June 5, 1945. A. S. BROWN 2,377,609

ENDLESS TRANSMISSION BELT

Filed May 25, 1944

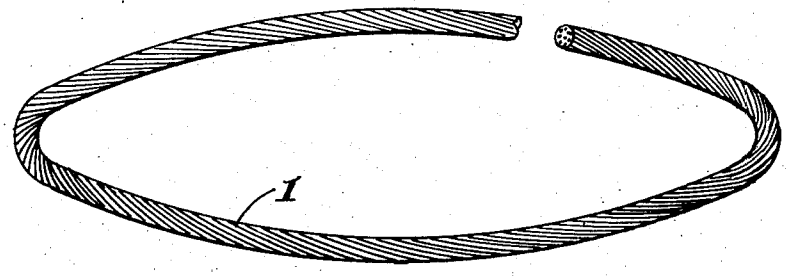



Fig. 1

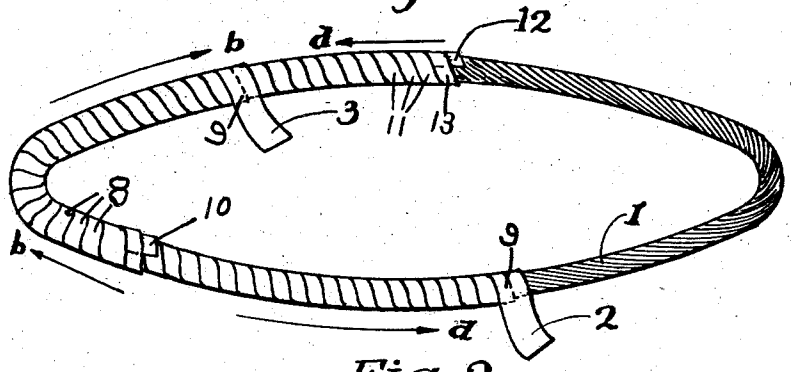



Fig. 2

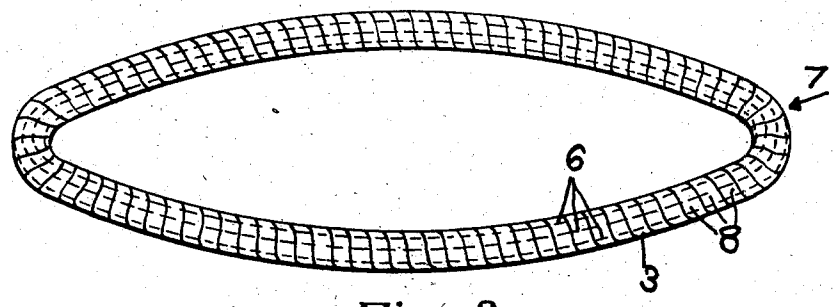



Fig. 3

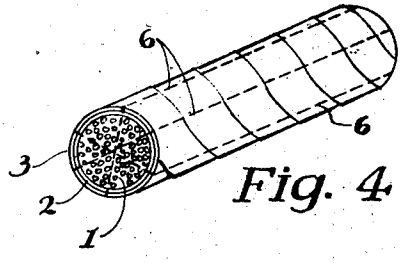



Fig. 4

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2,377,609

## ENDLESS TRANSMISSION BELT

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Application May 25, 1944, Serial No. 537,250

1 Claim. (Cl. 74—238)

This invention relates to endless transmission belts and is in the nature of an improvement on the belt illustrated in U. S. Patent 1,545,206, July 7, 1925.

The belt shown in said patent comprises a core or body portion formed of a plurality of strands twisted together in such a way that each strand forms a spiral with widely separated turns, which body portion is covered by a fabric tape that is wound tightly thereabout, the winding being so accomplished that the adjacent turns of the fabric tape have an overlapping relation. The belt of said patent also had a plurality of rows of stitching extending longitudinally thereof and by which the body portion and covering element were stitched together.

While a belt made in accordance with said patent gives satisfactory results so far as transmission of power is concerned, yet it was found that when the belt was removed from the pulleys and laid on a bench or other flat surface there was a tendency for the belt to twist into a figure 8 shape.

The object of the present invention is to provide improvements by which this tendency is corrected so that a belt embodying the present improvements will lie perfectly flat on a bench or other supporting surface without any tendency to twist into a figure 8 shape.

In order to give an understanding of the invention, I have illustrated in the drawing a selected embodiment thereof which will now be described after which the novel features will be pointed out in the appended claim.

In the drawing:

Fig. 1 is a view of the body portion of the belt, a portion thereof being broken out.

Fig. 2 is a view illustrating the manner in which the two-ply covering member is applied to the body.

Fig. 3 is a perspective view of a belt embodying my invention.

Fig. 4 is a perspective sectional view.

The belt embodying the present invention comprises a body portion 1 which is formed similar to the body portion of the belt illustrated in said Patent 1,545,206, that is, by winding a continuous strand in the form of a loop with the strand extending repeatedy around the loop to form a body portion of the desired size, said coils of strand being twisted together in such a way that each strand spirals about the body portion with widely separated turns.

This body portion, in the present invention, is covered with a two-ply covering member, each ply being formed from a fabric tape which is wound spirally about the body member, the tape forming one ply being wound about said body member in a direction opposite to that forming the other ply.

In Fig. 2 the tape forming the inner ply is indicated at 2 and it is wound about the body member 1 by passing down around the outside of the body member, under the latter and up through the inside and over the top thereof. This tape 2 is shown in Fig. 2 as wound about a portion only of the body member in order to better illustrate the manner in which it is applied thereto. For instance, one end 12 of the tape is laid on the body member 1 and then the tape passes down around the outside and underneath the body 1 and then up at the inside of the body as shown at 13, this winding proceeding in the direction of the arrow *d* in Fig. 2. In applying the tape to the body member, it is preferably so wound thereon that each turn will overlap about one-half the width of the preceding turn. It will be understood that this tape 2 will be wound on the body portion until the latter is entirely covered.

The second or outer ply of the covering element is formed from another strip of fabric tape indicated at 3, and this is applied to the body member which has previously been wound with the tape 2 by winding said tape 3 on the body member but in an opposite direction from that in which the tape 2 is wound. This is best illustrated in Fig. 2 wherein one end 10 of the tape 3 may be placed against the belt and the tape 3 is then wound thereon by passing it downwardly on the inside of the belt underneath the latter upwardly on the outside thereof and over the top, and so forth, the winding proceeding in the direction of the arrow *b*. This tape 3 is also preferably so wound on the belt that each turn thereof overlaps about one-half the width of the previous turn as shown at 9.

It will thus be seen that the tape 3 is not only wound about the belt in the opposite direction from that in which the tape 2 is wound thereabout, but also that the winding of the tape 3 proceeds in the opposite direction from the winding of the tape 2 as seen by the arrows *b* and *d*.

After the two tapes have thus been wound oppositely on the body member, then the two-ply covering and the body member are stitched together by means of stitches 6 which extend longitudinally of the belt and extend transversely therethrough.

By thus winding a second tape 3 outside of the

wound tape 2 and winding said tape 3 in an opposite direction from that in which the tape 2 is wound and in addition progressing the winding of the tape 3 in a direction opposite to that in which the winding of the tape 2 progresses, the tendency of the belt when not in use to assume a figure 8 shape is obviated, and the belt will always lie flat when placed on a bench or other support. Any tendency to cause the belt to twist into a figure 8 shape due to the winding of one of the tapes on the body member is opposed by the tendency to twist the belt into an opposite figure 8 shape due to the winding of the other tape on the body member, and thus the belt will always maintain its desired flat shape.

I claim:

An endless belt having an endless body portion formed of a plurality of strands so twisted together that each strand has a spiral course in said body portion with widely separated turns, a covering for the body portion comprising an inner ply formed of a fabric tape wound tightly about the body portion in one direction with the adjacent turns of the tape having an overlapping relation and an outer ply also formed of a fabric tape wound in the opposite direction about the tape-covered body portion with the turns of said outer ply having an overlapping relation and rows of stitching extending longitudinally of and through the belt and uniting the two-ply covering member to the body thereof, whereby the tendency which each ply has to cause the belt to twist into a figure 8 shape is counteracted by that of the other ply.

ARTHUR S. BROWN.