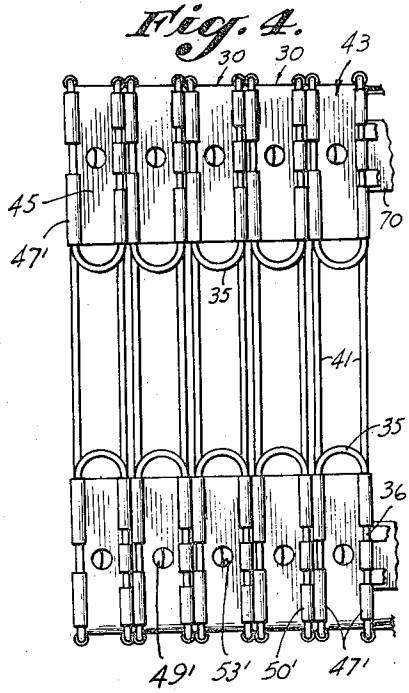

Fig. 5.

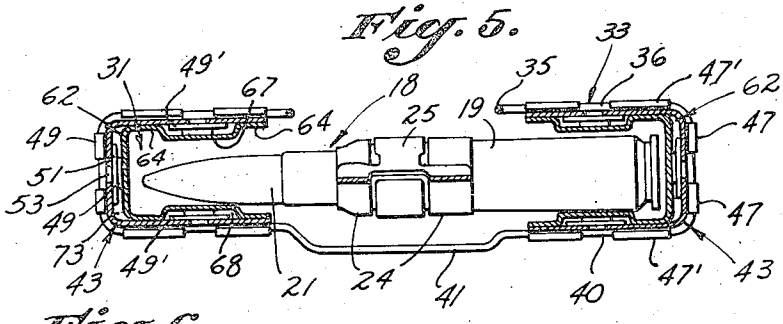

Fig. 6.

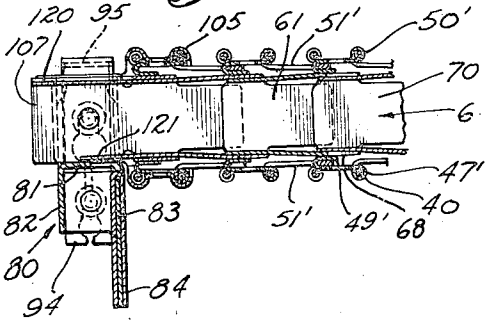

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Fig. 7.

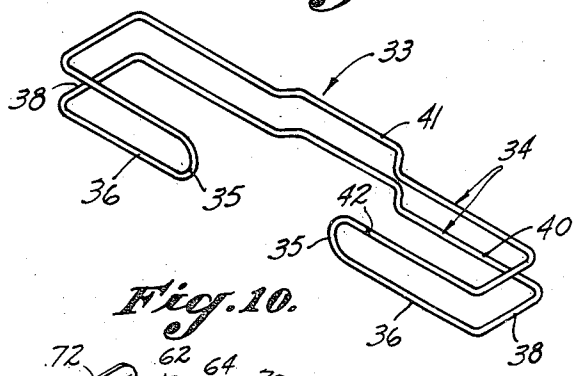


Fig. 8.

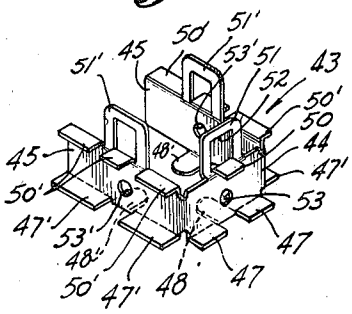


Fig. 10.

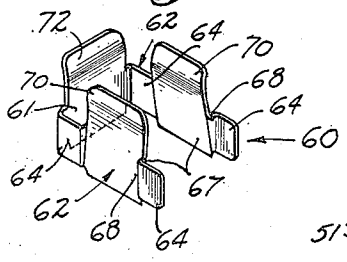
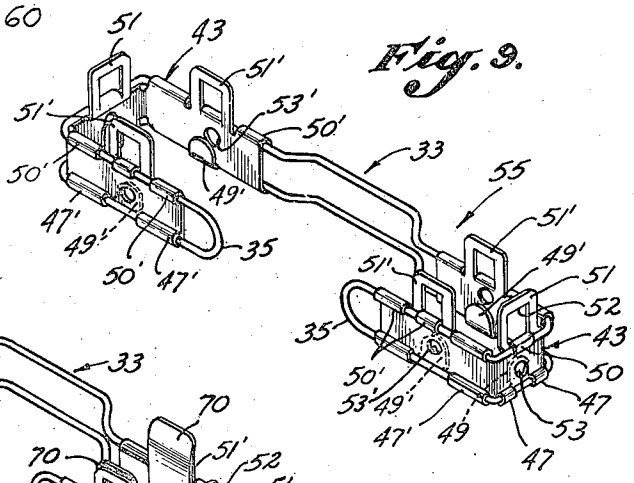


Fig. 9.



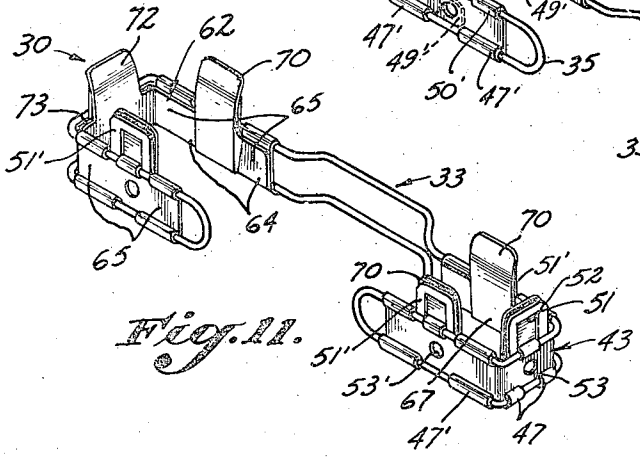


Fig. 11.

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UNITED STATES PATENT OFFICE

2,477,264

FLEXIBLE FEED CHUTE

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Application May 13, 1944, Serial No. 535,476

7 Claims. (Cl. 193—25)

1

Our invention relates to a flexible or expansible structure for guiding the movement of a flexible member. More particularly, the invention relates to a flexible feed chute for ammunition belts and the like, and will be described in this connection.

In general, the structure may act as a conduit, chute, conveyor, duct, or the like for guiding a flexible member. The term "flexible member" is used in this specification in a broad sense, comprehending a unitary or articulated member or merely a series of adjoining articles, whether or not they are interconnected.

The invention finds particular utility in the guidance of an ammunition belt in its movement from an ammunition box to an automatic gun, such as a machine gun or cannon, particularly where the automatic gun is mounted for universal movement, although the invention is also very useful with fixed-mount automatic guns. The general problem in this art is to guide the ammunition belt to the gun while preventing kinking or undue bending of the belt and, at the same time, to feed the ammunition into the gun at a proper angle.

When applied as a feed chute for an automatic gun, the invention includes among its objects the provision of an improved feed chute which will flex in various directions in response to forces of low magnitude so as not to interfere with the manipulation of the gun; the provision of an improved feed chute which is limited in its bending so that the ammunition belt guided thereby will not bind, jam, or become bent in a radius or through an angle shorter than that for which the ammunition belt was designed; the provision of an improved chute of extremely sturdy and long-wearing construction in which, if desired, the ammunition belt can be moved in either direction without danger of binding, jamming, or marring any portion of the cartridges or the structure interconnecting same; the provision of an articulated feed chute formed of a plurality of assembled identical units; the provision of an improved articulated chute in which any damaged or worn unit can be removed and replaced without disjoining all units of the series; the provision of an improved chute exposing, and making accessible throughout its length, a portion of the ammunition belt to facilitate inspection thereof and immediate correction of any difficulty that may arise at any section of the chute as the ammunition belt passes therealong; and the provision of a chute shaped to the ammunition to provide small clearances, thus avoiding any jamming of the ammunition or any piling up thereof when an ammunition booster is employed.

2

It is also an object of the present invention to provide a flexible structure for various other purposes and having some or all of the attributes mentioned in the preceding paragraph.

It is a further object of the invention to provide a novel transverse unit which may be assembled and disassembled with identical units to form a passage, and to provide a novel interconnecting means for expansibly interconnecting adjacent transverse units.

Still a further object of the invention lies in the making of such a transverse unit by employment of a wire frame and one or more attachment members, all comprising a frame structure forming a part of the transverse unit. The invention also comprehends a novel means for securing the attachment member to the frame.

It is also an object of the invention to provide a transverse unit including at least one guide member which cooperates with the guide members of adjacent transverse units in providing the conveying passage and forming guide walls for guiding the movement of the flexible member along such passage.

The flexible member moves along the passage in frictional relationship with the guide members, and it is desirable to reduce the frictional forces so that the flexible member can be drawn through the chute by application of a minimum force. In this connection, it is an object of the present invention to provide guide members having a limited frictional contact with the flexible member. In its preferred embodiment, the invention comprehends guide members providing lands of limited dimension transverse to the passage for guiding the flexible member. It is also an object of the invention to provide a cavity beneath such lands for the means interconnecting the transverse units of the chute.

Further objects and advantages of the invention will be evident to those skilled in the art from the following description of an exemplary embodiment as applied to the problem of guiding an ammunition belt in its movement to a machine gun.

Referring to the drawings:

Figure 1 is an elevation of a machine gun viewed from the rear and supplied with ammunition through the chute of the invention;

Figure 2 is a plan view of the expanded chute, with sections broken away;

Figure 3 is a fragmentary plan view indicating

how the chute may be flexed longitudinally in the plane thereof;

Figure 4 is a similar fragmentary plan view showing how the chute may be contracted or compressed longitudinally;

Figure 5 is a transverse section of the chute, taken as indicated by the line 5—5 of Figure 2;

Figure 6 is a fragmentary sectional view, taken along the line 6—6 of Figure 2; and

Figures 7 to 11 represent elements used and steps employed in the making of the complete transverse unit (shown in Figure 11), Figure 7 being a perspective view of the wire frame, Figure 8 being a perspective view of an attachment member, Figure 9 being a perspective view of a frame structure consisting of the frame assembled with two attachment members, Figure 10 being a perspective view of a guide member, and Figure 11 showing the complete transverse unit with two guide members assembled in the frame structure.

The drawings show a feed chute of the invention, generally designated by the numeral 15, for conveying an ammunition belt 16 from an ammunition box (not shown) to a machine gun 17. The ammunition belt 16 is of conventional design and includes a plurality of cartridges 18, each consisting of a cylindrical shell 19 providing an operating groove 20, the shell 19 tapering to a reduced diameter to embrace a projectile 21.

The ammunition belt 16 is of the disintegrating type in which the shells 19 are interconnected by a series of sheet metal links 23. Each of the links 23 is formed with two loops or circular bands 24 encompassing one of two adjacent cartridges and is formed with a third loop or circular band 25 encompassing the other of such adjacent cartridges. In effect, each cartridge serves as a hinge pin for interconnecting two of the links 23. When the gun 17 automatically removes the cartridges in sequence from the ammunition belt 16 in the course of rapid fire, the individual links are released in sequence.

The links 23 of the ammunition belt 16 are shaped and dimensioned to afford a predetermined degree of flexure in all directions to permit twisting and turning of the ammunition belt, as may be required to follow the movement of the gun in various directions. The permissible degree of flexure of the ammunition belt 16 is definitely limited and any force that tends to bend the loaded ammunition belt in any direction beyond the permissible degree will cause, or tend to cause, the ammunition belt to bind, jam, separate, or become permanently deformed. The chute 15 of the invention is designed to prevent bending beyond such permissible degree and to guide the ammunition belt to the gun 17 either exclusively by forces imparted to the belt by the gun or, as is known in the art, by employment of suitable boosters. In either event, it is very desirable that the ammunition belt move through the chute with a minimum of frictional retardation, and the invention provides for a minimum frictional contact between the ammunition belt 16 and the chute 15, as will be hereinafter described.

Generally speaking, the chute 15 is made up of a plurality of transverse units or structures, indicated generally by the numeral 30 and best shown in Figure 11. The complete chute 15 is formed by stacking or pressing together a plurality of these transverse units 30 to form a member-guiding passage 31 (best shown in Figure 5) guiding the movement of the ammunition belt 16 or other flexible member. The units 30 are transverse units in the sense that they extend substantially transversely with reference to the member-guiding passage 31 or with reference to the direction of movement of the ammunition belt 16, each unit forming a part or section of the complete passage. Each transverse unit is constructed and assembled as best shown in Figures 7 to 11.

Referring particularly to Figure 7, the foundation or skeleton of each transverse unit comprises a frame of wire, generally indicated by the numeral 33, which is bent to such a shape as will determine the general cross-sectional configuration of the member-guiding passage 31. In effect, the frame 33 comprises two transverse elements or portions 34 spaced longitudinally with reference to the passage 31 and joined by turns or longitudinal portions 35, serving at this point to hold the transverse elements apart and in substantially parallel relationship. Each transverse element or portion 34 includes two face sections 36 extending sidewardly from the turns 35, two side sections 38 extending substantially at right angles to the face sections, and one base section 40 extending generally parallel to the face sections 36. As best shown in Figures 5 and 7, each base section 40 provides a central portion 41 bent away from the face sections 36 to insure clearance between the links 23 of the ammunition belt and the frame 33. Also as best shown in these figures, the side sections 38 of each transverse element 34 are preferably of slightly different length, the shorter section being at that side of the ammunition chute 15 which is to receive and guide the projectiles 21 of the cartridges 18. Correspondingly, the distance across the passage 31 is less on one side of the chute than on the other, a particularly desirable feature. This difference in height of the two sides of the passage 31 can, if desired, be accentuated to such a degree as to preclude improper or reversed threading of the ammunition belt in the chute. Further, the narrower projectile-guiding portion of the passage limits the widthwise motion of the projectiles and thus the possible pivoting motion of each projectile about a point in the shell 19 when the ammunition belt is twisted longitudinally. In addition, this dissimilar-height feature is particularly desirable when the ammunition is pushed along by a power booster as it prevents the ammunition from piling up and jamming when thus forcefully advanced along the chute.

In practice, the pairs of parallel transverse elements 34 are formed from a single length of wire having an end 42 and bent into the configuration shown in Figure 7, the opposite end abutting against the end 42 and, if desired, being welded thereto, though this is not essential in view of the fact that the junction of the two ends is later covered by a tab of the attachment member, to be presently described.

Within each side portion of the frame 33 is disposed an attachment member, best shown in Figure 8 and indicated generally by the numeral 43. In the preferred embodiment of the invention, the function of such attachment members is twofold. In the first place, they are attached to and retain the two transverse elements 34 in definitely spaced relationship. In the second place, the attachment members preferably provide means for linking the two adjacent transverse units 30 together in an expansible and flexible manner.

Each attachment member 43 is formed of thin sheet metal punched and bent to be of general U-shape, as shown in Figure 8. For example, each attachment member 43 includes a side section 44 forming the base of the U and adapted to engage a pair of the side sections 38 of the frame 33. Each attachment member 43 also includes two arm sections 45 extending substantially at right angles to the side section 44 and extending, respectively, in contact with pairs of the face sections 36 and pairs of the base sections 40 of the frame 33. The side section 44 provides at one end two outwardly-extending tabs 47 adapted to be bent around the wire forming the adjacent side section 38 in a manner best shown in Figure 9. The sheet metal material originally present in the zone between the tabs 47 is bent inwardly to form a hook tab 48 which ultimately is again bent to form a hook 49, the main portion of which extends generally parallel to, but spaced a slight distance from, the inner surface of the side section 44. The side section 44 provides at its other end a single tab 50 bent outward, as shown in Figure 8. This tab is subsequently bent additionally to encircle the adjacent side section 38 of the frame 33, as best shown in Figure 9.

The side section 44 also provides an extension comprising a link 51. This link is preferably peripherally-continuous and provides an end bar and two arms defining an opening 52 of sufficient width to receive a hook 49 of an adjacent transverse unit 30 in a manner to be subsequently described. In addition, the side section 44 provides a circular opening 53 disposed opposite the hook 49 and in such position that the extreme end of the hook 49 substantially bisects the opening.

In a similar manner, each arm section 45 provides tabs 47' and 50' adapted to be bent to encircle the adjacent wire of the frame 33. However, in this instance, three tabs 50' are employed and the end 42 of the wire of the frame 33 is preferably positioned to be covered by one of the tabs 50'. Likewise, each arm section 45 provides a hook tab 48' which is subsequently bent to form hook 49' (Figure 9) and each of the arm sections 45 also provides a link 51', similar to the link 51 previously described, as well as an opening 53'.

It will be apparent that two attachment members 43 are assembled to the frame 33 in opposite side portions thereof to form a frame structure, shown in perspective in Figure 9 and indicated generally by the numeral 55. It will be apparent, also, that the two attachment members are of slightly different size to compensate for the difference in height of the passage 31 on opposite sides thereof; otherwise, the two attachment members are substantially identical. Also, it will be noted that all of the links 51 and 51' extend in the same direction from the frame 33. These links can lie substantially in the plane of the particular section (44, 45, 45) from which they extend but it is sometimes preferable to offset inwardly in slight measure the link 51, as suggested in Figure 8, though this is not in all instances necessary. Likewise, the links 51' may be slightly offset inwardly, if desired.

The frame structure shown in Figure 9 is next assembled with two guide members of the type shown in Figure 10 to form the transverse unit 30 shown in Figure 11. Referring particularly to Figure 10, the guide member is indicated generally by the numeral 60 and is substantially

U-shaped. It provides a side wall 61 disposed to cover, and lie substantially parallel to, the side section 44 of the corresponding attachment member 43. The guide member 60 also provides two arms or cross walls, each being indicated generally by the numeral 62, disposed to lie substantially parallel with, and be attached to, the respective arm sections 45 of the adjacent attachment member. Each cross wall 62 provides attachment portions 64 in general alignment with each other and adapted to be secured to the adjacent arm section 45 of the corresponding attachment member 43, as by spot welding at points 65 of Figure 11. Between these attachment portions 64, each cross wall 62 is deformed inward to provide a land 67 to leave a cavity 68 beneath the land 67, this cavity being bounded on one side by the adjacent arm section 45 of the corresponding attachment member 43, the adjacent hook 49' being within this cavity. The land 67 may taper or curve slightly with respect to the longitudinal axis of the passage 31 which it bounds, so that the entry portion of each cavity 60 is of slightly less width than the hook-bounding portion. Such slight taper or bending is apparent from Figure 10 and aids also in maintaining a smooth articulated wall when the finished chute is flexed as in Figure 1. Each land 67 forms the base of a tongue-like extension 70 substantially flush with the land and which projects along the adjacent link 51' in covering relationship.

The guide member 60 is preferably so secured to the adjacent attachment member 43 that the side wall 61 is spaced a slight distance from the inner surface of the side section 44 of the attachment member 43. A space or cavity 73 is thus provided, shown somewhat exaggerated in size in Figure 5 for purpose of clarity. In this cavity is positioned the hook 49 of the adjacent side section 44 of the attachment member 43.

It will thus be apparent that each transverse unit 30 provides a plurality of links 51, 51', as well as a plurality of link-receiving means comprising the hooks 49, 49', the link-receiving means being respectively positioned in cavities of the transverse unit. It will be apparent, also, that another transverse unit can be stacked on top of the unit shown in Figure 11 in such way that the links and tongue-like extensions of the guide member will simultaneously enter such cavities, usually after slight inward flexure of the link-extension structures to align same with the cavities. For example, the link 51 and its adjacent extension 72 of the guide member 60 can be guided to enter the cavity 73 simultaneously. In like manner, each link 51' and its adjacent extension 70 of the guide member can be guided to enter simultaneously a corresponding cavity 68 beneath a land 67.

As each link enters its corresponding cavity, it passes between the inner face of the hook in this cavity and the adjacent face of the land. The available space for entry of such link and its adjacent extension of the guide member may substantially equal the thickness of the composite link-and-extension structure, or this structure may enter the cavity only by slight and temporary bending of that edge of the land shown lowermost in Figure 10. In any event, as the link-extension structure moves into the cavity, the end bar of the link passes the hook and the link springs outward into resilient engagement with the inner surface of the attachment member providing this hook. In this posi-

tion, any attempt to separate the two transverse units will permit separatory motion only until the end bar of the link seats against the bottom of the hook. Thus, all of the links of one transverse unit can be operatively inter-linked with the hooks of an adjacent transverse unit merely by guiding the links into the corresponding cavities and bringing the two transverse units together. An articulated chute of any desired length can thus be formed.

If, subsequently, it is desired to unlink or disconnect any pair of adjacent transverse units, this can be easily accomplished by moving such adjacent transverse units into collapsed position (shown in Figure 4) and then inserting a suitable tool, such as a small screwdriver, through the opening **53**, for example, to grasp the now-exposed end of the hook **49**, bending it temporarily toward the side section **44**. The amount of this bending of the hook is sufficient to bring the extreme end thereof to a position outside the link. If desired, the end bar of the link may also be pressed inwardly to aid this unlocking relationship. When the hook and the end bar are in this relationship, the transverse units are spread a slight distance until the end of the hook overlaps slightly the end bar of the link, after which the tool can be removed and the transverse units disjoined at this point merely by drawing them apart. If the transverse units are to be completely unlinked, the hooks **49** and **49'** of one of the attachment members are moved sequentially into unlocking relationship with the corresponding links **51** and **51'**, whereupon this side of the transverse units can be separated. A similar procedure is then followed as regards corresponding attachment members on the other side of the chute.

From the above, it will be apparent that the chute can be collapsed longitudinally (see Figure 4), expanded longitudinally (see Figure 2), flexed longitudinally a limited amount in the transverse plane of the passage **31** of the chute (see Figure 3), or flexed laterally a limited amount so that the central plane of the passage is concentric with an axis outside the passage (see Figure 1). This complete flexibility makes possible bending the chute in geometric patterns (e. g., as a spiral, helix, circle, etc.) and, also, bending in composite geometric patterns (e. g., as a combined spiral and helix, or other complex configuration). In all instances, the chute causes the ammunition belt **16** to feed into the automatic gun **17** at a proper angle, usually in a direction at right angles to the gun, and the chute distributes along at least a portion of its length any necessary change in direction of the ammunition belt due to universal movement of the gun **17**.

When the chute is contracted, as shown in Figure 4, adjacent transverse units lie side by side in contact with each other. As the chute is expanded toward the position shown in Figure 2, the expansion is guided by sliding of the links within their respective cavities in frictional engagement with at least one wall of each cavity, and maximum expansion (shown in Figure 2) is determined by engagement between the end bars of the links with the bottom of the corresponding hooks. When the chute is flexed longitudinally in its plane, the links on one side of the chute will move toward or into maximum-expanded position, as shown in Figure 3, and the links on the other side of the chute will move toward or into completely collapsed position. At the same time, the links on this other side act in the nature of a pivot means, the cavities receiving the links **51'** being sufficiently larger than the links themselves to give this effect and the links **51** flexing to permit this.

When the chute is flexed laterally, as shown in Figure 1, the links **51'** on the inner and outer radii of the chute adjust themselves to extend different distances into their corresponding cavities, the links on the inner radii serving to some extent as pivots, either through flexure thereof or slight lateral movement in their respective cavities. During such lateral flexure of the chute, the side links **51** swing with reference to their associated hooks. The cavity **73** gives adequate space for such swinging and the openings **52** of the links **51** are sufficiently larger than the width of the corresponding hooks to permit this action.

The guide members **60** are formed of light spring material, usually of stainless steel or lightweight spring steel. The extensions **70**, **72** thereof are of such length as to overlap the guide member of an adjacent transverse unit, whether the chute is expanded or contracted. Note Figure 6 in this connection, which shows the relationship but which, for purpose of clarity, is exaggerated in the thickness of the material of which the attachment and guide members **43** and **60** are formed. It is a feature of the invention that the extensions **70** form continuations of the lands **67**, the extreme end of each extension extending into a cavity **68**, formed by the land of an adjacent transverse unit. Correspondingly, the lands and their extensions form an articulated rail on each side of the chute, as best shown in Figure 5. The rail on one side guides the shell **19** and the rail on the other side guides the projectile **21**. The frictional contact is lessened by the provision of such land-formed rails so that the ammunition belt can be drawn through the chute with a minimum of friction. At the same time, the lands are of sufficient width so as not to scratch, bend, or mar any surfaces of the cartridge with which they come in contact.

The employment of wire frames **33** has many advantages, including increased visibility of the ammunition belt. Also, this wire frame construction increases the overall flexibility of the chute as each transverse unit is, to some extent, flexible as between its side portions so that one side portion can be held fixed and the other turned slightly about or bent from an axis joining the two side portions. Further, the use of a wire frame permits employment of easily-made attachment members **43** employing a minimum of material in view of the inter-relationship of the parts whereby, for example, the hooks are formed from material lying between the tabs **47**.

The preferred direction of movement of the cartridge belt through the chute is opposite to the direction in which the extensions **70** project from the frame **33**, being generally downward as viewed in Figure 11 and being as indicated by arrow **76** of Figure 2. However, in practice, the guide members **60** form such smooth articulated passage walls that the direction of movement of the ammunition belt can be reversed without danger of catching on any overlapping portions of the articulated walls, even when the chute is bent in maximum transverse relationship as shown in Figure 1. This makes possible the rearward removal of the ammunition belt from the

chute without danger of injuring the cartridge or the chute.

Any desirable means may be employed for attaching the opposite ends of the chute respectively to the gun 17 and the ammunition box (not shown). In Figures 1, 2, and 6, one form of quick-release attachment means is shown, including a generally U-shaped terminal member 80. This terminal member provides a lower or bridge section 81 generally channel-shaped in vertical cross section to provide depending walls 82 and 83, the latter being extended downward below the former, as best shown in Figure 6, and being surrounded by a stiffener 84 welded thereto to form a composite wall. Extending toward the gun from the depending wall 82 are two projections 85 (Figure 2) perforated to receive rod 86 extensible through lugs 87 forming a part of the structure of the gun and serving as a means for attaching the terminal member 80 to the gun.

At each side of the passage 31 of the chute, the terminal member 80 provides upwardly-extending, channel-shaped end members 90 providing side walls 91 bent inward at their extreme upper ends to form a guide channel 93, best shown in Figure 1 and in the upper portion of Figure 2. Vertically movable in each guide channel is a locking member 94 bent outward at its upper end to form a handle or operating portion 95. As best shown in Figure 1, the lower portion of each locking member is split longitudinally by a channel 96 enlarged at 97 and 98 to provide circular openings with side walls resiliently embracing the shank of a rivet 99 extending outward from a portion of the terminal member 80. The channel 96 extends upward to the larger end of a buttonhole-shaped opening 100 for a purpose to be described, and the relationship between the shank of the rivet 99 and the locking member 94 is such that this rivet shank is resiliently retained either in the opening 97 or 98, depending upon whether the locking means is in an upper or lower position (the latter being shown in Figure 1). The width of the channel 96 is slightly less than the diameter of the rivet shank so that the bifurcations at the bottom of the locking member spread slightly as the locking member is moved from one extreme position to another. By this means, the locking member is retained in its upper or lower position without danger of change in position due to vibration, etc.

The ammunition chute itself provides means detachably connected to the terminal member 80. As best shown in Figures 1, 2, and 6, the endmost transverse unit of the assembled chute has connected thereto two generally U-shaped end members 105 beaded to correspond to the periphery of the endmost transverse unit, these end members encompassing the two attachment members 43 of the endmost transverse unit and being suitably welded thereto. Each end member 105 provides a tongue 106 extending along and welded to a tongue 107 forming a part of the guide member 60 of the endmost transverse unit but extending toward the gun in a direction opposite to the extension 70 thereof. The tongue structure formed by the welded tongues 106 and 107 carries a rivet 108 (Figure 2) providing an annular groove 109 immediately beneath a rivet head 110. This groove is of sufficient width to accommodate the bottom wall of the adjacent end member 90 and its locking member 94. The larger portion of the buttonhole-shaped opening 100 aligns with a corresponding-sized opening of

the bottom wall of the end member when the locking member 94 is in raised position so that the rivet head 110 can be moved therethrough, after which the locking member 94 is moved to its lower position, shown in Figure 1, to bring the smaller end of the buttonhole-shaped opening around the rivet, whereby the walls of the locking member at the sides of this smaller end of the buttonhole-shaped opening move beneath the rivet head 110 to prevent its withdrawal.

Correspondingly, when it is desired to attach the end of the chute to the gun, it is necessary only to place one rivet 108 in position and apply pressure between the sides of the chute to deform same temporarily in sufficient amount to dispose the other rivet within its adjacent end member 90 of the terminal member 80, whereupon release of the chute will permit this rivet to enter the aligned openings of the adjacent locking member 94 and end member 90. Thereafter, each locking member is moved downward to bring the smaller portions of the buttonhole-shaped openings into encompassing relationship to the rivet. To remove the ammunition chute from the gun, it is necessary only to lift the locking members 94 and apply inward pressure to the sides of the chute to deform same sufficient to withdraw one rivet 108 from the aligned openings, after which the other rivet can likewise be withdrawn.

With this type of attachment means, it is desirable that the cartridges and projectiles be guided laterally during their movement from the last transverse unit 30 across the terminal member 80. For this purpose, the guide member 60 of the last transverse unit provides upper and lower tongue members 120 and 121 forming continuations of the lands 67 but extending toward the gun a sufficient distance to guide the cartridges across the terminal member 80. It will be understood that the quick-release attachment means disclosed can be appropriately modified to adapt it to various guns; also, that similar quick-attachment means can be provided at the other end of the chute where it is joined to the ammunition box, whereby the entire chute can be attached and removed quickly without employment of special tools.

Various modifications and changes can be made in the invention, and the invention can be adapted to various uses apparent to those skilled in the art, without departing from the spirit of the appended claims.

We claim as our invention:

1. In combination in a flexible passage means for guiding the movement of a flexible member: a plurality of transverse elements each shaped to determine the general cross-sectional configuration of a member-guiding passage; means for expansibly linking said transverse elements for limited movement toward and away from each other; and a plurality of guide members respectively retained by said transverse elements at positions along said passage, each guide member providing a cross wall within the corresponding transverse element, each cross wall comprising an attachment portion having a face bounding an adjacent part of said passage and a land having a crest surface disposed inwardly of said passage from said face and bounding another part of said passage, each guide member including also a tongue-like extension projecting from said land in a direction longitudinally of said passage and substantially flush with the crest surface of said land, each tongue-like extension being of sufficient length to overlap the land of

an adjacent transverse element, the lands and their tongue-like extensions forming an articulated rail to guide said flexible member as it moves along said passage and keep same spaced from the attachment portions of said guide members.

2. A combination as defined in claim 1, in which each of said lands provides a cavity therebeneath and in which each of said tongue-like extensions slidably projects into the cavity of an adjacent guide member.

3. In a flexible articulated chute providing a member-guiding passage for guiding the movement of a flexible member, the combination of: a plurality of interconnected frame structures each extending substantially transversely with respect to said passage and each providing a wire frame shaped to determine the general cross-sectional configuration of said member-guiding passage, and each frame structure providing an attachment member connected to the wire frame, each attachment member providing a link and a link-receiving means, the link of each attachment member extending beyond said wire frame a sufficient distance to slidably engage the attachment member of an adjacent frame structure and to lock with the link-receiving means of such adjacent frame structure to permit limited movement of adjacent frame structures toward and away from each other; and a guide member fixed to each attachment member and providing a tongue-like extension adjacent said link and extending into overlapping relationship with the guide member of an adjacent frame structure to form an articulated wall for said passage.

4. A combination as defined in claim 3 in which said guide member comprises a thin flexible plate providing spaced attachment portions secured to said attachment member and deformed inward at a position between said attachment portions to form a member-contacting land and to form a cavity dimensioned to slidably receive both a link of an adjacent frame structure and the tongue-like extension adjacent such link, said tongue-like extension forming a flush continuation of said land.

5. In combination in a transverse unit adapted for assembly with identical units to form a flexible articulated chute providing a member-guiding passage: a wire frame providing base, side, and face sections bent to determine the general cross-sectional configuration of the member-guiding passage; a pair of substantially U-shaped attachment members within said wire frame adjacent said side sections and providing a plurality of bent tabs at least partially encompassing said wire frame to retain said attachment members to said frame; a plurality of links extending from each attachment member in a direction away from said frame, each transverse unit providing a plurality of cavities for slidably receiving said plurality of links of an adjacent transverse unit; means for limiting the movement of such links in their respective cavities of an adjacent transverse unit and guide members within and secured to said attachment members and providing a plurality of tongue-like extensions respectively extending along said links a sufficient distance to overlap the guide member of an adjacent transverse unit when assembled thereto, whereby the guide members and the extensions of adjacent transverse units cooperate in providing an articulated lining for said passage.

6. In a flexible articulated chute providing a member-guiding passage for guiding the movement of a flexible member, the combination of: a plurality of transverse elements each shaped to determine the general cross-sectional configuration of the member-guiding passage, each transverse element providing a plurality of forwardly-facing cavities disposed in spaced relationship around the periphery of said passage; means for expansibly linking said transverse elements together for limited movement toward and away from each other, said means including a plurality of hooks respectively disposed in said cavities and opening rearwardly therein and a corresponding number of links extending rearwardly from each transverse element to project slidably into the respective cavities of the immediately adjacent transverse element to link with the hooks therein and maximize the separation of adjacent transverse elements; and a plurality of guide members respectively secured within said transverse elements, each guide member including a tongue-like extension projecting rearwardly from the transverse element to which it is secured and in covering relationship with a corresponding link of this transverse element, each tongue-like extension projecting slidably into the same cavity of the adjacent transverse element as the link it covers whereby the tongue-like extensions remain in their respective cavities irrespective of bending of said chute to prevent the ends of said extensions from projecting into said member-guiding passage to interfere with movement of said flexible member therealong, said guide members and their tongue-like extensions forming articulated lining walls of said passage and said tongue-like extensions bridging between adjacent transverse elements with the ends of the extensions still disposed in their respective cavities even when said hooks engage said links to maximize the separation of adjacent transverse elements.

7. In a flexible ammunition chute for conducting to a machine gun through devious paths an ammunition belt comprising a plurality of interconnected cartridges, each cartridge comprising cylindrical shell casing and a projectile of smaller external diameter than a base portion of said shell casing, the combination of: a plurality of transverse elements disposed side by side to determine the cross-sectional configuration of an ammunition-guiding passage, each transverse element including on each side of the mid plane thereof a base section, a face section and a side section spacing said base and face sections from each other, the side section on one side of said passage being longer than the side section on the other side of said passage to space the base and face sections on said one side a sufficient distance to contact and conduct said cylindrical shell casings and to space the base and face sections on said other side a lesser distance but sufficient to contact and conduct said cartridges; means for expansibly linking said transverse elements together at a plurality of positions disposed peripherally of said passage for limited movement of adjacent transverse elements toward and away from each other at such peripheral positions; and a plurality of guide members respectively secured to said transverse elements, each guide member having tongue-like extensions extending in overlapping relationship with the guide member of an adjacent transverse element to cooperate therewith in providing an articulated lining for said ammunition-guiding

passage to guide said cartridges in their movement toward said gun.

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