

Description

Background of the Invention

Power transmission belts are widely used throughout the industry, and the manufacture and sale of such belts is very competitive. One common technique used to make such belts is to ply up layers of belt materials on a cylindrical drum and form a belt sleeve, and cut individual belts from the sleeve. One example of such a belt sleeve is shown in U.S. Patent No. 3,031,364. Typically, such a belt sleeve is formed of various plies of material used to form the body of the belt. The body is composed of various arrangements and layers of materials, such as fabric layers, cushion layers and fiber loaded layers.

A load carrying section may also be provided, which includes a helically wound load carrying cord spiraled on the drum in a specified position during the building process. Such belts, having load carrying sections are shown in U.S. Patent Nos. 2,773,540, 3,987,684, 4,264,315, 4,296,640 and 4,734,088. The resulting belt sleeves may be cured first as a sleeve and then cut, or they may be left uncured, with each sleeve then being cut into belt elements. The belt elements may then be wrapped by a fabric sheet prior to curing as shown in U.S. Patent No. 4,096,764.

The above method of making a belt sleeve is both labor intensive and time consuming. Inventories of various ply stocks in various widths and thicknesses have to be maintained. Also, precise placement and spacing of the spiralled load bearing cord between the overcord or tension section, and undercord or compression section using the above method is sometimes difficult to maintain.

Conveyor belt sleeves have been made by winding rather narrow fiber bats around rollers to form layers which, after needling, are then cut into belt elements as shown in U.S. Patent No. 3,673,024. However, the conveyor belt sleeve formed does not have a separate load carrying section such as a spiralled cord; consequently, belts made from such sleeves have minimum tensile load carrying capability.

Load bearing cord is used in the power transmission belt of U.S. Patent No. 4,123,946, but it is necessary to first embed the cord in an elongated strip of polymeric material. This is done by extruding the substantially uncured polymeric material and load carrying cord simultaneously through an extrusion orifice and forming a strip, and then, winding this strip onto a cylindrical drum. Thus, an elongated strip is formed having the load carrying cord extending through and embedded throughout its entire length. However, the wrapping of such strips of polymeric material containing load carry-

ing cord in an adjoining relationship about the drum as shown in the patent is a relatively slow process limited by the extruder output and the wrapping is not easy to achieve because the strip must be bent and helically wound along its narrow edge causing the strip to widen at the edge and neckdown at the opposite edge. It is also difficult to precisely position the load carrying cord relative to the surfaces of the finished belt particularly when the strip changes width dimensions during winding. This is a critical factor affecting the final physical characteristics of the finished belt in terms of locating the load bearing cord in a constant equatorial plane.

It is an object of this invention to provide a power transmission belt formed of belt material and a load carrying cord where the belt material is in the form of a continuous narrow strip instead of layered wide sheets or plies. The strip eliminates the need for an inventory of wide stock sheets and the processing equipment to make the inventory. The continuous strip of belt material is easily helically wound about a belt building drum with an adjacent cord to form a belt sleeve. This decreases the building time required for each belt and results in cost savings.

It is another object of this invention to precisely place the load carrying cord. This is achieved during helical winding by adhering the load carrying cord to an adjacent surface of the strip of belt material and winding the cord and the strip of belt material simultaneously about the building drum. Thus, the belt material with the adhered cord helps achieve uniform cord spacing. The adjacent belt material between successive cords acts as a uniform insulation that retards the development of cord line shear and substantially prevents self abrasion between successive cords during the belt operation.

It is another object of the instant invention to wrap the strip or strips of belt material simultaneously with the load bearing cord or cords so that inclined plies of belt material are formed with cord between each ply for easy helical winding around a building drum.

It is a further object of the invention to form a belt sleeve on the belt building drum by simultaneously winding belt material with the load bearing cord. The so formed belt sleeve is then cut into individual belt elements and covered with a fabric wrap. The covered belt elements are then cured to define a finished belt. Alternatively the belt sleeve may be cured first and then cut, ground, or otherwise severed into the desired belt shape such as a cut edge V-belt or V-ribbed belt.

In US-A-3300356, a method of forming a sleeve of material is disclosed, wherein a strip of polymeric material is helically wound with a strip of fibrous material to form inclined plies around a

drum. There is no suggestion of using this method to manufacture power transmission belts which meet the above objects.

According to the present invention, we provide a power transmission belt having a body portion with a tension section, a compression section and a load carrying section embedded between the tension section and compression section of the belt. The body portion comprises at least one strip of body material helically wound at an incline with respect to the surfaces of the finished belt. The strip of body material is wound against itself to form generally inclined and successive plies of body material. The load carrying section of the transmission belt comprises a tensile member or a load carrying cord spaced from at least one edge of the strip of body material and positioned against at least one side or surface of the strip. The load carrying cord is simultaneously helically wound with the strip on a belt building drum in the finished belt. The load carrying cord is spaced from one of the inner or outer surfaces of the finished belt and is impressed between layers in the body portion.

The invention further comprises the method of making the power transmission belt as described above and also the apparatus for making the same according to the features of claims 4 and 8, respectively.

Brief Description of the Drawings

The accompanying drawings show the preferred embodiment of this invention in which:

Figure 1 is a perspective view of a belt building assembly in accordance with the instant invention.

Figure 2 is a side view of the belt building drum assembly and feed mechanisms of the instant invention.

Figure 3 is a section view of the mechanism taken along the line 3-3 of the positioning of Figure 2.

Figure 4 is a cross-sectional view of a belt sleeve formed by the method of the instant invention showing the manner in which the belt sleeve may be cut for belts.

Figure 5 shows a cross-sectional view of a fabric wrapped belt made in accordance with the instant invention.

Figure 6 shows a cross-sectional view of a raw edged V-belt made in accordance with the instant invention.

Figure 7 shows a cross-sectional view of a V-ribbed belt made in accordance with the instant invention.

Figure 8 is an enlarged view of section 8-8 of the belt of Figure 6.

Detailed Description of the Invention

Reference is now made to Figure 1 which shows a belt sleeve 15 formed utilizing the method of the instant invention. The belt sleeve 15 is formed on a rotating drum assembly 22. The size of the belt sleeve and drum assembly determines the size of the finished belt. At least one continuous strip of belt material 10, shown enlarged, is helically wound on the drum assembly 22, in overlapping relationship. The strip is wound at an incline with respect to the surface of drum assembly 22 and the surface of the resulting belt sleeve. The belt material 10 is wound against itself forming generally inclined plies of belt material on the drum.

Tensile material 11, (shown in dashed lines), is also helically wound simultaneously onto building drum assembly 22 with the inclined strip. Tensile material 11 is preferably a load carrying cord. Preferred material for the cord includes polyester, fiberglass, and aramid. The cord 11, fed by roller 41, is pressed against the strip of belt material and adhered thereto at a predetermined distance from an edge of the strip. The strip and cord are then simultaneously wound on the drum assembly 22 so that the load bearing cord 11 lies between each inclined ply of the strip belt material 10. Thus, plies of belt material 10 are formed with load bearing cord 11 lying between each ply and at a precise distance from a surface of the formed belt sleeve. The strip of belt material 10 and the tensile material 11 are laid against the drum assembly and overlapped onto at least the just preceding wrap of belt material and cord using a cross feed mechanism 42 that traverses the drum using a positioning mechanism 43 as is well known in the art. Pressure roller 40 aids in pressing against and compacting the inclined plies of belt material and tensile material on the rotating drum assembly. Pressure roller 40 rotates about axis 39 in a direction substantially parallel to the rotational axis of the drum and moves in synchronization with positioning mechanism 43.

The belt material is preferably an elastomer such as material rubber, synthetic rubber, or blends thereof and may be of the type known as gum stock, fiber loaded stock, or rubberized fabric stocks. The tacky nature of the uncured belt material aids in adhering or cohering to the tensile material or cord to the strip of belt material. If fiber loaded stocks or gum stocks are used, the strip of elastomeric material may be formed by an extruder 52 such as shown in Figure 2. Thermoplastic materials may be extruded to form a strip and an adhesive may be used to adhere the cord to the strip of belt material.

After the extruded strip 10 is sized and conditioned by rollers 49, the strip passes through guide 30 which positions it precisely on traversing roller 43. Roller 41 shown in Figure 3 precisely feeds and positions cord 11 in its predetermined position relative to an edge and along a width of the moving strip of belt material. Roller 44 holds cord 11 and strip 10 together long enough to assure that the cord is adhered and seated in its predetermined position on the strip. Roller 43 feeds the strip belt material and the load carrying cord onto the surface of the belt building drum assembly 22 during the winding operation.

After completion winding of the the body material 10, and the load bearing cord 11 on drum assembly 22, the belt sleeve 15 is formed as is shown in cross-sectional view in Figure 4. A load carrying section 54 containing the load carrying cord 11 lies interpositioned between the tension section 53 and the compression section 55, so as to form the body portion of the belt.

In the preferred embodiment, the load carrying section 54 is spaced from edge 9 of the belt material 10. By simultaneously winding both the body material and cord in a helical fashion, the tensile load carrying section 54 is relatively precisely positioned in each resulting belt sleeve and each resulting belt element out from the sleeve. The plies of belt material 10 are "contoured" or "nested" around tensile cord 11 thus providing insulation and relatively precise placement for the tensile material 11. The cord is adhered or impressed against one side of the belt material in each finished belt sleeve. The sleeve can then be cut into belt body portions by cutting knife 48, (shown in Figure 1), as is well known in the art.

Strips of only belt material may be successively helically wound over the first cord and strip layer to form a thicker belt sleeve. The cutting lines of a thicker belt body portion 62 cut from belt sleeve 15, are shown at 52. In this case, the sleeve is cut to include more plies of belt material 10 of a greater sleeve thickness. The cutting lines 50 define the shape of a smaller belt body portion 60 cut from the belt sleeve of the instant invention. In this case, fewer plies of a narrower width will be used to build the smaller belt body portion.

In each belt body portion cut from belt sleeve 15, there is at least one ply of body material 13, 14 which forms part of both the tension section 53 and the compression section 55 of the belt element. This adds to the precise positioning and stability of the cord.

Figure 5 shows a belt body portion 18 of the instant invention after it is cut from the belt sleeve 15. The belt body portion 18 is thereafter covered by a fabric wrap 71 as is well known in the art. The resulting belt 19 is then cured using well known

methods. If required by the shape of the belt body portion cut from the sleeve, the belt body portion may be flipped or inverted as is well known in the art to achieve the configuration shown.

Alternatively, the method and apparatus outlined above may be used to form a raw edged V-belt. In this case, the entire belt sleeve is cured and then cut or ground into shape 80 as shown in Figure 6. Thus a belt severed from a cured belt sleeve can also be made using the method and teaching of instant invention.

A V-ribbed belt is shown in Figure 7. It is also made by helically winding belt material 10B simultaneously with the winding of tensile material 11B. Again, the entire belt sleeve is cured with cutting or grinding being done after the curing process.

Figure 8 shows a magnified section of the belt of Figure 6 showing tensile material 11A. After wear or a period of time, the plies of belt material 10A will be faintly visible. The belt of Figure 7 likewise would have faintly visible plies (not shown) after a period of time.

The body portion of the power transmission belt of the instant invention can comprise various configurations of belt material; and thus alternative embodiments are possible. For example, a strip of belt material used to form the belt body portion can be folded to achieve a chevron construction such as when nonhomogeneous materials are used for the belt body portion. Tensile material or cord is wound simultaneously with support material so that the tensile material lies between and adjacent the inclined plies of belt material.

Alternatively, an edge of the extruded strip of the belt support material has an edge that is looped around the tensile material cord to double the layering of the support material around the tensile material and also assure a precise placement of the cord. This would also allow a dual spiral application where a single wind of belt support material would be interpositioned between adjacent winds of cord.

Different belt material strip stock may be used to make the belt portion. For example, a strip of body material with embedded fabric may be used. Dual extruders may be used to extrude the basic body material stock desired or to extrude the fabric impregnated stock or another formulation of body stock to form the desired body portion.

The compression layer may also be formed by layering plies of various stock material on a belt building drum to achieve the desired compression section. The belt material 10 and tensile material 11 are helically wound on top of the various plies of the compression layer in this embodiment. The result is a desired belt composition or construction sought to be achieved.

While the present embodiments of this invention and the methods of practicing the same have been illustrated and described it would be recognized that this invention may be otherwise embodied and practiced within the scope of the following claims.

Claims

1. In a power transmission belt having a body portion with a tension section (53), a compression section (55), and a load carrying section (54) embedded between said tension section (53) and said compression section (55), said belt having top and bottom surfaces, the improvement comprising at least one strip (10) of body material helically wound at an incline with respect to one of said surfaces, said strip (10) being wound against itself to form generally inclined plies of body material, said strip (10) defining the belt body portion, and said load carrying section (54) comprising a tensile member (11) spaced from at least one edge (9) of said strip and positioned against at least one side of said strip, said tensile member (11) being helically wound with said strip (10) and spaced from one of said surfaces, said tensile member (11) being embedded in said body portion of said belt.
2. A power transmission belt as claimed in claim 1 wherein said strip (10) forms a contour around said tensile member (11) of said belt.
3. In a power transmission belt having a body portion with a tension section (53), a compression section (55), and a tensile member (11) embedded between said tension section (53) and said compression section (55), said belt having top and bottom surfaces, the improvement comprising at least one strip (10) of body material helically wound at an incline with respect to one of said surfaces, said strip (10) being wound against itself to form generally inclined plies of body material, said strip forming a contour around said tensile member (11) of said belt.
4. A method of making a power transmission belt comprising helically winding a strip of fibrous material (11) with polymeric material (10) in inclined plies around a drum (22) to form a sleeve (15), and curing the polymeric material (10), characterised in that the polymeric material is an elastomeric belt material and the fibrous material is a tensile cord material, and further characterised by adhering said strip of elastic belt material (10) to said strip of tensile

cord material (11) while simultaneously spacing said tensile material from at least one edge of said strip of belt material, prior to helically winding said adhered strips of belt material and tensile material around the drum (22) to form the sleeve, and cutting belt body portions from the sleeve.

5. A method according to claim 4 wherein the step of helically winding said belt material (10) includes the step of winding said belt material (10) so as simultaneously to form both a tension section (53) and a compression section (55) of said belt body portions.
6. A method according to claim 4 or 5 wherein said step of feeding further comprises the step of extruding said belt material (10).
7. A method according to any one of claims 4-6 further comprising the step of contouring said strip of belt material (10) around said strip of tensile material (11).
8. A sleeve building apparatus of the type having a rotating drum (22) and cross-feed means (42) for traversing the rotating drum (22) at a predetermined rate, and means for providing polymeric material (10) and tensile material (11) to said cross-feed means (42), and means for helically winding such materials (10, 11) in an overlapping relationship with respect to the surface of said drum (22) so as to form inclined plies of said materials on said rotation drum (22), characterised in that the apparatus is a belt sleeve building apparatus comprising means for providing at least one continuous strip of elastomeric belt material to said cross-feed means (42), means for adhering said tensile material (11) in the form of a cord to said continuous strip of belt material (10) at a predetermined location spaced from at least one edge (9) of said strip of belt material (10), said cross-feed means comprising means (41,43) for feeding said strip of belt material (10) with said adhered tensile cord material (11) to said rotating drum.
9. A sleeve building apparatus according to claim 8 which further comprises means for contouring said belt material (10) around said tensile material (11).

Patentansprüche

1. Bei einem Kraftübertragungsriemen mit einem Körper-Teil, der einen Zugabschnitt (53), einen Kompressionsabschnitt (55) und einen zwi-



While the present embodiments of this invention and the methods of practicing the same have been illustrated and described it would be recognized that this invention may be otherwise embodied and practiced within the scope of the following claims.

Claims

1. In a power transmission belt having a body portion with a tension section (53), a compression section (55), and a load carrying section (54) embedded between said tension section (53) and said compression section (55), said belt having top and bottom surfaces, the improvement comprising at least one strip (10) of body material helically wound at an incline with respect to one of said surfaces, said strip (10) being wound against itself to form generally inclined plies of body material, said strip (10) defining the belt body portion, and said load carrying section (54) comprising a tensile member (11) spaced from at least one edge (9) of said strip and positioned against at least one side of said strip, said tensile member (11) being helically wound with said strip (10) and spaced from one of said surfaces, said tensile member (11) being embedded in said body portion of said belt.
2. A power transmission belt as claimed in claim 1 wherein said strip (10) forms a contour around said tensile member (11) of said belt.
3. In a power transmission belt having a body portion with a tension section (53), a compression section (55), and a tensile member (11) embedded between said tension section (53) and said compression section (55), said belt having top and bottom surfaces, the improvement comprising at least one strip (10) of body material helically wound at an incline with respect to one of said surfaces, said strip (10) being wound against itself to form generally inclined plies of body material, said strip forming a contour around said tensile member (11) of said belt.
4. A method of making a power transmission belt comprising helically winding a strip of fibrous material (11) with polymeric material (10) in inclined plies around a drum (22) to form a sleeve (15), and curing the polymeric material (10), characterised in that the polymeric material is an elastomeric belt material and the fibrous material is a tensile cord material, and further characterised by adhering said strip of elastic belt material (10) to said strip of tensile cord material (11) while simultaneously spacing said tensile material from at least one edge of said strip of belt material, prior to helically winding said adhered strips of belt material and tensile material around the drum (22) to form the sleeve, and cutting belt body portions from the sleeve.
5. A method according to claim 4 wherein the step of helically winding said belt material (10) includes the step of winding said belt material (10) so as simultaneously to form both a tension section (53) and a compression section (55) of said belt body portions.
6. A method according to claim 4 or 5 wherein said step of feeding further comprises the step of extruding said belt material (10).
7. A method according to any one of claims 4-6 further comprising the step of contouring said strip of belt material (10) around said strip of tensile material (11).
8. A sleeve building apparatus of the type having a rotating drum (22) and cross-feed means (42) for traversing the rotating drum (22) at a predetermined rate, and means for providing polymeric material (10) and tensile material (11) to said cross-feed means (42), and means for helically winding such materials (10, 11) in an overlapping relationship with respect to the surface of said drum (22) so as to form inclined plies of said materials on said rotation drum (22), characterised in that the apparatus is a belt sleeve building apparatus comprising means for providing at least one continuous strip of elastomeric belt material to said cross-feed means (42), means for adhering said tensile material (11) in the form of a cord to said continuous strip of belt material (10) at a predetermined location spaced from at least one edge (9) of said strip of belt material (10), said cross-feed means comprising means (41,43) for feeding said strip of belt material (10) with said adhered tensile cord material (11) to said rotating drum.
9. A sleeve building apparatus according to claim 8 which further comprises means for contouring said belt material (10) around said tensile material (11).

Patentansprüche

1. Bei einem Kraftübertragungsriemen mit einem Körper-Teil, der einen Zugabschnitt (53), einen Kompressionsabschnitt (55) und einen zwi-



- schen dem Zugabschnitt (53) und dem Kompressionsabschnitt (55) eingebetteten lasttragenden Abschnitt (54) aufweist, und mit einer oberen und einer unteren Fläche, besteht die Verbesserung darin, daß mindestens ein Streifen (10) von Körper-Material mit einer Schräglage relativ zu einer der genannten Flächen schraubenförmig gewickelt ist, der Streifen (10) zur Bildung generell schrägverlaufender Lagen von Körper-Material gegen sich selbst gewickelt ist, der Streifen (10) den Riemen-Körper-Teil definiert, und der lasttragende Abschnitt (54) ein Zugelement (11) aufweist, das von mindestens einem Rand (9) des Streifens beabstandet, gegen mindestens eine Seite des Streifens positioniert ist, schraubenförmig mit dem Streifen (10) gewickelt, von einer der genannten Flächen beabstandet und in den Körper-Teil des Riemens eingebettet ist.
2. Kraftübertragungsriemen nach Anspruch 1, bei dem der Streifen (10) eine Kontur um das Zugelement (11) des Riemens bildet.
 3. Bei einem Kraftübertragungsriemen mit einem Körper-Teil, der einen Zugabschnitt (53), einen Kompressionsabschnitt (55) und ein zwischen dem Zugabschnitt (53) und dem Kompressionsabschnitt (55) eingebettetes Zugelement (11) aufweist, und mit einer oberen und einer unteren Fläche, besteht die Verbesserung darin, daß mindestens ein Streifen (10) von Körper-Material mit einer Schräglage relativ zu einer der Flächen schraubenförmig gewickelt ist, der Streifen (10) zur Bildung generell schrägverlaufender Lagen von Körper-Material gegen sich selbst gewickelt ist, und der Streifen (10) eine Kontur um das Zugelement (11) des Riemens bildet.
 4. Verfahren zum Herstellen eines Kraftübertragungsriemens, bei dem zur Bildung einer Hülse (15) ein Streifen aus faserigem Material (11) zusammen mit Polymer-Material (10) in schrägverlaufenden Lagen um eine Trommel (22) gewickelt und bei dem das Polymer-Material (10) gehärtet wird, dadurch gekennzeichnet, daß das Polymer-Material ein elastomeres Riemenmaterial ist und das faserige Material ein zugfestes Strang-Material ist, und ferner dadurch gekennzeichnet, daß der Streifen aus elastischem Riemenmaterial (10) an dem Streifen des zugfesten Strang-Materials (11) bei gleichzeitiger Beabstandung des zugfesten Materials von mindestens einem Rand des Streifens von Riemenmaterial in Anhaftung gebracht wird, bevor zur Bildung der Hülse die anhaftenden Streifen von Riemenmaterial und zugfestem Material schraubenförmig um die Trommel (22) gewickelt werden, und dadurch, daß Riemenkörper-Teile aus der Hülse geschnitten werden.
 5. Verfahren nach Anspruch 4, bei dem der Schritt des schraubenförmigen Wickelns des Riemenmaterials (10) einen Schritt umfaßt, in dem das Riemenmaterial (10) derart gewickelt wird, daß gleichzeitig ein Zugabschnitt (53) und ein Kompressionsabschnitt (55) der Körper-Teile gebildet werden.
 6. Verfahren nach Anspruch 4 oder 5, bei dem der Schritt des Zuführens ferner einen Schritt zum Extrudieren des Riemenmaterials (10) umfaßt.
 7. Verfahren nach einem der Ansprüche 4-6, ferner mit dem Schritt des Konturierens des Streifens von Riemenmaterial (10) um den Streifen von zugfestem Material (11).
 8. Hülseaufbauvorrichtung des Typs mit einer Drehtrommel (22) und einer Querszuführungseinrichtung (42) zur Bewegung über die Drehtrommel (22) mit einer vorbestimmten Rate, einer Einrichtung zum Zuführen von Polymer-Material (10) und zugfestem Material (11) zu der Querszuführungseinrichtung (42), und einer Einrichtung zum schraubenförmigen Wickeln dieser Materialien (10,11) in überlappender Beziehung zu der Oberfläche der Trommel (22) zur Bildung schrägverlaufender Lagen der Materialien auf der Drehtrommel (22), dadurch gekennzeichnet, daß die Vorrichtung eine Riemenhülseherstellungsvorrichtung ist, die eine Einrichtung zum Zuführen mindestens eines fortlaufenden Streifens von elastomeren Riemenmaterial zu der Querszuführungseinrichtung (42) und eine Einrichtung aufweist, um an einer vorbestimmten, von dem mindestens einen Rand (9) des Streifens von Riemenmaterial (10) beabstandeten Stelle das zugfesteste Material (11) in Form eines Strangs an dem fortlaufenden Streifen von Riemenmaterial (10) in Anhaftung zu bringen, wobei die Querszuführungseinrichtung eine Einrichtung (42,43) zum Zuführen des Streifens von Riemenmaterial (10) mit dem anhaftenden zugfesten Strang-Material (11) an der Drehtrommel aufweist.
 9. Hülseaufbauvorrichtung nach Anspruch 8, ferner mit einer Einrichtung zum Konturieren des Riemenmaterials (10) um das zugfesteste Material (11).



Revendications

1. Dans une courroie de transmission d'énergie comprenant une partie de corps ayant une section à traction (53), une section à compression (55) et une section de support de la charge (54) noyée entre ladite section sous traction (53) et ladite section sous compression (55), ladite courroie ayant des surfaces supérieure et inférieure, le perfectionnement comprenant au moins une bande (10) de matière de corps enroulée en hélice en étant inclinée par rapport à l'une desdites surfaces, la bande (10) étant enroulée contre elle-même de manière à former des plis sensiblement inclinés de matière de corps, ladite bande (10) constituant la partie de corps de la courroie et ladite section de support de la charge (54) comprenant un élément extensible (11) distant d'au moins un bord (9) de ladite bande et placé contre au moins un côté de ladite bande, ledit élément extensible (11) étant enroulé en hélice avec ladite bande (10) et étant distant de l'une desdites surfaces, ledit élément extensible (11) étant noyé dans ladite partie de corps de ladite courroie.

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2. Courroie de transmission d'énergie selon la revendication 1, dans laquelle ladite bande (10) forme un profil autour dudit élément extensible (11) de ladite courroie.

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3. Dans une courroie de transmission d'énergie ayant une partie de corps comprenant une section à traction (53), une section à compression (55) et un élément extensible (11) noyé entre ladite section à traction (53) et ladite section à compression (55), ladite courroie ayant des surfaces supérieure et inférieure, le perfectionnement comprenant au moins une bande (10) de matière de corps enroulée en hélice en étant inclinée par rapport à l'une desdites surfaces, ladite bande (10) étant enroulée contre elle-même de manière à former des plis sensiblement inclinés de matière de corps, ladite bande formant un profil autour dudit élément extensible (11) de ladite courroie.

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4. Procédé de réalisation d'une courroie de transmission d'énergie, comprenant l'enroulement en hélice d'une bande de matière fibreuse (11) avec de la matière polymère (10) en plis inclinés autour d'un tambour (22) de manière à former un manchon (15) et la maturation de la matière polymère (10), caractérisé en ce que la matière polymère est une matière élastomère de courroie et la matière fibreuse est une

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- matière en corde extensible et caractérisé par ailleurs par le collage de ladite bande de matière élastique de courroie (10) à ladite bande de matière extensible en corde (11) en espaçant simultanément ladite matière extensible d'au moins un bord de ladite bande de matière de courroie avant d'enrouler en hélice lesdites bandes collées de matière de courroie et de matière extensible autour du tambour (22) de manière à former le manchon et le découpage de parties de corps de courroie dans le manchon.

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5. Procédé selon la revendication 4, caractérisé en ce que l'étape d'enroulement en hélice de la matière de courroie (10) comprend l'étape d'enroulement de ladite matière de courroie (10) de manière à former simultanément aussi bien une section à traction (53) qu'une section à compression (55) desdites parties de corps de courroie.

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6. Procédé selon la revendication 4 ou 5, suivant lequel ladite étape d'alimentation comprend par ailleurs l'étape d'extrusion de ladite matière de courroie (10).

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7. Procédé selon l'une quelconque des revendications 4-6, comprenant par ailleurs l'étape de profilage de ladite bande de matière de courroie (10) autour de ladite bande de matière extensible (11).

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8. Machine de construction d'un manchon du type comprenant un tambour rotatif (22) et un moyen d'avance transversale (42) destiné à se déplacer le long du tambour rotatif (22) à une vitesse prédéterminée et un moyen pour alimenter ledit moyen d'avance transversale (42) en matière polymère (10) et en matière extensible (11) ainsi qu'un moyen pour enrouler en hélice ces matières (10, 11) en relation de recouvrement par rapport à la surface dudit tambour (22) de manière à former des plis inclinés desdites matières sur ledit tambour rotatif (22), caractérisée en ce que la machine est une machine de construction d'un manchon de courroie comprenant un moyen pour alimenter en au moins une bande continue de matière élastomère de courroie ledit moyen d'avance transversale (42), un moyen pour coller ladite matière extensible (11) ayant la forme d'une corde à ladite bande continue de matière de courroie (10) en un emplacement prédéterminé distant d'au moins un bord (9) de ladite bande de matière de courroie (10), ledit moyen d'avance transversale comprenant des moyens (41, 43) pour diriger ladite bande de

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matière de courroie (10) avec ladite matière extensible collée de corde (11) sur ledit tambour rotatif.

9. Machine de construction d'un manchon selon la revendication 8, qui comprend par ailleurs un moyen pour profiler ladite matière de courroie (10) autour de ladite matière extensible (11).

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