

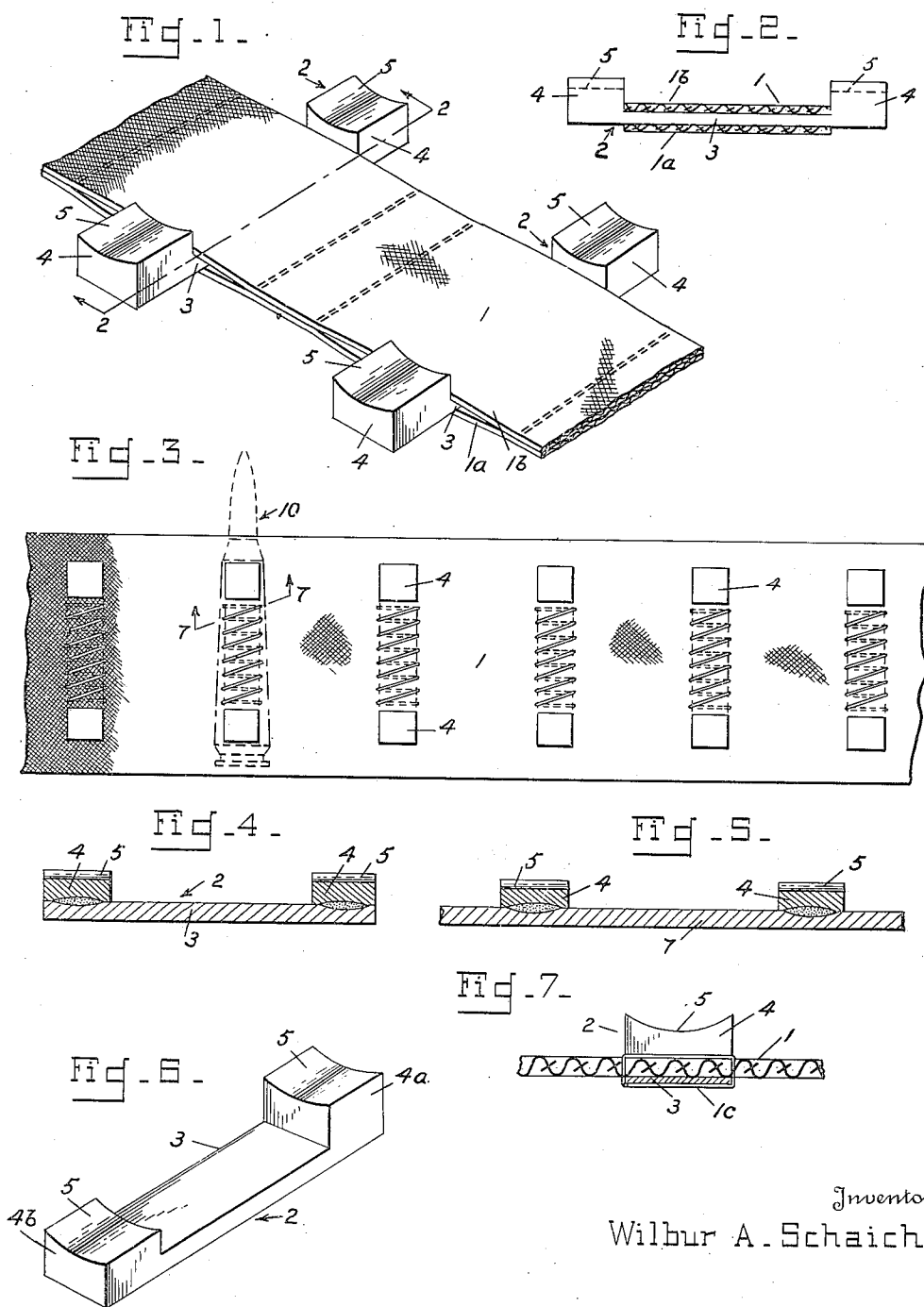
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CARTRIDGE BELT

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CARTRIDGE BELT

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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 cartridge belt for automatic firearms and particularly for automatic firearms utilizing steel case cartridges.

There are an increasing number of firearms in which most desirable feeding of the cartridges into the chamber of the firearm may be accomplished by the employment of the so-called open link type of cartridge belt. In belts of this type it is possible to simplify the feeding movement of the cartridge in that the open link construction permits a portion of the cartridge to be engaged directly by the face of the firearm bolt and pushed out of the open links of the cartridge belt directly into the chamber of the firearm. This type of feeding motion is of course more desirable than that required by the use of a closed link belt, for in such constructions it is necessary to first retract the cartridge from the belt before the cartridge may be chambered by the bolt.

The use of the open link type cartridge belt has heretofore been restricted due to the difficulty of meeting the strength requirements of the belt links without losing the required flexibility of the belt. In accordance with my invention, however, a cartridge belt construction is obtained which permits steel case cartridges to be supported in a belt to permit the feeding of cartridges into the chamber in the same manner as the open link type of belt and at the same time any desired strength and flexibility requirements for the belt can be met.

Accordingly it is an object of my invention to provide an improved cartridge belt construction for steel case cartridges.

It is a particular object of my invention to provide a belt construction wherein steel case cartridges are magnetically secured to a belt.

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 drawing in which:

Fig. 1 is a perspective view of a portion of a cartridge belt showing the magnetic cartridge holders assembled to the belt.

Fig. 2 is a cross sectional view taken along the plane 2—2 of Fig. 1.

Fig. 3 is a top elevational view of a portion of a cartridge belt showing an alternate method of securing the magnetic cartridge holders to the belt.

Fig. 4 is a longitudinal sectional view of the cartridge holder showing supports of high retentivity material fastened to a base of ordinary ferrous material.

Fig. 5 is a view similar to Fig. 4 showing the magnetic supports fastened to a belt of thin ferrous material.

Fig. 6 is a perspective view of a magnetic cartridge holder.

Fig. 7 is a cross sectional view taken along the plane 7—7 of Fig. 3.

In Fig. 1 there is shown one modification of a cartridge belt embodying my invention. The belt comprises in general a body portion 1 and magnetic cartridge holders 2 secured to the body portion. The body portion 1 preferably comprises a long continuous strip of corded fabric similar to the fabrics utilized in the conventional closed loop fabric belts. It will be understood, however, that any flexible material, including plastics, having sufficient strength to support the weight of a fully loaded belt may be used. Thus as shown in Fig. 5 the body portion 1 comprises a thin strip of flexible metal, preferably a ferrous material.

The magnetic cartridge holders 2, as shown in Figs. 1 and 2, comprise a base portion 3 and two or more supports 4 mounted on said base portion. The top surfaces 5 of the supports 4 are shaped to engage the periphery of a steel case cartridge 10. The magnetic cartridge holders 2 may be made integrally from any permanent magnetic material having high magnetic retentivity properties. The material preferably employed is of the type described in Mashima Patents 2,027,994 to 2,028,000, inclusive, and in Ruder Patents 1,947,274 and 1,968,569, or I may conveniently employ a sintered form of the same magnetic material produced in accordance with Howe Patent 2,192,744.

Any convenient method of securing the magnetic cartridge holders 2 to the belt may be utilized. In Figs. 1 and 2 the belt 1 is constructed of two pieces 1a and 1b which go over and under the thin section of the base 3 of the magnetic holders 2. Between successive holders 2 the belt portions 1a and 1b are sewed or glued together. In the arrangement shown in Figs. 3 and 7, the magnetic holders 2 are sewed to a fabric belt 1 by cords 1c.

A steel case cartridge 10 is then conveniently loaded onto the belt merely by bringing the steel case of the cartridge in contact with the shaped surfaces 5 of the magnetic cartridge supports 2. The steel case of the cartridge thus completes

the magnetic circuit and hence due to the high retentivity properties of the particular magnetic material employed the cartridge will be firmly held to the belt by a magnetic attraction.

Alternative forms of my invention are shown in the other figures of the drawing. Fig. 5 discloses a magnetic cartridge belt wherein the belt material 7 comprises a thin strip of ferrous material. For such construction I find it most convenient to eliminate the base portion 3 of the cartridge holders and utilize magnetic support members 4 individually welded or otherwise secured directly to the metallic strips 7.

Fig. 4 shows an alternative design of the magnetic cartridge holder wherein only the supports 4 are made of the high retentivity material while the base member 3 to which the supports 4 are secured by welding or other means is made from ordinary ferrous material.

In Fig. 6 is shown a modification of my invention wherein the front magnetic support 4a is of greater height than the rear magnetic support 4b. With such construction easier feeding of the cartridge into the chamber of a firearm is obtained since the nose of the cartridge is thereby elevated to such position as to directly enter the chamber without ramping.

With cartridge belts constructed in accordance with this invention and loaded with steel case cartridges, all the properties of an open link belt are retained. The cartridge may be fed directly into the chamber of an automatic firearm by engagement of the bolt of such firearm beyond the end of the cartridge and sliding the cartridge off the magnetic support member 2. It will be observed that a sliding motion between two magnetically attracted surfaces can be readily produced.

I claim:

1. A belt for cartridges having a case of magnetic material comprising a flexible fabric strip, a plurality of permanent magnet members secured to said fabric strip at equi-spaced intervals, said magnet members having a base portion interwoven in said fabric strip and a cartridge engaging portion projecting out of said strip.

2. A belt for cartridges having a case of magnetic material comprising a strip of flexible magnetic material, a plurality of pairs of permanent magnets secured to said strip at equi-spaced intervals, each of said magnets having a base portion arranged in intimate metallic contact with said strip and the top surfaces of each pair of magnets being shaped to engage a single cartridge case, whereby a high permeability, closed magnetic circuit is formed between said magnets by said strip and the cartridge case.

3. A belt for cartridges having a case of magnetic material comprising a flexible strip, a plurality of cartridge holders secured to said strip at equi-spaced intervals, said cartridge holders comprising a base and a plurality of supports formed on said base, the top surfaces of said supports being shaped to engage the surface of a cartridge case, said base and said supports constituting a permanent magnet.

4. A belt for cartridges having a case of magnetic material comprising a flexible strip, a plurality of cartridge holders secured to said strip at

equi-spaced intervals, said cartridge holders comprising a base and a plurality of supports secured to said base, the top surfaces of said supports being shaped to engage the surface of a cartridge case, said supports constituting permanent magnets and said base being of magnetic material.

5. A belt for cartridges having a case of magnetic material comprising a flexible fabric strip, a plurality of cartridge holders interwoven in said strip at equi-spaced intervals, said cartridge holders comprising a base and a plurality of supports secured to said base, the top surfaces of said supports being shaped to engage the surface of a cartridge case, said supports constituting permanent magnets and said base being of magnetic material.

6. A belt for cartridges having a case of magnetic material comprising a pair of parallel flexible strips, means securing said strips together at intervals corresponding to the cartridge spacing desired and a plurality of cartridge holders each held between said strips in the space between said securing means, said cartridge holders comprising a flat base portion arranged to be held between said pair of strips and a pair of cartridge supports formed on each of the ends of said base portion projecting out of said strips, the top surfaces of said supports being shaped to engage the surface of a cartridge case, said base and said supports constituting a permanent magnet.

7. A belt for cartridges having a case of magnetic material comprising a pair of parallel flexible strips, means securing said strips together at intervals corresponding to the cartridge spacing desired and a plurality of cartridge holders each held between said strips in the space between said securing means, said cartridge holders comprising a flat base portion arranged to be held between said pair of strips, a pair of cartridge supports secured on each of the ends of said base portion projecting out of said strips, the top surfaces of said supports being shaped to engage the surface of a cartridge case, said supports constituting permanent magnets and said base being of magnetic material.

8. A magnetic cartridge holder for steel case cartridges comprising a base, a plurality of permanent magnets linearly mounted on said base, the top surfaces of said magnets being shaped to engage successive surface regions along the length of a cartridge, the said magnets arranged to engage the forward portions of the cartridge being of increased height whereby a supported cartridge will be tipped with respect to said base.

9. A belt for cartridges having a case of magnetic material comprising a flexible strip, a plurality of cartridge holding units secured to said strip at equi-spaced intervals, said units comprising a plurality of permanent magnets disposed transversely across said strip, the top surfaces of said magnets being shaped to engage successive surface regions along the length of a cartridge, the said magnet arranged to engage the forward portion of the cartridge case being of increased height whereby a cartridge secured to any one of said holding units will have the nose thereof tipped upwardly with respect to said strip.

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