

POLYMERIC PRODUCT HAVING A FABRIC LAYER MEANS, AND METHOD OF MAKING THE SAME

5 Technical Field

This invention relates to a polymeric product having a fabric layer means, and to a method of making such a polymeric product.

Background Art

10 It is known to provide a polymeric product which has a fabric layer means provided with opposing sides, and at least one polymeric means or material secured to the fabric layer means. For example, see the U.S. Patent to Williams, No. 3,998,986; the U.S. Patent to Long, No. 4,062,989; and the U.S. Patent to Hollaway et al, No. 4,238,530.

15

Disclosure of the Invention

It is an object of the present invention to provide an improved polymeric product having a fabric layer means, and at least one polymeric compound or material secured to the fabric layer means, and
20 an improved method of making the product.

In particular, it is well known that a woven fabric structure that has been impregnated or coated with a polymeric material, such as a latex, has been used as an encapsulating or reinforcing member in
25 endless transmission belts, such as a V-belt, and in other products, and has undergone a progression of change, principally directed toward the relationship of the warp fill angularity to the longitudinal axis of the belt. For example, initially, the warp or fill of the fabric was at right angles to the longitudinal axis; then the fabric was
30 subsequently cut and turned on a

90° bias; then the fabric was subsequently cut and turned to a 120° bias; and then today the fabric comprises a seamless bias disposed at 120°. Each such change in the polymeric coated fabric was primarily
5 directed toward improving product flexibility. However, it was found according to the teachings of this invention that during such changes the three-dimensional aspect of the plain weave of the fabric had not been altered.

10 It is also well known in the art that improving structural flexibility or bending modulus of the polymeric coated fabric can be altered by decreasing yarn density (cover factor), decreasing twist of the yarn system, increasing the warp/fill angle, and/
15 or decreasing the number of cross-over points in the woven structure. Thus, it can be seen that the change in the base fabric structures has followed a need to optimize flexibility. An extension of this flexibility move in the art has been directed toward fabric manufacturing systems that emulate the desired bias and
20 use yarn bundles or fiber bundles that are not interlaced as in a woven structure, but are being held together in the third dimension by either a stitching thread or fiber reorientation, such as by needle
25 punching. However, the result of this change has been opposite to the objective, as flexibility was reduced.

However, it was found according to the teachings of this invention that a fabric means can be provided wherein the bias orientation is maintained
30 while the third dimension function is eliminated. This

is accomplished by utilizing polymeric material as the effective sole securement or bonding between the threads of the fabric means so as to impart its flexibility characteristic to the securement or bonding of the fabric means, whereby the resulting product has the desired structural flexibility or bending modulus and, therefore, according to the present invention there is provided a polymeric product having a fabric layer means, and at least one polymeric material secured to said fabric layer means; in which said fabric layer means comprises a first substantially planar layer of threads disposed in superimposed relation with a second substantially planar layer of threads, whereby said threads of said first layer are not woven with said threads of said second layer, said polymeric material having been applied or introduced in a liquid manner to said first and said second layers and still being in a liquid form whilst said first and second layers are in situ and said polymeric material effectively being the sole securement means securing said threads of said first layer to said threads of said second layer and thereby imparting a flexible characteristic between said threads of said first and second layers.

Accordingly, this invention may provide an improved polymeric product having a fabric layer means provided with at least one polymeric material secured to the fabric layer means, and said product of this invention according to the immediately preceding paragraph may have one or more of the novel features hereinafter shown or described.

Further according to the present invention there is provided a method of making a polymeric product having a fabric layer means, and at least one polymeric material secured to said fabric layer means; characterized by the steps of forming said fabric layer means to comprise a first substantially planar layer of threads and a second substantially planar layer of threads, with each layer of threads comprising a plurality of strands disposed in a non-interconnected, generally side-by-side parallel relation, and with said first layer of threads disposed in superimposed relation against said second layer of threads, whereby said threads of said first layer are not woven with said threads of said second layer; and, thereafter, applying or introducing said polymeric material in a liquid form to said first and said second layers in such a way that said polymeric material is

effectively the sole securement means securing said threads of said first layer to said threads of said second layer and thereby imparts its flexible characteristic to said securement means between said threads of said first and second layers, whereby said polymeric material is first disposed in liquid form against at least one side of said superimposed layers so as to exude into said superimposed layers, and whereby said disposed and exuded polymeric material is then dried to at least a condition thereof that tends to hold said strands of said layers in said generally side-by-side parallel relation.

This invention may provide an improved method of making such a product, and the method according to the immediately preceding paragraph may have one or more of the novel features as hereinafter shown or described.

Brief Description of the Drawings

The features of the invention, and its technical advantages, can be seen from the following description of preferred embodiments, together with the claims and the accompanying drawings, in which:

FIGURE 1 is an enlarged, fragmentary, partially broken away, cross-sectional, schematic, perspective view of an improved polymeric product of this invention;

FIGURE 2 is cross-sectional view of an endless transmission belt construction utilizing the polymeric product of FIGURE 1;

FIGURE 3 is a fragmentary view similar to FIGURE 2, and illustrates another type of belt utilizing the polymeric product of FIGURE 1;

FIGURE 4 is a fragmentary perspective view illustrating another product of this invention utilizing the polymeric product of FIGURE 1;

FIGURE 5 is a schematic top view of an improved method of this invention, and apparatus for making the polymeric product of FIGURE 1;

FIGURE 6 is an enlarged schematic side view of the method and apparatus of FIGURE 5;

FIGURE 7 is a schematic view illustrating a certain portion of the method and apparatus of FIGURES 5 and 6;

FIGURE 8 is an enlarged, schematic, fragmentary cross-sectional view taken on line 8-8 of FIGURE 7;

FIG. 9 is a view similar to FIG. 8 and illustrates another embodiment of this invention; and

FIG. 10 is a view similar to FIG. 8 and illustrates another embodiment of this invention.

5 Modes for Carrying Out the Invention

While the various features of this invention are hereinafter illustrated and described as being particularly adapted to provide a polymeric-coated fabric layer means for making particular products, it
10 is to be understood that the various features of this invention can be utilized singly or in various combinations thereof to provide a polymeric product for other uses and/or for other products as desired.

Therefore, this invention is not to be
15 limited to only the embodiments illustrated in the drawings, because the drawings are merely utilized to illustrate some of the wide variety of uses of this invention.

Referring now to FIG. 1, one embodiment of
20 the improved polymeric product of this invention is generally indicated by the reference numeral 20, and comprises a polymeric-coated fabric layer means having a fabric layer means that is generally indicated by the reference numeral 21 and is provided with opposed
25 sides 22 and 23; the polymeric product 20 also comprises two polymeric layers or means 24 and 25 respectively disposed on the opposite sides 22 and 23 of the fabric layer means 21 and having been exuded into the fabric layer means 21 to be secured thereto in a manner
30 hereinafter set forth.

The fabric layer means 21 of this invention comprises a first substantially planar layer 26 of threads or fibers 27 disposed in superimposed relation with a second substantially planar layer 28 of threads or fibers 29, whereby the threads 27 of the first layer 26 are not woven with the threads 29 of the second layer 28, but are secured thereto by the polymeric material or composition 24, 25 in such a manner that the polymeric material 24, 25 effectively comprises the sole securement or bonding which secures the threads 27 of the first layer 26 to the threads 29 of the second layer 28, and thereby imparts its flexible characteristic to the bonding arrangement between the threads 27 and 29 of the first and second layers 26 and 28.

In this manner, it is believed that the resulting polymeric-coated fabric layer means or polymeric product 20 of this invention will have an improved structural flexibility or bending modulus than if the fabric layer means 21 had comprised a conventional woven fabric layer, such as set forth in the aforementioned U.S. Patent Nos. 4,062,989 and 4,238,530, or had comprised stitched or needled structure as set forth in the aforementioned U.S. Patent No. 3,998,986, whereby these three U.S. Patents are being incorporated into this disclosure by this reference thereto.

In particular, it is believed that the polymeric-coated layer 20 of this invention can be readily utilized by itself, or with another polymeric product, by having one of the opposed outer surfaces

30 or 31 thereof secured to a surface of the polymeric product for the same purpose and in a manner similar to other prior known polymeric-coated fabric layer means.

5 For example, see the copending U.S. Patent application of Delmar D. Long, one of the co-inventors of this invention, Serial No. 350,969, filed February 22, 1982, wherein an additional tacky layer is provided on the polymeric-coated fabric layer means for such
10 securement purposes. Since this copending U.S. patent application describes the various uses of polymeric-coated fabric layer means, and a method and apparatus for making the same, which is similar to this invention, as will be apparent hereinafter, this copending
15 U.S. patent application is being incorporated into this disclosure by this reference thereto.

 Reference is now made to FIG. 2, wherein another polymeric product of this invention is generally indicated by the reference numeral 32, and utilizes
20 the previously described polymeric product 20. The polymeric product 32 comprises an endless power transmission belt of a typical "V" type, wherein a polymeric body 33 thereof has a substantially trapezoidal cross-sectional configuration defined by a pair of opposed
25 flat parallel top and bottom surfaces 34 and 35, with a pair of angled side surfaces 36 and 37 disposed therebetween. The belt construction 32 has the conventional tension section 38, compression section 39, and load carrying section 40 disposed intermediate
30 the tension section 38 and the compression section 39

in a manner well known in the art, the sections 38, 39, and 40 being made mainly of polymeric material.

As is conventional in the art, the opposed angular surfaces 36 and 37 of the belt body 33 are each adapted to have a friction layer, which comprises a fabric that is impregnated with a polymeric composition, and which is secured thereon by such friction layer either being disposed only on the surfaces 36 and 37 thereof, or by having the entire outside surface of the belt body 33 wrapped with the friction layer.

In any event, it can be seen that the belt construction 32 illustrated in FIG. 2 has the belt body 33 thereof completely wrapped by a strip of a polymeric-coated fabric layer means 20 of this invention, so that the opposed ends 40 and 41 of the layer means 20 are disposed and secured in overlapping relation, such as on the top surface 34 of the belt body 33 as illustrated in FIG. 2; this is conventional in the belt making art.

When utilizing the layer means 20 of this invention for forming the belt construction 32 of FIG. 2, it can be seen that either the side 30 or the side 31 thereof can be disposed in contact with the outer surfaces 34, 35, 36, and 37 of the polymeric body 33, and it is believed that the improved flexible characteristic of the polymeric product 20 will permit the polymeric product 20 to more readily conform to such surfaces 34, 35, 36, and 37, so that during a subsequent heat curing or vulcanizing of the belt

construction 32, after the layer 20 has been wrapped on the belt body 33 in a manner well known in the art of making belt constructions, the polymeric product 20 will be secured to the belt body 33 throughout its entire outer surface area.

Also, it is to be understood that the particular side 30 or 31 of the polymeric-coated fabric layer 20 of this invention that is to be secured to the sides 34, 35, 36, and 37 of the belt body 33 could be covered with an additional tacky layer of the aforementioned copending U.S. Patent application, Serial No. 350,969, filed February 22, 1982, to enhance the securement therebetween.

In any event, it can be seen that the outer surface 30 or 31 of the product 20 of this invention provides the contact facing of the belt construction 32 at the driving or driven insides 36 and 37 thereof, as is conventional in the art, while the fabric layer means 21 provides the desired reinforcing characteristic to the belt construction 32 and at the same time provides an improved flexibility thereto because of the effective flexible securement between the threads 27 and 29 of the first and second layers 26 and 28.

While the polymeric-coated fabric layer 20 of this invention has been previously described as forming an outside surface of a belt product, it is to be understood that the layer 20 of this invention can provide not only an outside surface thereof, but also in addition thereto, or in lieu thereof,

can form part of an inner layer of the belt product if desired. For example, reference is now made to FIG. 3, wherein another polymeric belt body or product 42 of this invention is provided, and comprises
5 a pair of polymeric layers 43 and 44 respectively having facing sides 45 and 46 being secured to each other by a strip 47 of the layer product 20 of this invention that is disposed intermediate the polymeric layers 43 and 44 and is secured thereto during a subsequent heating, curing, or vulcanizing of the belt
10 body 43 in a manner well known in the art of making belt constructions.

Also, while the polymeric-coated fabric layer 20 of this invention has previously been
15 described as forming a part or parts of a belt construction or the like, it is to be understood that there are other products that can utilize the layer 20 of this invention by itself or as a part thereof.

20 For example, the layer product 20 of this invention can provide a hose construction (generally indicated by the reference numeral 48 in FIG. 4) by having an elongated strip 49 of the layer 20 of this invention helically wrapped and secured in overlapping relation in a manner well known in the hose
25 construction art to provide the hose construction 48, together with or without additional wire reinforcing means as desired.

Further, it is to be understood that the
30 polymeric-coated fabric layer 20 of this

64

invention can provide part of a printing blanket, gasket means, etc., whereby it can be seen that the layer 20 of this invention can be utilized as a product itself, or with other products not disclosed in this application, because it is believed that the same is readily adapted to be utilized where any such polymeric-coated fabric layer means is presently being used, or where such a polymeric-coated fabric layer means could possibly be used.

10 The first layer 26 of thread means or threads 27 of the polymeric-coated fabric layer 20 comprises a plurality of threads, strands, yarns or the like disposed generally parallel to each other, with any desired pattern of spaces or non-spaces there-
15 between, and being disposed at an angle relative to the longitudinal axis of the layer 20, such as being at an acute angle to the longitudinal axis 50 as illustrated in FIG. 1.

 Similarly, the second layer 28 of thread
20 means or threads 29 of the polymeric-coated product 20 comprises a plurality of threads, strands, yarns or the like disposed generally parallel to each other, with any desired pattern of spaces or non-spaces there-
25 between, and being disposed at an obtuse angle relative to the longitudinal axis 50 of the layer 20 so as to cross with the threads 27 of the first layer 26 at some angle, such as between 90° to 120°. However, it is of course to be understood that any desired angle
30 between the threads 27 and 29 of the layers 26 and 28 can be provided, as desired.

Further, it is to be understood that the threads 27 and 29 of the layers 26 and 28 could comprise any one suitable material, or could be blends of suitable materials, with the threads or fibers 27 and 29 being uniform, dissimilar, or any desired combination thereof as desired.

Also, the polymeric material 24, 25 can comprise any suitable polymeric material, such as a latex, with the material of the layers 24 and 25 being like, similar or different, as desired.

In any event, as previously stated, the polymeric material 24, 25 provides the sole securement between the threads 27 and 29 of the layers 26 and 28 so as to add its flexible characteristic to such securement, so that the layer 20 will readily conform to the particular shape in the final product thereof, whether the same is formed into the hose 48 of FIG. 4, the belt configurations of FIGS. 2 or 3, or other products as desired, as well as add its flexibility to the final product together with the reinforcing characteristic of the fabric means 21 thereof.

While it is believed that the polymeric-coated fabric layer 20 of this invention can be made by any suitable method and apparatus, one such method and apparatus is generally indicated by the reference numeral 51 in FIGS. 5 6 and 7, and will now be described.

As illustrated in FIGS. 5 and 6, the method and apparatus 51 includes a tenter frame 52, similar to the tenter frames of the aforementioned U.S.

patents and application, that is adapted to be moved in any suitable manner from left to right in FIGS. 5 and 6, and to have the two layers 26 and 28 of threads 27 and 29 laid thereon at the desired angle so
5 as to be disposed in the stacked relation illustrated in FIG. 1.

For example, the threads 29 for the layer means 28 can be fed in beam fashion from a supply 53 thereof into an area 54 wherein the same
10 are cut and laid across the tenter frame 52 from one side 55 thereof to the other side 56 thereof, and are held thereon by the conventional tenter pins 57, so that each thread 29 extends from one side 55 of the tenter frame 52 to the other side 56 thereof at the
15 desired angle relative to the longitudinal axis 58 of the tenter frame 52.

Similarly, another beam of the threads 27 can be fed from a supply 59 thereof into the area 54 so as to have the threads 27 thereof cut and
20 laid across the tenter frame 52 on top of the threads 29 at an angle relative thereto, so that each thread 27 extends from the side 55 of the tenter frame 52 to the side 56 thereof at the desired angle relative to the longitudinal axis 58 of the tenter
25 frame 52.

It is to be understood that the threads 27 and 29 can be cut and laid on the tenter frame 52 in either a continuous or intermittent manner, as the superimposed layers 26 and 28 can then be indexed in
30 a continuous or intermittent manner from left to right

through the remaining portion of the apparatus 51 to have the polymeric material 24 and 25 applied thereto in much the same manner as provided by the methods and apparatus set forth in the aforementioned U.S. patents 5 and copending U.S. patent application.

In particular, after the layers 26 and 28 have been disposed in the superimposed relation on the tenter frame 52 to define the fabric layer means 21, the tenter frame 52 can be slightly outwardly 10 stretched in the area of the reference numeral 60 in FIGS. 5 and 6 to make sure that the threads 27 and 29 are disposed in a taut relation as the same pass between suitable coating means 61 and 62 that are respectively disposed on opposite sides of the tenter 15 frame 52 to respectively apply the polymeric coatings 24 and 25 in a liquid manner to the respective sides 22 and 23 of the fabric layer means 21, so that the coatings 24 and 25 will not only be secured to those sides 22 and 23, but also so that the coatings 24 and 20 25 will exude into the fabric layer means 21 to secure the threads 27 and 29 thereof together when the coatings 24 and 25 are subsequently dried by the drying apparatus (generally indicated by the reference numeral 63 in FIGS. 5 and 6).

25 However, before the now coated fabric means 21 passes into the heating unit 63, the coatings 24 and 25 are respectively doctored by suitable doctor members 64 and 65 to define the relatively smooth outer surfaces 30 and 31. The tenter frame 52 then further 30 stretches the polymeric-coated fabric product 20 in the

area of the reference numeral 66 in FIGS. 5 and 6 to make sure that the layer product 20 is held with its threads 27 and 29 in a taut manner as the coatings 24 and 25 are subsequently dried to at least a holding condition thereof by the heating unit 63.

While the heating member or unit 63 can comprise any suitable structure, the same comprises a heated air, oven-like member through which the layer 20 passes from left to right, so that by the time the layer 20 exits the heating member 63, the coatings 24 and 25 have been sufficiently dried so that the same will hold the threads 27 and 29 in their assembled and encapsulated manner.

If desired, a suitable cooling member or unit 67 can be provided to cool the layer 20 before the same is wound into a supply roll 68 thereof. The supply roll 68 has a web 69 of material wound with the layer 20 intermediate the coils thereof so as to prevent sticking of the coils of the layer 20 in the supply roll 69 thereof if desired, as is well known in the art.

Therefore, it can be seen that it is a relatively simple method of this invention to form the polymeric-coated fabric layer means or product 20 in the manner previously set forth.

However, while the method and apparatus 51 of this invention has been previously described as having the threads 27 disposed on top of the threads 29 in the area 54, without providing any securement therebetween, so that the stacked threads

27 and 29 have the appearance illustrated schematically in FIG. 8 at the time the liquid coating 24 and 25 are to be applied thereto, it is to be understood that one or both layers 26 and 28 of the threads 27 and 29 could be precoated, either on just the contacting sides thereof or completely around the same, with a liquid polymeric material, such as latex, before the same are disposed in superimposed relation on the tenter frame 52.

For example, it can be seen schematically in FIG. 7 that coating units 70 and 71 can be respectively provided for the threads 27 and 29 to apply a polymeric coating 72 to only the sides 73 and 74 of the threads 27 and 29 which will be disposed facing each other in the manner illustrated in FIG. 9, so that the polymeric material 72 will provide sufficient adhesive means to hold the threads 27 and 29 together as the same pass through the coating units 61 and 62 in the apparatus 51. In this manner, the coatings 24 and 25, together with the coating 72, form the polymeric means that secures the threads 27 and 29 together in the final product thereof.

However, it is to be understood that the layer means or polymeric product 20 of this invention could have a cross-sectional configuration that looks like the structure illustrated in FIG. 9 without having the additional coatings 24 and 25 applied thereto, as the polymeric material 72 will still provide the effective sole securement means for securing the layers 26 and 28 of threads 27 and 29 together.

Alternately, the polymeric applying units 70 and 71 can be so constructed and arranged that the same will completely coat the threads 27 and 29 with a polymeric material 75 as illustrated in FIG. 10, so that when the threads 27 and 29 are disposed in superimposed relation on the tenter frame 52, the resulting structure will have the appearance as illustrated in FIG. 10, so that the coatings 24 and 25 can be subsequently applied thereto by the coating units 61 and 62 if desired. In this manner, the coatings 24 and 25, together with the coatings 75, form the polymeric means that secures the threads 27 and 29 together in the final product thereof.

However, as previously stated, the coatings 24 and 25 need not be provided for forming the layer means or polymeric product 20 of this invention, as the polymeric material 75 will provide the only polymeric material thereof and will provide the effective sole securement or bonding for securing the threads 27 and 29 together in the manner previously set forth, and as illustrated in FIG. 10.

Also, it is to be understood that only one coating 24 or 25 need be provided for making the product 20 of this invention, as the same will sufficiently exude into the fabric means 21 to secure the threads 27 and 29 together if the precoatings 72 or 75 are not also utilized.

Therefore, it can be seen that there are various methods and apparatus that can be utilized to make the layer 20 of this invention having the

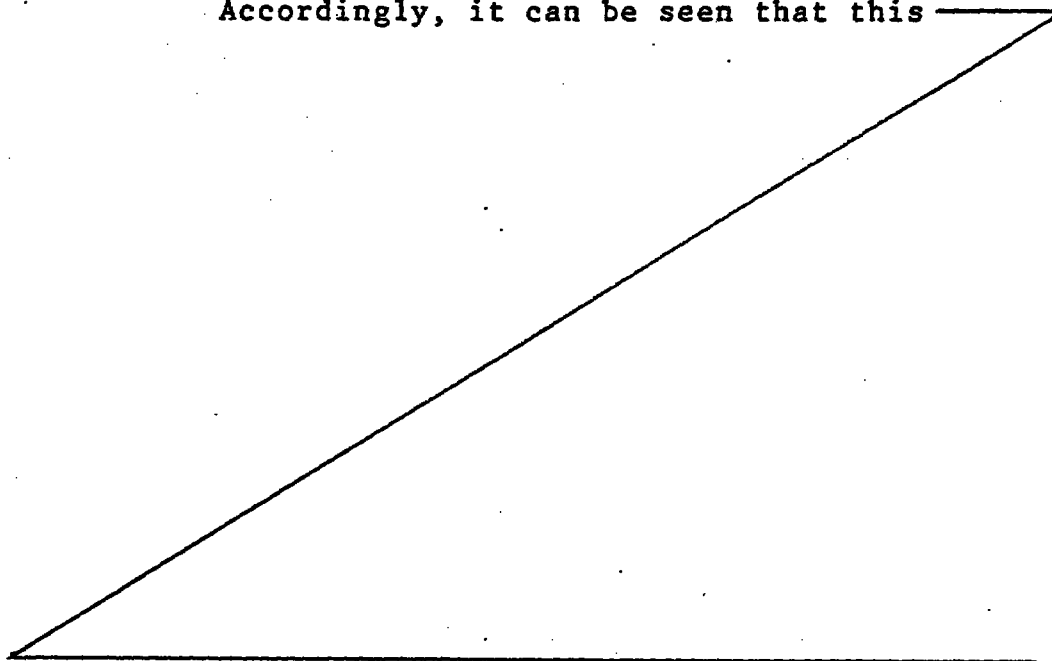
unique features previously set forth.

Thus, it can be seen that it is a relatively simple method of this invention to provide the polymeric-coated fabric layer means or polymeric product 5 20 of this invention that comprises a fabric layer means 21, provided with opposed sides 22 and 23, and at least one polymeric material 72, 75, 24 and/or 25 secured to the fabric layer means 21; the fabric layer means 21 comprises a first substantially planar layer 10 26 of threads or fibers 27 disposed in superimposed relation with a second substantially planar layer 28 of threads or fibers 29, whereby the threads 27 of the first layer 26 are not woven with the threads 29 of the second layer 28. The polymeric material 72, 75, 24 and/or 15 or 25 effectively is the sole securement or bonding which secures the threads 27 of the first layer 26 to the threads 29 of the second layer 28, and thereby imparts its flexible characteristic to the securement between the threads 27 and 29 of the first and second 20 layers 26 and 28.

While the product 20 of this invention has been previously described as having the threads 27 and 29 separated from each other before the polymeric material is added thereto, it is to be understood that the threads 27 and 29 could initially be 25 stitched in stacked relation with a sewing thread that will dissolve after the polymeric material is added thereto, so that the subsequently added polymeric material still provides the effective sole securement means. 30

As previously stated, the threads 27 and 29, and the polymeric material 24, 25, 72 and 75 can comprise any suitable material or combination thereof. However, it is to be understood that any of the material 27, 29, 24, 25, 72 and 75 can be of particular type or types set forth in the aforementioned U.S. patents and/or patent application that have been incorporated into this application by the previous reference thereto. Also, while the heating unit 63 has been described as drying the coatings 24, 25, 72 and/or 75 to a condition that will hold the threads 27 and 29 in secured-together relation, such heating unit can provide such dried condition without curing of the coatings 24, 25, 72 and/or 75 as in the aforementioned U.S. patents and/or patent application, so that such coatings can subsequently be cured, such as during the formation of the final desired product as previously described. However, it is to be understood that the heating member 63 can cure the coatings 24, 25, 72 and/or 75, if desired, as the final product may be such cured layer 20.

Accordingly, it can be seen that this



invention not only provides an improved polymeric product, but also this invention provides an improved method of making such a polymeric product.

While the forms and methods of this invention now preferred have been illustrated and described as required, it is to be understood that other forms and method steps can be utilized and still fall within the scope of the appended claims.

**CLAIMS:**

1. A polymeric product having a fabric layer means, and at least one polymeric material secured to said fabric layer means; in which said
5 fabric layer means comprises a first substantially planar layer of threads disposed in superimposed relation with a second substantially planar layer of threads, whereby said threads of said first layer are not woven with said threads of said second layer, said polymeric material having been applied or introduced in a liquid manner to said
10 first and said second layers and still being in a liquid form whilst said first and second layers are in situ and said polymeric material effectively being the sole securement means securing said threads of said first layer to said threads of said second layer and thereby imparting a flexible characteristic between said threads of said first
15 and second layers.
2. A polymeric product as set forth in Claim 1, in which said polymeric material has at least a portion thereof disposed between at least some of said threads of said first layer and at least some of
20 said threads of said second layer.
3. A polymeric product as set forth in Claim 1, in which said threads of said first layer comprise a plurality of strands disposed in side-by-side, generally parallel relation.
25
4. A polymeric product as set forth in Claim 3, in which said threads of said second layer comprise a plurality of strands disposed in side-by-side, generally parallel relation, and at an angle relative to said strands of said first layer.
30
5. A polymeric product as set forth in Claim 4, in which said fabric layer means has a longitudinal axis with said strands of said first layer crossing said axis at an acute angle relative thereto, and said strands of said second layer crossing said axis at an obtuse angle
35 relative thereto.



6. A polymeric product as set forth in Claim 1, in which said polymeric material comprises a layer of polymeric material disposed on one of the sides of said fabric layer means and having exuded into said fabric layer means to define at least part of said sole
5 securement means.
7. A polymeric product as set forth in Claim 6, in which said polymeric material comprises a further layer of polymeric material disposed on the other of said sides of said fabric layer means and
10 having exuded into said fabric layer means to define at least a further part of said sole securement means.
8. A polymeric product as set forth in claim 1, in which said polymeric material comprises polymeric material that initially was
15 provided at least on said threads of one of said first and second layers before said first layer was disposed in superimposed relation with said second layer.
9. A polymeric product as set forth in Claim 1, in which said
20 product comprises an endless power transmission belt.
10. A polymeric product as set forth in Claim 1, in which said product comprises a sheet-like strip of said fabric layer means and said polymeric means.
25
11. A polymeric product as set forth in Claim 1, in which said polymeric product is in the form of a sheet-like strip, which is secured to the surface of a polymeric body.
- 30 12. A polymeric product as set forth in Claim 11, in which said product comprises an endless power transmission belt, and said surface of said body comprises an exterior surface of said body, whereby said sheet-like strip defines an exterior surface of said belt.
- 35 13. A polymeric product as set forth in Claim 11, in which said product comprises an endless power transmission belt, and said surface



of said body comprises an interior surface of said body, whereby said sheet-like strip defines an interior part of said belt.

14. A method of making a polymeric product having a fabric layer means, and at least one polymeric material secured to said fabric layer means; characterized by the steps of forming said fabric layer means to comprise a first substantially planar layer of threads and a second substantially planar layer of threads, with each layer of threads comprising a plurality of strands disposed in a non-interconnected, generally side-by-side parallel relation, and with said first layer of threads disposed in superimposed relation against said second layer of threads, whereby said threads of said first layer are not woven with said threads of said second layer; and, thereafter, applying or introducing said polymeric material in a liquid form to said first and said second layers in such a way that said polymeric material is effectively the sole securement means securing said threads of said first layer to said threads of said second layer and thereby imparts its flexible characteristic to said securement means between said threads of said first and second layers, whereby said polymeric material is first disposed in liquid form against at least one side of said superimposed layers so as to exude into said superimposed layers, and whereby said disposed and exuded polymeric material is then dried to at least a condition thereof that tends to hold said strands of said layers in said generally side-by-side parallel relation.

15. A polymeric product having a fabric layer means, substantially as herein described with reference to FIGURE 1, or 2, or 3, or 4, or 8 or 9, or 10 of the accompanying drawings.

16. A method of making a polymeric product substantially as herein described with reference to Figures 6 to 7 of the accompanying drawings.

80



17. A polymeric product having a fabric layer means, and at least one
polymeric material secured to said fabric layer means; in which said
fabric layer means comprises a first substantially planar layer of
threads disposed in superimposed, continuously bonded, relation with a
5 second substantially planar layer of threads, whereby said threads of
said first layer are not woven with said threads of said second layer,
said polymeric material having been applied or introduced in a liquid
manner to said first and said second layers and still being in a
liquid form whilst said first and second layers are in situ and said
10 polymeric material effectively being the sole securement means
securing said threads of said first layer to said threads of said
second layer and thereby imparting a flexible characteristic between
said threads of said first and second layers.

15

20

25

30

35