Jan. 18, 1949. W. M. BURGESS 2,459,147

DISINTEGRATING CARTRIDGE BELT

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Fig. 1.

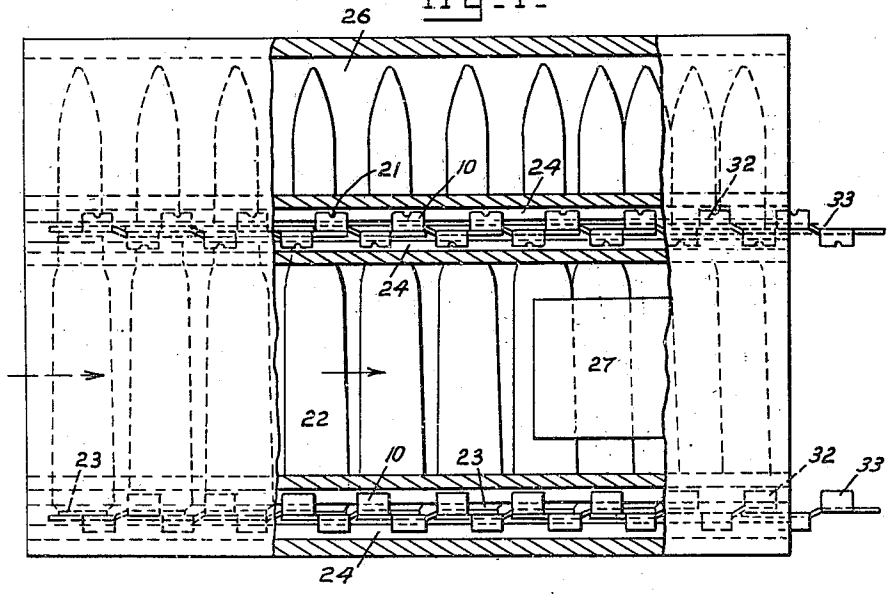


Fig. 2.

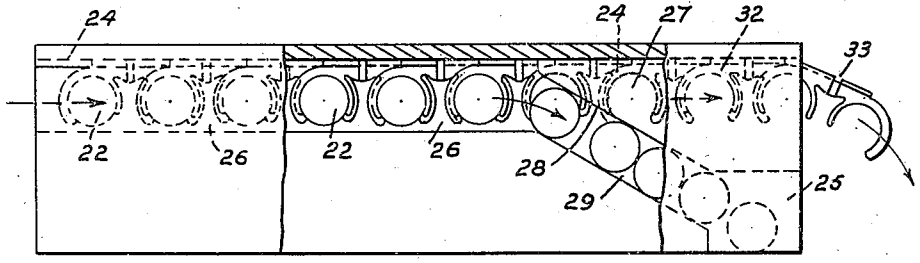
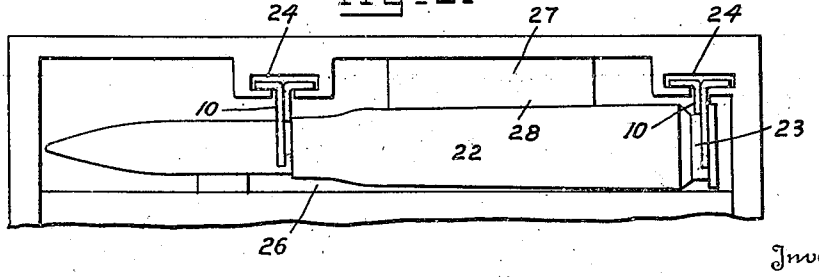


Fig. 3.



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Fig. 4.

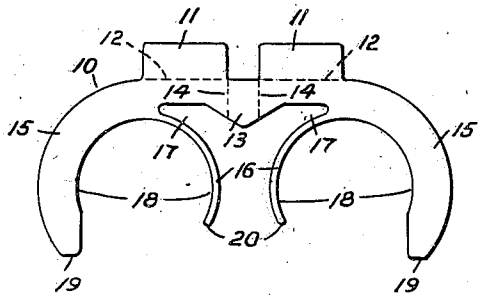


Fig. 5.

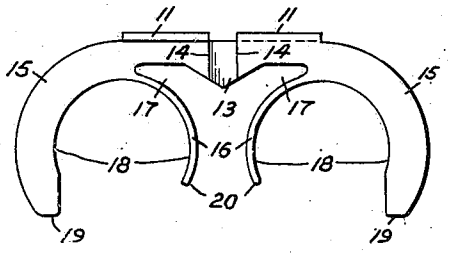


Fig. 6.

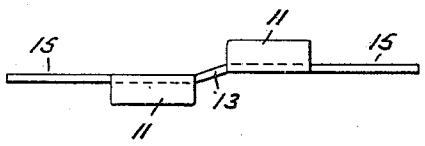


Fig. 7.

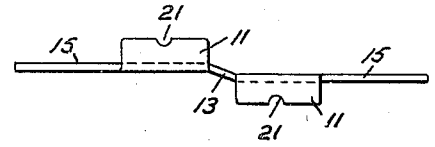


Fig. 8.

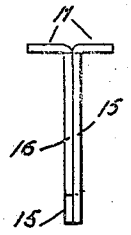
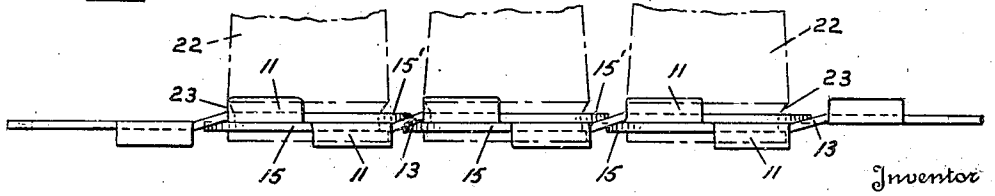


Fig. 9.



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DISINTEGRATING CARTRIDGE BELT

Wilfrid M. Burgess, Cohoes, N. Y.

Application February 26, 1942, Serial No. 432,411

4 Claims. (Cl. 89—35)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

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The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a disintegrating cartridge belt for feeding cartridges to an automatic gun.

An object of the invention is to provide an extremely flexible, metallic link belt from which the cartridges may be extracted laterally and accurately positioned in the receiver of a machine gun or rifle.

Another object of the invention is to provide a clip for a link belt which is simple in construction, inexpensive to manufacture, strong and durable.

A further object of the invention is to provide a disintegrating type cartridge belt which can be quickly and accurately assembled.

The principal object of the invention is to provide an inexpensive disintegrating cartridge belt which does not require any complicated withdrawing mechanism in a gun for extracting from the belt a cartridge which is about to be fired.

The specific nature of the invention as well as other objects and advantages thereof, will clearly appear from a description of a preferred embodiment as shown in the accompanying drawings in which:

Fig. 1 is a plan view of a portion of the belt positioned in the feed channel of a gun, parts thereof being broken away;

Fig. 2 is a side elevational view of the feed channel with parts broken away to show certain of the cartridges being stripped laterally from the clips;

Fig. 3 is a left end elevational view of a pair of clips and a suspended cartridge in the respective guide and feed channels;

Fig. 4 is a side view of one of the blanks from which a link is formed;

Fig. 5 is a view in side elevation of a preferred form of the completed cartridge clip;

Fig. 6 is a plan view of a clip for engaging the cannelure or extracting groove at the base of a cartridge case;

Fig. 7 is a plan view of a clip for engaging the neck end of a cartridge;

Fig. 8 is an end view of the clip shown in Fig. 6, and

Fig. 9 is a top plan view showing the manner in which a plurality of links are serially interconnected in the grooves at the bases of a train of spaced cartridges, portions of the cartridges being shown in phantom.

Referring to the drawings by numerals of reference, a blank 10 having the configuration shown in Fig. 4 is stamped out and its ears 11 are bent in opposite directions along the fold lines 12. This produces a clip which in side elevation ap-

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pears as represented in Fig. 5. In a preferred embodiment, the central portion of the body 13 of the blank is bent along two parallel lines 14 so as to offset a pair of wings 15 an amount slightly in excess of the thickness of the blank, see Figs. 5, 6 and 8. The wings 15 preferably have a width approximately equal to that of the angularly disposed portion of the body 13 thereby rendering the wings sufficiently rigid to resist any outward bending. Spaced resilient fingers 16 depend from the body portion 13. By choice a pair of notches 17 lie intermediate the fingers 16 so as to impart additional resiliency to the fingers.

The inner surfaces 18 of the wings 15 and the fingers 16 are arcuate to conform to the cylindrical periphery of a cartridge. The inner radius of curvature of a finger 16 is preferably slightly smaller than that of its adjacent wing 15 in order that it may exert an additional clenching action on the cylindrical portion of a cartridge case. Each wing 15 and its corresponding finger 16 comprise an open ring which is adapted to detachably receive a cartridge from a direction below and perpendicular to the plane of the ears 11. The free ends 19 and 20 respectively of a wing 15 and a finger 16 extend below their center of curvature to enable them to grip a cartridge below its axis thereby yieldingly holding it in position. The wings are preferably slightly longer than the fingers 16.

A pair of spaced clips are arranged to suspend or support a cartridge as shown in Figs. 1–3. Since the diameter of a cartridge varies between the nose and the base, the sizes of the open rings are not identical on each of the clips which carry a projectile. To distinguish between the two types of clips which are to be employed, identifying marks such as notches or tracers 21 (Figs. 1 and 7) are employed on the ears 11 of those clips which engage the neck portion of a cartridge. This feature enables a clip having a pair of plain ears as shown in Figs. 1 and 6, which is adapted to grasp the base portion of a shell, to be distinguished from one which is snapped on the smaller neck end.

A pair of adjoining links are coupled together as shown in Figs. 1 and 9 through the intermediation of a cartridge 22 which forms a pintle between the links. The flat side of a wing 15 on one clip is placed in a contiguous relationship with the flat side of a wing 15' on the succeeding clip when both are snapped on the same cartridge. When a series of spaced links are interconnected by means of a plurality of cartridges in the manner represented, an extremely flexible metallic link belt results. The chain of links bearing the distinguishing notches 21 retains the nose portions of the projectiles while the adjacent parallel chain engages the cannelures or extracting grooves 23 at the base ends of the cartridges. By

gripping the shells at these points the chains are presented in proper spaced relationship with respect to their guide channels 24 and the shells are ultimately carried into proper alignment with the receiver 25 of the gun. The offset arrangement of the wings 15 promotes the rapid assembling of a uniform, parallel belt structure.

Figs. 1–3 illustrate diagrammatically the manner in which the cartridge belt feeds into the receiver 25 of an automatic weapon. The two chains of clips enter the guide channels 24 from the left and carry the shells 22 into a feed passage 26. Before reaching the receiver 25, the central portions of the shells are engaged by a fixed cam 27 which has a declined face 28 that forces the cartridges vertically out of their positions between the wings 15 and the resilient fingers 16. The free cartridges then move down a declined guideway 29 and are presented to the receiver 25. The clips, however, continue along the extended guide channels 24 above the declined face 28 of the cam and drop out of the gun. Since the wings 15 of each individual clip are offset and the clips are arranged in a series relationship in the guideways as shown in Fig. 1, succeeding clips 32 are able to push their preceding clips 33 to the right and out of the gun. This arrangement prevents the cartridge-free clips from jamming in the guideways. In lieu of the offset pattern of the links, other means such as abutments, lugs, etc., (not shown) may be formed on the bodies of the links to push or expedite movement of those links which have been separated from their cartridges through the guide-channels 24 and out of the gun.

It will be evident from the above description of the invention that there results a simple, flexible, disintegrating type cartridge belt that is relatively inexpensive to manufacture.

I claim:

1. In a disintegrating belt link, a centrally disposed body portion, a pair of oppositely bent ears on the outer longitudinal edge of said body for positioning the link in a guideway, said ears being disposed substantially perpendicular to said body portion, a pair of wings extending from the ends of said body, a pair of spaced resilient fingers extending from said body intermediate said wings, said body having notches adjacent the bases of said fingers for increasing the length thereof, said wings and fingers having inner surfaces arranged to conform to and detachably engage the cylindrical portions of a pair of spaced cartridges, and said body having a centrally located angularly bent portion whereby one wing and finger are offset and parallel to the other wing and finger.

2. In a disintegrating belt link, a centrally disposed body, a pair of oppositely bent ears on said body for positioning the link in a guideway, said ears being disposed substantially perpendicular to the body portion, substantially rigid wings at the end of said body, a pair of spaced resilient fingers extending from said body between said wings, said wings and fingers having curved inner edges arranged to conform to and detachably engage the cylindrical portions of a pair of spaced cartridges, the radius of curvature of said fingers being slightly smaller than that of the wings, the length of said wings being greater than the length of said fingers to aid ingress of said cartridges, and said body having a centrally located angularly bent portion whereby one wing and finger are offset the thickness of the link and parallel to the other wing and finger, so that each link will travel freely in a guideway when overlapped by the wing of an adjacent link.

3. A link constituting a component of a disintegrating belt wherein parts of adjacent links are disposed in overlapped position and held in such position by the insertion of a cartridge through said overlapped parts, each link comprising, a substantially flat centrally located body portion, relatively small bent ears on said body for positioning the link in a guideway, rigid wings integral with the ends of the body and in the general plane thereof, said wings extending substantially perpendicular to the length of said body, a pair of spaced resilient fingers extending substantialy perpendicular to the length of said body and positioned intermediate said wings, said wings and fingers being arranged to form a pair of open rings having inner edges disposed to conform to and detachably engage the cylindrical portions of a pair of spaced cartridges, the open portions of the rings providing ingress and egress for said cartridges, the length of said wings being greater than the length of said fingers to form a cartridge guide-throat between two overlapped wings, notches in said body between said fingers at their bases to increase the resiliency of said fingers, the radius of curvature of said fingers being slightly smaller than that of the wings for gripping a cartridge, and said body having a centrally bent portion on lines perpendicular to its length whereby each half of the said body with its wing and finger is slightly offset an amount equal to the thickness of a link and parallel to the other half of said body and its wing and finger so that the overlapped portions of each link will remain parallel in a guideway.

4. In a cartridge clip, a centrally disposed substantially flat body portion, a pair of oppositely bent ears on one longitudinal edge of said body portion for positioning the clip in a guideway, said ears being disposed at an angle with the plane of said body portion, a substantially rigid outwardly extending arcuate wing at each end of said body portion, a pair of spaced resilient arcuate fingers extending from said body portion between said wings, said wings and fingers having inner edges arranged to conform to and detachably engage cylindrical portions of a pair of spaced parallel cartridges, said body having a centrally located angularly bent portion whereby a coacting wing and finger and the adjoining part of said body are offset and parallel to the oppositely extending wing and finger.

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