

Aug. 6, 1929.

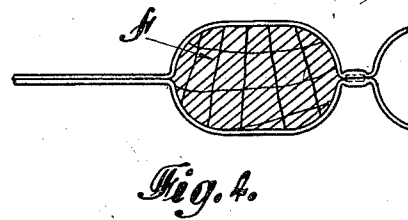
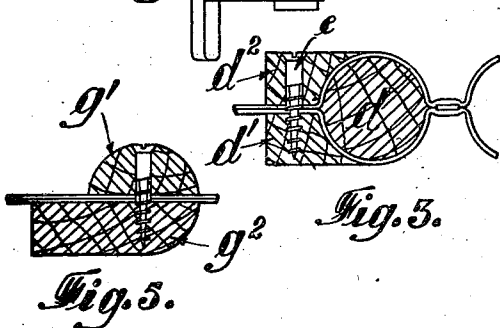
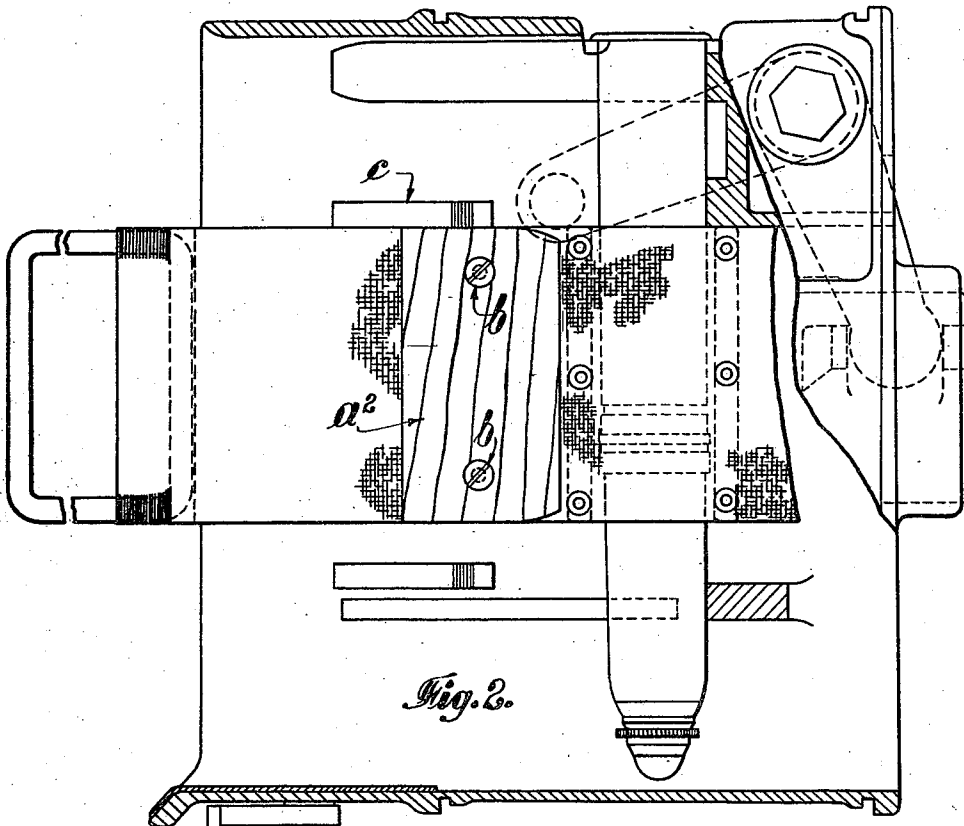
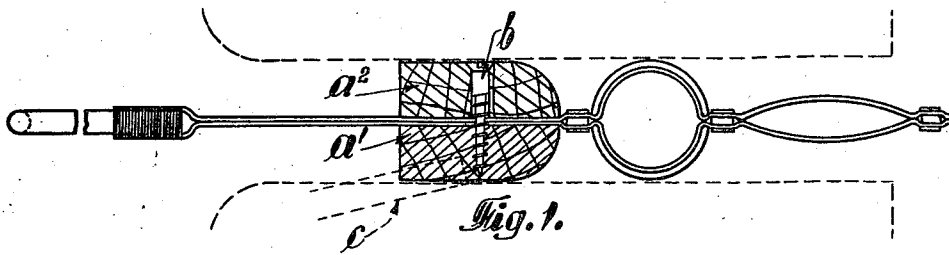
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1,723,692

CARTRIDGE BELT

Filed Dec. 20, 1928

3 Sheets-Sheet 1



Inventor:
George Frederick French.
By his Attorney: Walter Lunn

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CARTRIDGE BELT

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3 Sheets-Sheet 2

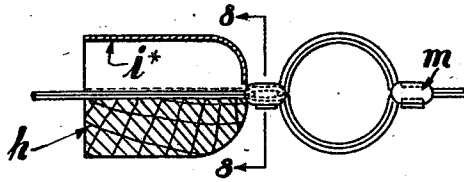


Fig. 6.

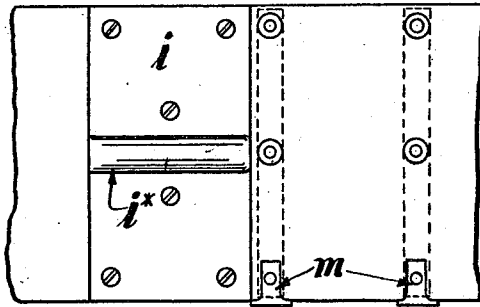


Fig. 7.

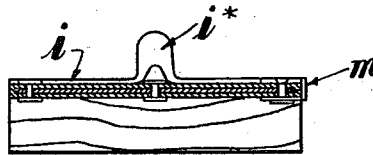


Fig. 8.

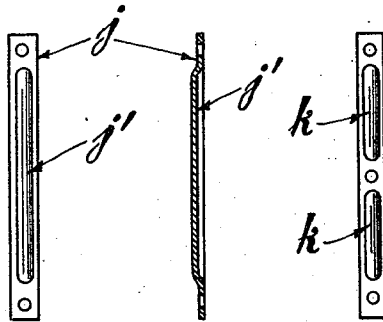


Fig. 9.

Fig. 10.

Fig. 11.

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CARTRIDGE BELT

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3 Sheets-Sheet 3

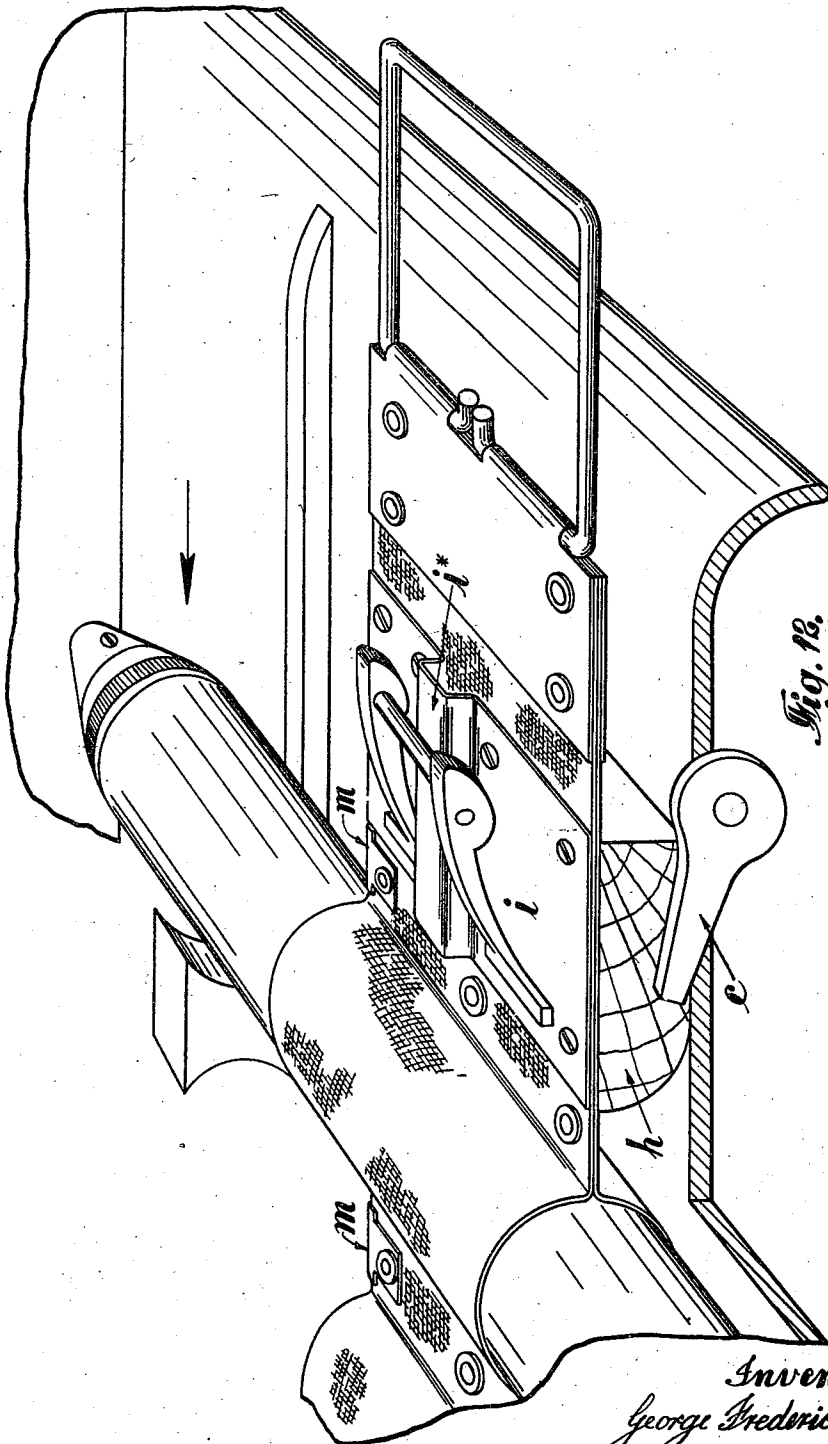


Fig. 12.

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UNITED STATES PATENT OFFICE.

GEORGE FREDERICK FRENCH, OF MANCHESTER, ENGLAND.

CARTRIDGE BELT.

Application filed December 20, 1928, Serial No. 327,238, and in Great Britain July 19, 1927.

This invention refers to cartridge belts, for automatic quick firing guns principally of the two-pounder calibre. In the ordinary fabric service (built-up) belt or the all-woven belt, it is usual to apply a round block of wood to fill the endmost pocket of the cartridge belt to hold that part of the belt immediately following the endmost cartridge in the same relationship to the feed block and feed pawls, as it would be held if there were a cartridge in the end pocket.

In using the belt with the end pocket filled with the round block, there is a great difficulty in extracting the cartridge from the pocket next the block. With all but the end cartridge, the flat end or base of the next succeeding cartridge abuts against the side wall of the feed block, and thus serves as a "stop" to prevent the belt moving sideways while a cartridge is being extracted, but in the case of the endmost cartridge there is nothing to prevent sideways movement of the belt on the side next the wood block, and as a consequence the belt binds upon the cartridge and hinders or prevents its extraction.

One of the objects of this invention is to provide simple and practical means for preventing sideways movement of the belt at the part usually fitted with the round block and thereby to allow of the endmost cartridge being readily withdrawn from the belt, at the same time maintaining such part of the belt in the required position for passing through the feed block.

According to the invention, means are applied to the belt, in place of, or supplementary to the usual round block, which are positioned on, or in the belt, and are of such dimensions as to lie immediately alongside the pawl mechanism of the gun feed block when the endmost cartridge is in the position for being extracted, thereby providing a "stop" or abutment for resisting sideways movement of the belt, whilst also fulfilling the functions of the round block in holding the belt in correct position whilst passing through the feed block, the said means also being such to allow the belt when empty to pass through the feed block.

Perforated metal strips are sometimes inserted into small pockets woven in the belt at points between the cartridge pockets, such

strips being secured to the belt by stitching. Under the force used to extract a cartridge, the stitches may not be strong enough to resist such force and the fabric of the belt next the strips will be liable to tear or crumple up, instead of remaining rigid and helping to resist sideways movement of the belt.

A further object of the invention is to fix the strips in a more permanent manner, and also to apply strips which are stiffer than those usually employed while being no thicker and no heavier.

According to this part of the invention, the brass stiffening strips are formed with a single longitudinal corrugation extending from end to end of the strip, or with two longitudinal corrugations arranged end to end. Further, in place of the multiplicity of holes heretofore provided, there are only two holes, one at each end of the strip, or three holes, one at each end and one in the middle of the strip. By means of rivets, eyelets, screws or nuts and bolts passing through the fabric of the belt, and through said holes in the strips, the latter are firmly secured to the belt.

With the strips thus secured the material of the belt next the strips is prevented tearing or crumpling up, and with the strips corrugated lengthways, they are prevented bending when subjected to end pressure.

According to a further improvement, the edge of the cartridge belt which lies furthest from the wider ends of the cartridges is reinforced at intervals by U-shaped metal clips or protectors riveted to the belt, the clips or protectors lying opposite and over the ends of the stiffening strips and thus affording a means of fastening and protecting such strips, as well as forming a reinforcement for those parts of the edge of the belt against which abuts the machine for forcing the cartridges into the belt. These last named improvements are chiefly applicable to all-woven belts with single piece reinforcements, and may be used with plain (non-corrugated) strips. The clips or protectors may be wider at the fold than where they are riveted to the belt.

Upon the accompanying drawings:

Fig. 1 is a longitudinal section of part of a cartridge belt, with one example of the invention applied thereto.

Fig. 2 is a plan view of the same belt, including portions of the feed block of a quick firing gun.

Figs. 3, 4 and 5 are longitudinal sections of parts of belts fitted with other examples of the invention.

Fig. 6 is a longitudinal section,

Fig. 7 is a plan view, and

Fig. 8 a transverse section of parts forming a further example of the invention.

Figs. 9 and 10 are face and edge views respectively of an improved metal stiffener strip for use with the belts.

Fig. 11 is a face view of a modification.

Fig. 12 is a general perspective view of a part of a cartridge belt having one example of the invention applied, and such view also shows the disposition of the feed block mechanism relatively to the belt.

In the example of the invention shown in Figs. 1 and 2, two rectangular and broad pieces of wood a^1 , a^2 are employed, the piece a^1 lying on the lower face of the belt and the piece a^2 lying on the top face of the belt, the two pieces being held together and to the belt by screws b , or other suitable fastening means. Each piece of wood is equal in length to the width of the belt, and equal in width to the width of the end pocket of the belt flattened out. Each piece is also equal in thickness to the required distance between the plain (non-pocket) parts of the belt and the floor of the feed block when passing through the feed block. The front edge of the upper piece is rounded to make it easy for the feed pawls to pass over it when moving back.

As shown in Figs. 1, 2 and 12, the improved end block lies, at one end, alongside the usual retaining pawl c in the floor of the feed block, and therefore, while the end cartridge is being withdrawn from the belt, the end block resists the pull on the belt and prevents twisting or side movement of the belt next the end cartridge, the sides of the cartridge pocket remaining parallel and the cartridge being readily withdrawn.

In Fig. 3 the usual round wood block d fitting the end cartridge pocket is used, and in addition, two pieces of wood d^1 , d^2 (one on each face of the belt and equal in length to the width of the belt) are provided alongside the end pocket on that side next the belt end, the round block and the two pieces of wood being collectively equal in width to the end pocket flattened out. The pieces of wood are held to the belt by screws e , or other suitable fastening means.

In Fig. 4, the end pocket is made to larger proportions than usual, and a wood block f , made in one piece and of proportions similar to those of the two-piece block aforesaid (Fig. 1) is inserted in such pocket.

In Fig. 5, a half-round piece g^1 (equal to a half block) is applied to the top face of

the belt, and a flat elongated piece g^2 is applied to the lower face of the belt, screws fastening the two pieces to each other and to the belt.

In Figs. 6, 7 and 8 a flat elongated wood piece h is secured to the lower face of the belt, and to the top face is secured a metal plate i with central narrow parallel-sided ridge i^* , the plate and wood piece being secured to each other and to the belt by screws. With this arrangement there is nothing above the belt to obstruct the return of the feed pawls. Usually it will be preferred to permanently fasten the block (or block sections) to the belt, but in the case of a one-piece block lying in the end pocket, it may be secured only by its tight frictional fit in the pocket.

In the case of new belts, and with the block in two parts and fitting opposite faces, the belt may be made without the end pocket.

By forming the end pocket further away from the preceding pocket than usual, the ordinary round block alone will abut against the retaining pawl. In this case, however, an extra wide stiffening strip (or two strips side by side) may be required between the two end pockets.

In all cases the proportions of the blocks will be such as to cause parts of the blocks to lie opposite and alongside one of the pawls, and cause the latter to act as a "stop" to prevent the sideways movement of the belt.

Although preferring the blocks to be of wood, any other and suitable material may be used.

According to the further features of the invention, the brass stiffening strips j are formed with single longitudinal corrugation j^1 extending from end to end of the strip, see Figs. 9 and 10, or with two longitudinal corrugations k , k arranged end to end, see Fig. 11. Further, in place of the multiplicity of holes heretofore provided, there are only two holes, one at each end of the strip (Fig. 9), or three holes (Fig. 11), one at each end and one in the middle of the strip. By means of rivets, eyelets, screws or nuts and bolts passing through the fabric of the belt, and through said holes in the strips the latter are firmly secured to the belt.

According to the further improvement, the edge of the cartridge belt which lies furthest from the wider ends of the cartridges is reinforced, at intervals, by U-shaped metal clips or protectors m , see Figs. 6, 7 and 8 riveted to the belt, the clips or protectors lying opposite and over the ends of the stiffening strips and thus affording a means of fastening and protecting such strips, as well as forming a reinforcement

for those parts of the edge of the belt against which abuts the machine for forcing the cartridges into the belt. These last named improvements are chiefly applicable to all-woven belts with single piece reinforcements, and may be used with plain (non-corrugated) strips. The clips or protectors may, as shown, be wider at the fold than where they are riveted to the belt.

These improvements allow of the usual thickening at the edge of the all-woven belt being dispensed with, thus simplifying the manufacture of the belt.

Instead of the pockets for the stiffeners of the all-woven belt being made open and thus sewn to close the same at each end, one end is woven closed, while to the other end is applied the aforesaid reinforcing clip or protector.

What I claim is:—

1. In a cartridge belt for automatic quick firing guns, a fitment comprising a metal plate with central ridge-like part, and a wood block of substantially flat elongated cross section, the plate being arranged on one face and the wood block arranged on the other face of the belt, and means for securing the plate and block to each other and to the belt, the fitment being fixed to the belt at a point where it can serve the functions of the usual round wood block, and also serve as a "stop" or abutment to prevent twisting of the belt when the last cartridge is being withdrawn from the belt, as set forth.

2. In an all-woven cartridge belt for automatic quick-firing guns having at one end a fitment for preventing sideways movement of the belt when the last cartridge is being withdrawn, metal stiffening strips for such belt, arranged in woven pockets of the

belt intermediate of the cartridge pockets, means for fastening the strips firmly to the belt, and U-shaped metal protectors engaging one edge of the belt and one for and opposite one end of each strip, the means for fastening the end of each strip also serving to fasten the protector to the belt, as set forth.

3. In an all-woven cartridge belt for automatic guns having at one end a fitment for preventing sideways movement of the belt when the last cartridge is being withdrawn, metal stiffening strips for such belt having longitudinal corrugations, and also having holes, by which they may be riveted to the belt, the belt having pockets in which such strips are placed and said pockets being woven closed at one end and open at the other, and U-shaped protectors fitting over the open ends of the pockets, and rivets for fixing the strips to the belt, and the protectors to the belt and to the strips, as set forth.

4. In a cartridge belt for automatic quick firing guns, a fitment comprising a wood block of substantially flat elongated cross section arranged on one face of the belt and a cooperating member arranged on the other face of the belt, and means for securing the block and the member to each other and to the belt, the fitment being fixed to the belt at a point where it can serve the functions of the usual round wood block, and also serve as a "stop" or abutment to prevent twisting of the belt when the last cartridge is being withdrawn from the belt, as set forth.

In testimony whereof I have signed my name to this specification.

GEORGE FREDERICK FRENCH.