No. 628,871. Patented July 11, 1899.

E. TROCHAIN.

CARTRIDGE BELT FOR USE IN AUTOMATIC OR MACHINE GUNS.

(Application filed Aug 30, 1898.)

(No Model.)

Fig. 1.

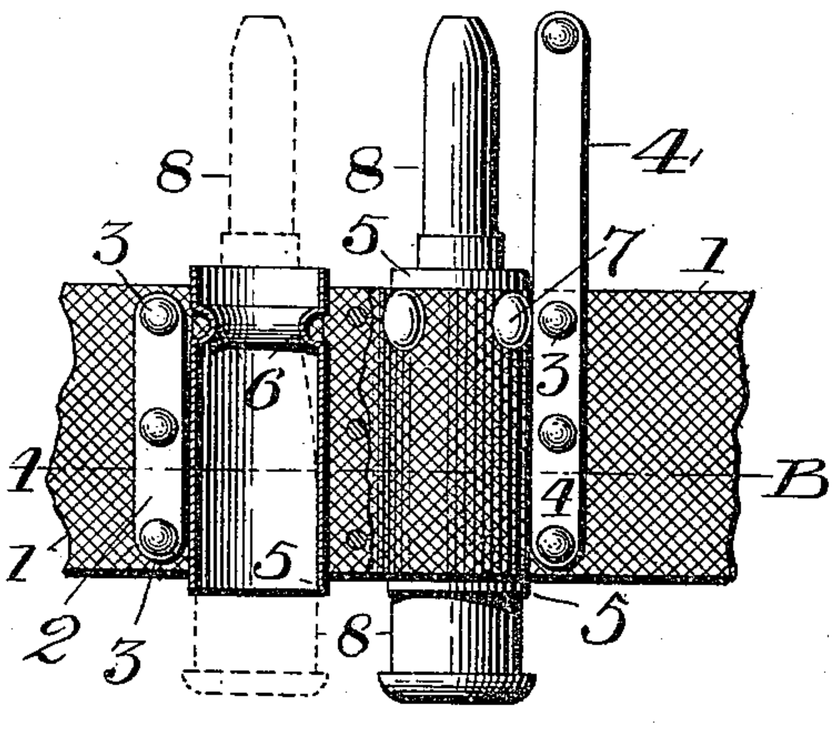


Fig. 5.

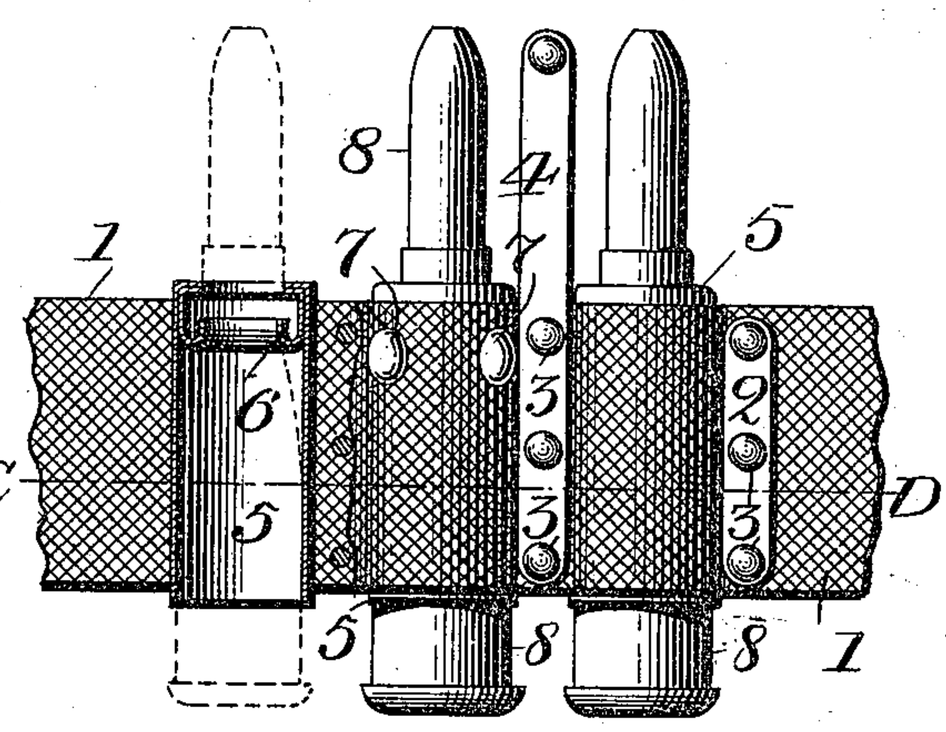


Fig. 2.

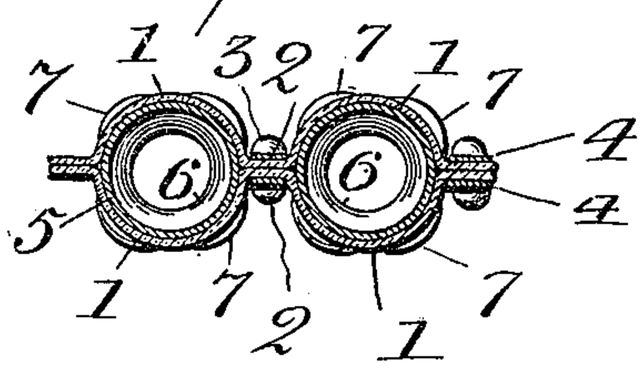
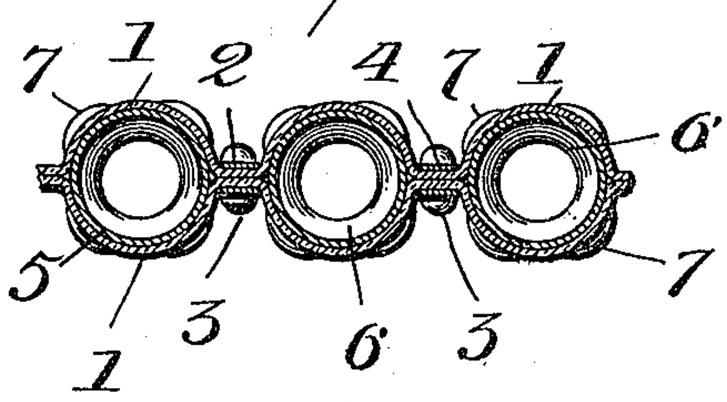


Fig. 6.



Witnesses;
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UNITED STATES PATENT OFFICE.

EUGÈNE TROCHAIN, OF PARIS, FRANCE.

CARTRIDGE-BELT FOR USE IN AUTOMATIC OR MACHINE GUNS.

SPECIFICATION forming part of Letters Patent No. 628,871, dated July 11, 1899.

Application filed August 30, 1898. Serial No. 689,876. (No model.)

To all whom it may concern:

Be it known that I, EUGÈNE TROCHAIN, of 10 Rue du Château d'Eau, Paris, in the Republic of France, have invented Improvements in Cartridge-Belts for Use in Automatic or Machine Guns; and I do hereby declare the nature of this invention to be as follows.

This invention relates to flexible bands or belts serving as portable cartridge-magazines in automatic or machine guns of the Maxim type and similar automatic or machine guns for rapid firing. The bands or belts of this kind when they are formed exclusively of two strips or ribbons of textile material (canvas or the like) laid one on the other and connected together at regular intervals by double transverse metallic plates united by means of rivets are very sensitive to atmospheric influences and particularly moisture. Under the influence of the latter they contract or shrink to a considerable extent, causing an appreciable diminution in the diameter of the passages or spaces formed between the two strips or ribbons and limited by successive transverse metallic plates. From this there results a certain difficulty to the attendants on the gun in inserting the cartridges into these passages and a great variation in the force which has to be exerted by the breech mechanism in removing the cartridges from their seats. It has been suggested in order to obviate this disadvantage to permanently fix in each passage or space a cylindrical tube of metal, which is practically unaffected by variations in the condition of the atmosphere and is of an internal diameter equal to the external diameter of the bottom part of the cartridge, for which it serves as a seat or support. The bands or belts thus formed, which are termed "semimetallic," have not in every case given completely satisfactory results, since they do not render it possible to limit in an exact and automatic manner the distance to which the cartridge can enter into the tube or seat and (by reason of the somewhat conical form of the case) to insure the exact centering of the latter relatively to the tube, this centering being indispensable to obtain absolute parallelism and exact alinement of the cartridges. It is in view of remedying these defects that I have devised the band or belt forming the subject of the present invention.

This improvement consists in forming in the interior of the metallic tube serving to receive the cartridge, and near to the front end of this tube, a projection or stop with a rounded surface having the form of a circular crown or ring the internal diameter of which is equal to the external diameter of the cylindrical contracted end or neck of the cartridge-case and the center of which is arranged on the geometrical axis of the tube. The neck of the case thus enters without appreciable play into the said ring, and as, on the other hand, the cylindrical part of the bottom of the cartridge fits exactly into the rear end of the tube the cartridge, once put into position, is exactly centered with respect to the latter. Moreover, the distance between the projection or stop and the rear end of the tube through which the cartridge is introduced is determined, so that when the shoulder formed by the neck of the case abuts against the said projection or stop the cartridge is exactly in the position which it should occupy relatively to the band in a transverse direction. It is thus only necessary to force the cartridge forward until this contact takes place in order to be sure that the said cartridge has entered exactly the desired distance into its seat. In this manner the exact alinement of the cartridges is insured automatically, as well as their parallelism resulting from their exact centering in the tubes, care having been taken to arrange the geometrical axes thereof rigorously parallel to each other in the manufacture of the band.

The above-mentioned projection or stop can, moreover, be produced either by suitably forming the receiving-tube itself or by fitting a piece of suitable shape in the interior of this tube.

In order that my invention may be easily understood, I have shown, by way of example, in the accompanying drawings two of the forms of construction which I consider to be the most practical to carry out my improvement by the two methods which I have just mentioned.

In the drawings, Figures 1 and 2 show my improved semimetallic band or belt with bezeled or spun tubes, Fig. 1 being a plan of the band or belt fitted with cartridges, with one of the tubes in axial section, and Fig. 2

a longitudinal section of the same on the line A B, Fig. 1. Figs. 3 and 4 show a modification of the construction of this same band or belt in which stamped projections or stops are fitted in the interior of the tubes, the former figure being a plan view of the band fitted with cartridges, one of the tubes being in axial section, and the latter figure a longitudinal section of said band on the line C D, Fig. 3.

In all the figures the parts which correspond or perform the same function are indicated by the same reference-numerals.

The semimetallic band or belt shown in Figs. 1 and 2 is composed of two superposed strips or ribbons 1 1 of suitable textile material (canvas or like fabric of hemp, linen, cotton, &c.) secured against each other at regular intervals by double metallic plates 2 2, united by rivets 3 3, a certain number of plates 4 4 longer than the plates 2 being arranged regularly from point to point and engaging, by their prolongations in the box of the breech mechanism, to prevent the displacement of the cartridges from their seat. Between the ribbons 1 1 in the spaces included between the metallic plates are introduced with sufficient tightness cylindrical tubes 5 5 of thin metal—sheet-brass, for example. In the interior of each of these tubes is formed the circular projection or stop 6, serving, as above explained, to effect the centering and alinement of the cartridges 8 8. (Shown in chain and full lines in the position which they normally occupy when the shoulder on the case has come into engagement with the said projection or stop.) This projection or stop, of rounded shape in transverse section, Fig. 1, is formed by stamping or spinning inward the metal of the tube itself around the whole of its circumference. The tubes 5 5 thus formed are fixed relatively to the band in a transverse direction by means of rounded pins or keys 7 passing through the strips 1 1.

The modification shown in Figs. 3 and 4 is of absolutely identical construction to that of the arrangement just described, with the difference that each of the tubes 5′ 5′ is closed at its front end by a flat plate having a central hole to permit the passage of the neck of the case and that the projection or stop is formed by a socket 6′ stamped to the form shown in section in Fig. 3 in such a manner as to present a rounded edge or rim forcibly sunk into the tube 5 till it is in contact with the bottom of the tube.

My improved semimetallic bands or belts can be constructed of any suitable dimensions, proportions, and materials in accordance with the caliber and form of the cartridges to be employed. I thus do not limit myself in any way to the particular details of construction hereinbefore described and shown by way of example in the accompanying drawings, reserving to myself the right to modify these details as required without in any way departing from the nature of my invention, and particularly in replacing the continuous circular projection 6, described above with reference to Figs. 1 and 2, by three or more projections or nibs formed in the interior of the tube 5 by stamping the metal and serving to center the cartridge while supporting the neck by three or more suitably-arranged points of contact.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. An improved cartridge-belt for use with automatic machine-guns, consisting of strips of textile fabric connected together at suitable and equal intervals by metallic strips externally applied and secured by rivets, cylindrical, sheet-metal tubes between the strips of fabric and also between the metallic strips, and means forming part of said belt for determining the centering and limiting the entrance of the cartridge in its seat in the belt, substantially as described.

2. In a cartridge-belt for use with machine-guns, the combination with strips of suitable fabric laid one upon the other, of metallic strips placed transversely upon the opposite exterior surfaces of said fabric and united by rivets, and cylindrical tubes inserted between the strips of fabric in the equal intervals between said metallic strips, said tubes having internally-projected shoulders, or stops, whereby the shoulders of the cartridges are engaged and the cartridges thus positioned in the belt, substantially as described.

3. In a cartridge-belt for use with machine-guns, the combination with a band formed of strips of suitable textile fabric placed one upon the other, of metallic strips laid transversely against their opposite outer surfaces and connected by rivets, and metallic tubes inserted between the strips of fabric in the equal intervals between the transverse metallic strips, said tubes having inwardly-projected shoulders, or stops, to engage rounded pins or keys in the strips of fabric which lie outside said tubes, and to engage the shoulders of the cartridges inserted within said tubes, whereby both the tubes and the cartridges are positioned in the belt, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EUGÈNE TROCHAIN.

Witnesses:

GEORGES DELOM,

EDWARD P. MACLEAN.