

June 15, 1943.

C. M. CONRADSON
POWER BELT CONSTRUCTION

2,321,580

Filed Nov. 20, 1939

2 Sheets-Sheet 1

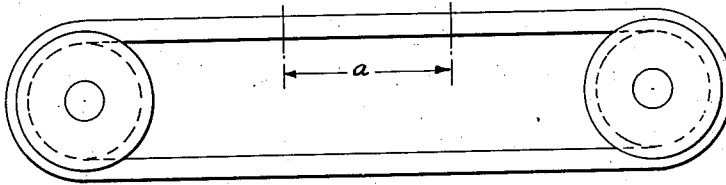


Fig. 1

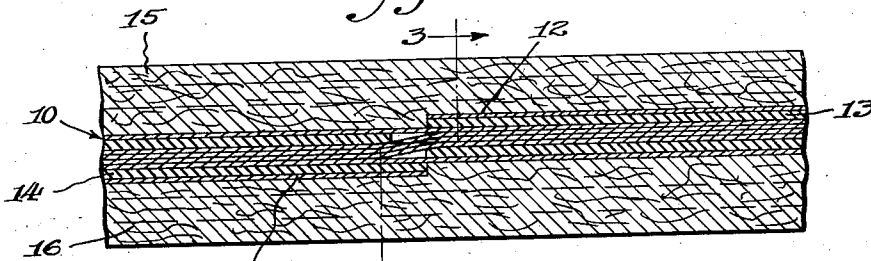


Fig. 2

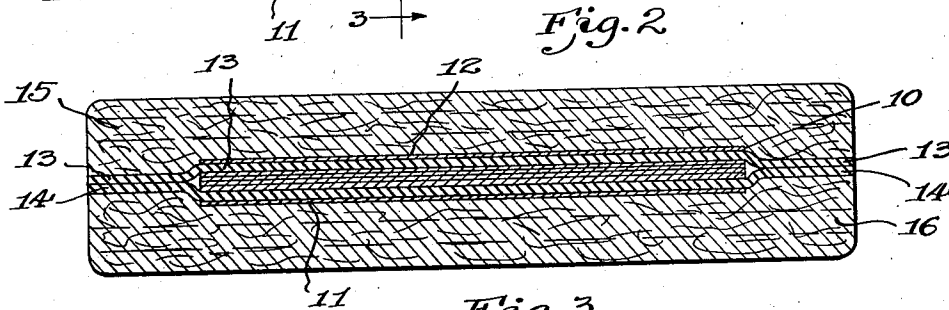


Fig. 3

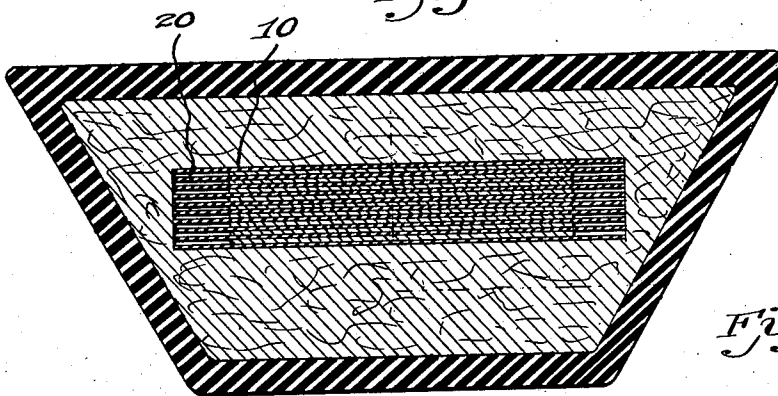


Fig. 4

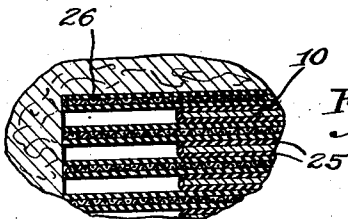


Fig. 5

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Fig. 6

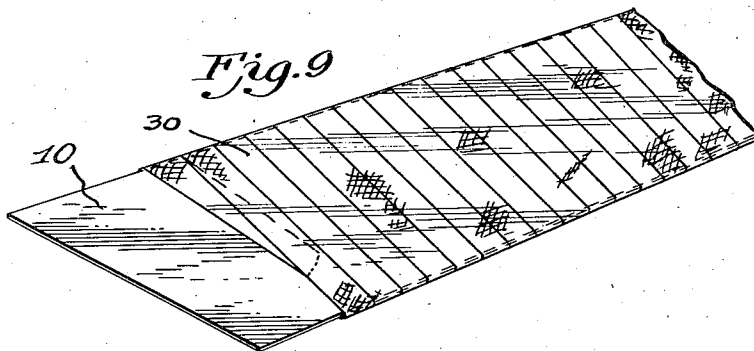
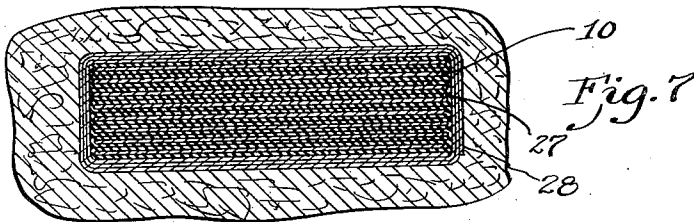
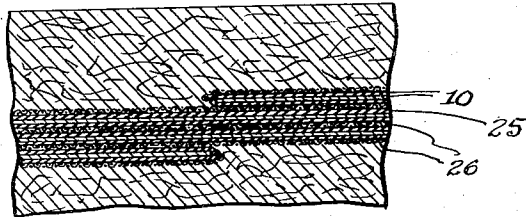
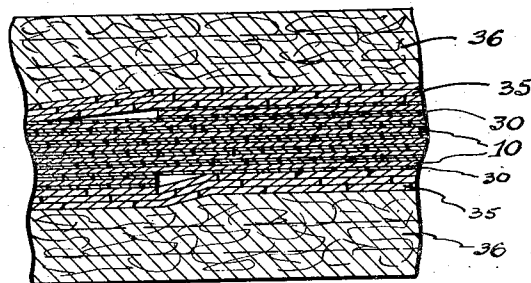


Fig. 8



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POWER BELT CONSTRUCTION

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Application November 20, 1939, Serial No. 305,267

3 Claims. (Cl. 74-233)

This invention relates to power belt construction and has particularly to do with an improved center or reinforcing means for a belt.

The present invention constitutes an improvement on an invention described in my prior application, Serial No. 259,117, filed March 1, 1939. The present invention, and also that of the previous application, relates briefly to a reinforcement for a flexible continuous belt which consists of a thin metal strip rolled upon itself to form a laminated convolute band.

The present invention contemplates the provision of frictional means between the laminations of the strip and also means for holding the convolute strip in a rolled position within the outer covering of a belt without any mechanical connections.

An object of the present invention is to provide a reinforcement for a belt which is easily formed and which has a high degree of the frictional contact between the laminations of the band.

Other objects and features of the invention having to do with details of forming the belt reinforcement and the materials used therein will be described in detail in the following description and claims.

In the drawings:

Fig. 1 is a picture of a belt.

Fig. 2 is an enlarged longitudinal section of the belt of Fig. 1.

Fig. 3 is a transverse section taken on the lines 3-3 of Fig. 2.

Fig. 4 illustrates a section of a modified belt construction.

Figs. 5 through 9 illustrate details of further modifications of belt construction embodying the present invention.

The main idea of the present invention is to provide a reinforcement for a belt which consists of a convolute strip in which dependence is placed on the friction between the steel strips and an interlined covering of rubber or rubberized fabric, or both, the whole being finally vulcanized to provide a finished enforcement unit. This idea does away for the necessity of any special joining of the ends of the strips since the friction between the elements maintains the convolution at a definite size.

One form which the invention may take is illustrated in Figs. 1, 2 and 3. The longitudinal section of Fig. 2 is taken in the space marked a in Fig. 1. In Fig. 2, the ends of the convolute strip 10 are shown, identified by reference characters 11 and 12. A rubber impregnated fabric

13, having a length equal to one convolution of the band, is placed within the outer lamination of the band. A similar strip 14, one convolution long, is placed within the inner convolution of the band. The width of these rubberized strips 13 and 14 is greater than that of the band shown in Fig. 3. Before the strip 10 is wound upon itself, it may preferably be coated with a light coating of rubber and after the wrapping of the strip 10 with the two strips 13 and 14, the entire assembly may be covered with a rubberized canvas 15 on the outside and 16 on the inside. The entire assembly may then be subjected to a vulcanizing temperature so that it becomes practically a solid mass. In Fig. 4, I have shown a cross section of a reinforced belt in which the steel strip 10 is wound simultaneously with a rubber strip 20 which is slightly wider than the steel strip. After the winding, the entire mass may be vulcanized together. Fig. 5 illustrates a reinforced belt in which the metal strip 10 is first covered with rubber 25 and then wrapped with a rubberized fabric 26. After the reinforcing unit is assembled, it may be vulcanized as previously described. Fig. 6 illustrates a longitudinal section of such a construction.

Fig. 7 illustrates a modification of the invention consisting of a metal strip 10 provided with a rubber coating 27 and then rolled upon itself and wrapped with a fabric or rubberized tape 28. In some cases, the entire band may first be wrapped with a tape or rubberized fabric before the band is rolled into a convolute reinforcing strip. Fig. 9 shows the strip wrapped with a fabric tape 30, and Fig. 8 gives some idea of the section of the belt in which this is used, there being an outer covering or wrapping 35 on the reinforcing unit before it is placed between the rubberized canvas having a coating 36.

It should be understood that because of the extremely small dimensions involved in the thickness of the metal reinforcing strips, the presentation in the drawings of the cross section is difficult. In some cases, it has been necessary to present somewhat of a diagrammatic showing.

What I claim is:

1. A mechanical unit for the transmission of rotary power comprising a thin metal strip wound longitudinally upon itself a plurality of times to form a laminated band, a thickness of soft, pliable material between one or more of the convolutions of said band firmly adhering to said convolutions, and a soft, pliable covering on said entire band serving to maintain the convolutions of said band in tight frictional contact.

2. A mechanical unit for the transmission of rotary power comprising a thin metal strip, a covering of rubberized fabric on said strip firmly adhering thereto, said strip and its covering being wound longitudinally upon itself to form a continuous, laminated band, a rubberized covering for said band, the coverings of the strip and band being vulcanized together at their contacting surfaces.

3. A mechanical unit for the transmission of rotary power comprising a thin metal strip, a relatively thin rubber covering on said strip firmly adhering thereto, said strip and covering being wound longitudinally to form a continuous laminated band, a rubber covering for said band, said coverings being firmly adhered at their contacting surfaces by a vulcanizing process.

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