

POLYMERIC-COATED FABRIC LAYER, PRODUCT
UTILIZING THE LAYER, AND METHOD AND
APPARATUS FOR MAKING THE SAME

Technical Field

- 5 This invention relates to an improved polymeric-coated fabric layer means and a polymeric product utilizing such fabric layer means, as well as to a method and apparatus for making such a fabric layer means.

10 Background Art

- It is known in the art to provide a polymeric-coated fabric layer means which comprises a fabric layer having opposed sides, and a layer of polymeric material which is secured to one of the sides of the fabric layer and has an outer surface facing away from the fabric layer. For example, see the U.S. Patent to Long, No. 4,062,989, and the U.S. Patent to Long et al, No. 4,205,559.

Disclosure of the Invention

- 20 It is one feature of this invention to provide an improved polymeric-coated fabric layer means, such as for being secured to a surface of an endless transmission belt construction and the like.

- In particular, it is well known that the addition of polymeric material, such as rubber, to a given surface, such as a fabric layer, to build gauge is readily accomplished by the calendering process using dry rubber compounds. Producing a comparable structure by applying liquid polymeric coatings can be accomplished, but only in multiple passes due in major
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part to the potential for the development of surface skin, thereby causing one or both of two major problems, namely, blisters or interfacial film failure.

5 It is also well known that liquid polymeric compounds or solvents that have low viscosities (e.g. - less than 5,000 CPS) can release their serum without the formation of the surface skin. However, the problem of utilizing such compounds is to provide some means of encapsulating the compounds in an isolated manner in order to allow
10 for such evaporation.

Accordingly, it is believed according to the teachings of this invention that such low viscosity polymeric compounds can be readily utilized for coating a fabric layer, with the resulting product having
15 sufficient gauge or thickness, if a gauge-building layer is first secured to the fabric layer before the polymeric layer is secured thereto.

According to the present invention there is provided a polymeric-
20 fabric coated fabric layer means comprising a fabric layer, a layer of polymeric material secured to one side of said fabric layer, and a gauge-building layer having secured to said one side of said fabric layer before said polymeric material layer is secured thereto, said gauge-building layer having a plurality of voids therein, said
25 polymeric layer filling said voids of said gauge-building layer, and in which said gauge-building layer comprises a plurality of fibers defining said voids therebetween.

Accordingly, this invention may provide an improved polymeric-
30 coated fabric layer according to the immediately preceding paragraph having one or more of the novel features as hereinafter shown or described.

Further according to the present invention there is provided a
35 method of making a belt construction comprising a polymeric belt part

having a surface and a polymeric-coated fabric layer means having an outer surface secured to said surface of said belt body, said method comprising the steps of providing a fabric layer, securing a main layer of polymeric material to one side of said fabric layer, forming said main layer of polymeric material to have said outer surface facing away from said one side of said fabric layer, disposing said outer surface of said layer means against said surface of said belt body to provide an assembly thereof, and, thereafter, bonding said outer surface of said layer means to said surface of said belt body by a heat curing or vulcanization operation on said assembly, characterised by the steps of securing a gauge-building layer of fibers to said one side of said fabric layer with another layer of polymeric material that is disposed on said one side before said layer of fibers is disposed thereon, whereby said gauge-building layer of fibers has a plurality of voids therein; and then filling said voids of said gauge-building layer of fibers with said polymeric material of said main layer in a liquid form thereof to form said main layer.

This invention may also provide a method according to the immediately preceding paragraph having one or more of the novel features as hereinafter shown or described.

Further according to the present invention there is provided apparatus when used for making a polymeric-coated fabric layer having a fabric layer, and a layer of polymeric material secured to one side of said fabric layer, said apparatus comprising means for securing a gauge-building layer to said one side of said fabric layer before said polymeric layer is secured thereto; said gauge-building layer has a plurality of voids therein; the apparatus having means for filling said voids of said gauge-building layer with said polymeric layer; and in which said means for securing said gauge-building layer comprises means for securing a plurality of fibers to said one side of said fabric layer so as to define said voids therebetween.

This invention may provide an apparatus for making a polymeric-coated fabric layer means, in accordance with the immediately

preceding paragraph having one or more of the novel features hereinafter shown or described.

Further according to the present invention there is provided a
5 polymeric product having a polymeric-coated fabric layer means secured to a surface thereof, said layer means comprising a fabric layer, and a layer of polymeric material secured to one side of said fabric layer; said product having a gauge-building layer secured to said one side of said fabric layer before said polymeric layer is secured
10 thereto; said gauge-building layer having a plurality of voids therein, said polymeric layer filling said voids of said gauge-building layer.

This invention may provide an improved product utilizing a
15 polymeric-coated fabric layer means, according to the immediately preceding paragraph having one or more of the novel features hereinafter shown or described.

Brief Description of the Drawings

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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:

25 FIGURE 1 is a broken away cross-sectional perspective view of the polymeric-coated fabric layer means of this invention;

FIGURE 2 is a cross-sectional view of an endless

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power transmission belt construction or the like utilizing the layer means of this invention that is illustrated in FIG. 1;

FIG. 3 is a schematic view illustrating the method and apparatus of this invention for making the polymeric-coated fabric layer means of FIG. 1;

FIG. 4 is a schematic, fragmentary, reduced top view of the apparatus of FIG. 3;

FIG. 5 is a view similar to FIG. 1 and illustrates another embodiment of the polymeric-coated fabric layer means of this invention;

FIG. 6 is a view similar to FIG. 3 and illustrates another embodiment of the method and apparatus of this invention for forming the polymeric-coated fabric layer means illustrated in FIG. 5; and

FIG. 7 is a reduced, fragmentary, top view of the method and apparatus illustrated in FIG. 6.

Best 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 is to be understood that the various features of this invention can be utilized singly or in various combinations thereof to provide a polymeric-coated fabric layer means for other uses and/or other products as desired.

Therefore, this invention is not to be limited to only the embodiments illustrated in the

drawings, because the drawings are merely utilized to illustrate one of the wide variety of uses of this invention.

Referring now to FIG. 1, the improved polymeric-coated fabric layer means of this invention is generally indicated by the reference numeral 10, and comprises a suitable fabric layer 11 of a type well known in the art, such as a bias fabric layer, having opposed sides 12 and 13, and a layer 14 of gauge-building material. The layer 14 is secured to the side 12 of the fabric layer 11 in a manner hereinafter set forth to define an outer, substantially flat surface 15. The gauge-building layer 14 of this invention comprises a foamed polymeric layer, such as a foamed latex layer, which has an open cellular structure throughout the same, as represented generally by the reference numeral 16 in FIG. 1. A polymeric layer 19 is subsequently secured to the side 12 of the fabric layer 11 by being overcoated on the gauge-building layer 14, whereby the polymeric material fills the voids or openings 16 of the gauge-building layer 14, such polymeric layer 19 being any suitable polymeric material, such as a latex or the like. It is believed that such cellular structure 16 of the foamed polymeric layer 14 readily permits the layer 19 to initially have a relatively low viscosity and still be held in position by the gauge-building layer 14 for subsequent drying thereof, as will be apparent hereinafter and for the reasons previously set forth.

The layer 19 defines an outer surface 19' for the layer means 10, which is adapted to be secured to a surface of a polymeric product in a manner similar to other prior known polymeric-coated fabric layer means.

5 For example, see U.S. Patent 4,501,771 issued February 26, 1985, of Delmar D. Long, one of the co-inventors of this invention, wherein a tacky layer is provided for such securement purposes. Since this patent describes the various uses of
10 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 patent is being incorporated into this disclosure by this reference thereto.

15 In addition, the aforementioned U.S. Patents, No. 4,062,989 to Long and No. 4,205,559 to Long et al, are also being incorporated into this disclosure by this reference thereto, as such U.S. Patents disclose other types of polymeric-coated fabric layer
20 means for uses similar to the uses of the polymeric-coated fabric layer means 10 of this invention.

 If desired, another layer 17 of polymeric material, such as a latex, can be secured to the other side 13 of the fabric layer 11 so as to define
25 an outside surface 18 thereof, which will subsequently provide an outside surface of the product utilizing such layer means 10.

 However, it is to be understood that the polymeric layer 17 could have its surface 18 secured

to the polymeric product, while the surface 19' of the polymeric layer 19 defines the outside surface of the product utilizing the layer means 10 of this invention.

5 Also, the particular surface of the layer means 10 that is to be secured to the polymeric product could be provided with the tacky layer of the aforementioned U.S. Patent 4,501,771 to Long, to enhance the securement therebetween.

10 For example, reference is now made to FIG. 2, whereing a product of this invention is generally indicated by the reference numeral 20, and comprises an endless power transmission belt of a typical "V" type. The polymeric body 21 thereof
15 has a substantially trapezoidal cross-sectional configuration which is defined by a pair of opposed flat parallel top and bottom surfaces 22 and 23, with a pair of angled side surfaces 24 and 25 disposed therebetween. The belt construction 20 has the con-
20 ventional tension section 26, compression section 27, and load-carrying section 28 disposed intermediate the tension section 26 and compression section 27 in a manner well known in the art.

25 As is conventional in the art, the opposed angular surfaces 24 and 25 of the belt construction 20 are each adapted to have a friction layer, which comprises a fabric that is impregnated with a polymeric composition, and which is secured thereon
30 by such friction layer either being disposed only on the surfaces 24 and 25 thereof, or by having the entire

outside surface of the belt body 21 wrapped with the friction layer.

In any event, it can be seen that the belt construction 20 illustrated in FIG. 2 is completely wrapped by a strip of the polymeric-coated fabric layer means 10 of this invention in such a way that the opposed ends 29 and 30 of the layer means 10 are disposed and secured in overlapping relation, such as on the top surface 22 of the belt construction 20 as illustrated in FIG. 2; this is conventional in the belt making art.

When utilizing the layer means 10 of this invention for forming the belt construction 20 of FIG. 2, it can be seen that either the side 18 or the side 19' thereof can be disposed in contact with the outer surfaces 22, 23, 24, and 25 of the polymeric body 21 of the belt construction 20 so as to readily conform to such surfaces 22, 23, 24, and 25 during a subsequent heat curing or vulcanizing of the belt construction 20 after the layer means 10 has been wrapped on the belt body 21 in a manner well known in the art of making belt constructions.

However, it is believed that by utilizing the foamed layer 14 with the over-coating 19 for being secured to the surfaces 22, 23, 24, and 25 of the belt body 21, excellent adhesion will be provided between the layer 19 and the belt body 21 during the subsequent vulcanizing or curing operation of the belt construction 20 since the cellular construction 16 of the foamed layer 14 readily

permits the layer 19 to conform to the surface 22, 23, 24, and 25 of the belt body 21 not only during the wrapping of the layer means 10 against the belt body 21, but also during the subsequent heat curing and vulcanizing operation. This feature is disclosed and claimed in applicants' U.S. Patent 4,522,869 issued June 11, 1985, whereby such patent is being incorporated into this application by this reference thereto.

As illustrated in FIG. 2, the outer surface 18 of the layer 17 provides the contact facing of the belt construction 20 at the driving or driven sides 24 and 25 thereof, as is conventional in the art.

While the layer means 10 of this invention has been previously described as forming an outside surface of a belt product, it is to be understood that the layer means 10 of this invention can provide not only an outside surface thereof, but also in addition thereto, or in lieu thereof, could form part of an inner layer of the belt product if desired. In fact, the layer 17 could also be a foamed polymeric layer in a manner similar to the layer 14 so as to provide gauge-building layer on the side 13 of the fabric layer 11, if desired.

Also, while the layer means 10 of this invention has been previously 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 means 10 of this invention. For example, the layer means 10 can provide part of a

printing blanket, part of a hose construction, as well as be utilized for making the entire hose construction, gasket means, etc., whereby it can be seen that the layer means 10 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 polymeric-coated fabric layer means could possibly be used.

While the layer means 10 of this invention is hereinafter illustrated and described as being formed by a particular method and apparatus as illustrated in FIGS. 3 and 4, it is to be understood that this invention is not to be limited to the specific method and apparatus illustrated in FIGS. 3 and 4, as the same is merely being disclosed as a believed-to-be possible method and apparatus for making the layer means 10 of this invention.

Therefore, reference is now made to FIGS. 3 and 4, wherein a method and apparatus of this invention for forming the layer means 10 of FIG. 1 is generally indicated by the reference numeral 31, and will now be described.

As illustrated in FIG. 3, the fabric layer 11 is fed from a supply roll 32 thereof through a liquid 33 that impregnates and lubricates the threads thereof so that the same can be readily stretched on a tenter frame 34 in a direction transverse to the longitudinal direction of the fabric sheet 11. Thereafter, the

foamed polymeric material 14, in liquid form, is applied to the top surface 12 of the fabric sheet 11, while simultaneously the polymeric material 17, in liquid form, is applied to the bottom surface 13 of the fabric sheet 11. Respective coating units, generally indicated by the reference numerals 35 and 36 in FIG. 3, are used. The liquid materials 14 and 17 are respectively doctor-
ed by suitable doctor members 37 and 38 disposed on opposite sides of the now coated fabric sheet 11 to
10 produce the coated fabric layer means of this invention, which is generally indicated by the reference numeral 10 in FIG. 3. The coatings 14 and 17 are sufficiently liquid to impregnate the fiber bundles of the fabric layer 11 so as to provide good adhesion
15 of the layers 14 and 17 to the fabric layer 11.

The coated sheet 11 is now passed through a heating unit , generally indicated by the reference numeral 39, for substantially drying the coatings 14 and 17 without curing the same.

20 The method and apparatus 31 of this invention is also adapted to provide the overcoat 19 on the gauge-building layer 14 of the polymeric-coated fabric layer means 10, if desired. For example, such overcoating 19 can be applied in liquid form by a
25 suitable applicator (generally indicated by the reference numeral 42 in FIG. 3), and can be doctor-
ed by a suitable doctor member 43 which either provides a thickness to the overcoating 19 above the entire surface 15 of the foamed layer 14, or merely causes the
30 coating 19 to just fill the openings 16 in the side 15

of the foamed layer 14, as desired.

After the overcoating 19 is applied to the side 15 of the foamed layer 14, the polymeric-coated fabric layer means 10 is passed through a heating unit 44 which substantially dries the overcoating 19, without curing the layers 14, 17, and 19, before the polymeric-coated fabric layer means 10 of this invention is wound into a supply roll 40 thereof, with a sheet 41 wound therewith to prevent the wound polymeric-coated fabric layer means 10 of this invention from securing to itself in the roll 40, as is well known in the art.

Therefore, it can be seen that when it is desired to utilize the layer means 10 of this invention, a sufficient quantity thereof can be dispensed from the supply roll 40 thereof to be utilized either by itself, when subsequently heat cured, or remaining uncured or in combination with a polymeric product, such as by forming the belt construction 20 in the manner previously described, whereby it can be seen that this invention provides an improved polymeric-coated fabric layer means 10 that comprises a fabric layer 11 having opposed sides 12 and 13, a layer of polymeric material 19 secured to the side 12 of the fabric layer 11 and having an outer surface 19' facing away from the fabric layer 11, and a gauge-building layer 14 secured to the one side 12 of the fabric layer 11 before the polymeric layer 19 is secured thereto, the gauge-building layer 14 having a plurality of voids 16 therein filled with the polymeric

layer 19.

Another improved polymeric-coated fabric layer means of this invention is generally indicated by the reference numeral 10A in FIGS. 5-7. Parts thereof similar to the layer means 10 previously described are indicated by like reference numerals, followed by the reference letter "A".

As illustrated in FIG. 5, the layer means 10A comprises the fabric layer 11A having opposed sides 12A and 13A, with the side 12A having a gauge-building layer (generally indicated by the reference numeral 14A) secured thereto in a manner hereinafter set forth; a polymeric layer 19A fills the voids 16A in the gauge-building layer 14A in a manner hereinafter set forth to define one of the opposed sides 19'A of the layer means 10A. In addition, the layer 17A can be secured to the other side 13A of the fabric layer 11A to define the other opposed side 18A of the layer means 10A.

The gauge-building layer 14A of this invention comprises a plurality of elongated fibers 45 that have the long dimensions thereof oriented so as to be disposed substantially transverse to side 12A of the fabric layer 11A in order to provide thickness to the gauge-building layer 14A and define the voids 16A therebetween which are filled by the polymeric material or layer 19A in a manner hereinafter set forth. The polymeric material 19A is adapted to have a low viscosity, since the gauge-building layer 14A will hold the polymeric material 19A in place

during a subsequent drying thereof.

While the fibers 45 can comprise any suitable fibers, such as conventional reinforcing fibers for polymeric material, the same can be of a material
5 which readily permits the same to be electrostatically flocked in an oriented manner onto the surface 12A of the fabric layer 11A in order to be secured thereto in an upstanding manner to provide the thickness or gauge for the gauge-building layer 14A.

10 For example, reference is now made to FIGS. 6 and 7, wherein the method and apparatus of this invention for forming the layer means 10A is generally indicated by the reference numeral 31A. Parts thereof similar to the apparatus 31 of FIGS. 3 and 4 previously
15 described are indicated by like reference numerals, followed by the reference letter "A".

As illustrated in FIG. 6, after the fabric layer 11A has been transversely stretched by the tenter frame 34A, the liquid coating 17A is applied to the
20 side 13A thereof by the applicator means 36A, and is doctored by the doctor means 38A in the manner previously described.

It is believed that the side 12A of the fabric layer 11A will now have sufficient liquid polymeric
25 material thereon which is provided by the coating means 17A impregnating and exuding through the fabric layer 11A, as well as provided by the bath 33A, so that the fibers 45 will adhere thereto when the same engage the side 12A of the fabric layer 11A.

30 In particular, it is believed that the fibers

45 can be supplied by a unit 46 that blows the fibers 45 between a pair of electrically and oppositely charged plates 47 and 48 that are disposed on opposite sides of the fabric layer 11A and that create an electrostatic field therebetween in a manner well known in the art to cause the fibers 45 to align with their long dimensions extending between the plates 47 and 48, so that when the same fall by gravity and contact the surface 12A of the fabric sheet 11A, the fibers 45 are disposed with their long dimensions substantially transverse thereto and will be adapted to be secured thereto in the upstanding oriented manner as illustrated in FIG. 6 as long as the same are disposed in the electrostatic field created between the plates 47 and 48. Thus, the fabric layer 11A with the fibers 45A being held in their oriented condition by the electrostatic field is carried through the heating unit 39A to cause the heating unit 39A to sufficiently dry the layer 17A, without curing thereof, as well as to set the polymeric material on the side 12A of the fabric layer 11A to cause the fibers 45 to remain secured in the upstanding arrangement when the same pass out from beneath the plates 47 and 48 and thereby are no longer influenced by the electrostatic field thereof.

25 In this manner, the plates 47 and 48 can extend into the heating unit 39A a sufficient distance to permit the setting up of the polymeric material on the side 12A of the fabric layer 11A to sufficiently hold the fibers 45 in their oriented and upstanding condition.

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Thereafter, the voids 16A between the fibers 45 on the layer 11A are filled by the liquid polymeric material 19A being fed or coated onto the side 12A of the fabric layer 11A by the applicator 42A. The material 19A is subsequently doctored by the doctor member 43A, so that the voids 16A in the gauge-building layer 14A will have been completely filled by the polymeric material 19A to define the side 19'A of the layer means 10A.

As illustrated in FIG. 6, the coating 19A that now fills the voids 16A between the fibers 45 is sufficiently dried, without curing of the layers 17A and 19A, as the layer means 10A passes through the heating unit 44A, so that the layer means 10A can be wound into the supply roll 40A thereof, with or without the interleaving strip 41A, to prevent sticking together of the coils of the layer means 10A in the supply roll 40A.

The completed layer means 10A of this invention can be utilized in the same manner, and for the same purpose, as the layer means 10 previously described, and therefore a further description of the use of the layer means 10A is unnecessary.

Accordingly, it can be seen that this invention provides a polymeric-coated fabric layer means 10 or 10A which comprises a fabric layer 11 or 11A having opposed sides 12, 13, or 12A, 13A, a layer 19 or 19A of polymeric material secured to one of the sides of the fabric layer and having an outer surface 19' or 19'A facing away from the one side of the

fabric layer, and a gauge-building layer 14 or 14A secured to the one side of the fabric layer 11 or 11A before the polymeric layer 19 or 19A is secured thereto; the gauge-building layer 14 or 14A

- 5 has a plurality of voids 16 or 16A therein, with the polymeric layer 19 or 19A filling the voids 16 or 16A of the gauge-building layer 14 or 14A.

While the layer means 10 and 10A has each been illustrated and described as having only one
10 gauge-building layer 14 or 14A disposed thereon, it is to be understood that one or more layers 14 or 14A, or combinations thereof, can be provided in stacked relation, with or without the voids 16 or 16A in any particular layer 14 or 14A being filled
15 with polymeric material. For example, the layers could be stacked to provide a foamed layer 14, and then a flocked layer 14A that is filled with polymeric material 19A; a foamed layer 14, then a flocked layer 14A, and then a foamed layer 14 that is filled with
20 polymeric material 19; a flocked layer 14A and then a foamed layer 14 that is filled with polymeric material 19; etc., whereby each combination will provide a polymeric-coated fabric layer means that has different characteristics.

- 25 Accordingly, it can be seen that this invention not only provides an improved polymeric-coated fabric layer means and method and apparatus for making the same, but also this invention provides an improved product utilizing such a layer means.

While the forms and methods of this invention

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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.

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CLAIMS:

1. A polymeric-coated fabric layer means comprising a fabric layer,
a layer of polymeric material secured to one side of said fabric
5 layer, and a gauge-building layer having been secured to said one side
of said fabric layer before said polymeric material layer is secured
thereto, said gauge-building layer having a plurality of voids
therein, said polymeric layer filling said voids of said gauge-
building layer, and in which said gauge-building layer comprises a
10 plurality of fibers defining said voids therebetween.
2. A method of making a belt construction comprising a polymeric
belt body having a surface and a polymeric-coated fabric layer means
having an outer surface secured to said surface of said belt body,
15 said method comprising the steps of providing a fabric layer, securing
a main layer of polymeric material to one side of said fabric layer,
forming said main layer of polymeric material to have said outer
surface facing away from said one side of said fabric layer, disposing
said outer surface of said layer means against said surface of said
20 belt body to provide an assembly thereof, and, thereafter, bonding
said outer surface of said layer means to said surface of said belt
body by a heat curing or vulcanization operation on said assembly,
characterised by the steps of securing a gauge-building layer of
fibers to said one side of said fabric layer with another layer of
25 polymeric material that is disposed on said one side before said layer
of fibers is disposed thereon, whereby said gauge-building layer of
fibers has a plurality of voids therein; and then filling said voids
of said gauge-building layer of fibers with said polymeric material of
said main layer in a liquid form thereof to form said main layer.
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3. A method of making a belt construction as set forth in Claim 2,
further comprising orienting said fibers relative to said fabric layer
so that the long dimensions of said fibers are generally transverse to
said fabric layer prior to said step of filling said voids.
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4. A method of making a belt construction as set forth in Claim 3,



in which said step of orienting said fibers comprises the step of orienting said fibers with an electrostatic field means.

5. A method of making a belt construction as set forth in Claim 2, in which said polymeric material of said main layer in said liquid form has a relatively low viscosity.

6. A method of making a belt construction as set forth in Claim 5, in which said viscosity is less than approximately 5,000 CPS.

7. A polymeric product having a polymeric-coated fabric layer means secured to a surface thereof, said layer means comprising a fabric layer, and a layer of polymeric material secured to one side of said fabric layer; said product having a gauge-building layer secured to said one side of said fabric layer before said polymeric layer is secured thereto; said gauge-building layer having a plurality of voids therein, said polymeric layer filling said voids of said gauge-building layer.

8. Apparatus when used for making a polymeric-coated fabric layer means as claimed in Claim 1, said apparatus comprising means for securing the gauge-building layer to said one side of said fabric layer before said polymeric layer is secured thereto; the apparatus having means for filling said voids of said gauge-building layer with said polymeric layer; and in which said means for securing said gauge-building layer comprises means for securing a plurality of fibers to said one side of said fabric layer so as to define said voids therebetween.

9. Apparatus as claimed in Claim 8 for making a polymeric-coated fabric layer means as claimed in Claim 1 and substantially as herein described with reference to FIGURES 3 and 4 of the accompanying drawings.

10. A polymeric-coated fabric layer means, suitable for bonding to a belt body, comprising a fabric layer, a layer of polymeric material



secured to one side of said fabric layer, and a gauge-building layer having been secured to said one side of said fabric layer before said polymeric material layer is secured thereto, said gauge-building layer being formed with a plurality of voids therein, said polymeric layer filling said voids of said gauge-building layer, and in which said gauge-building layer comprises a plurality of fibers secured to said one side of said fabric layer and defining said voids therebetween, said gauge-building layer being a non-woven layer.

11. Apparatus when used for carrying out the method as claimed in any one of claims 2 to 6, said apparatus comprising means for securing the gauge-building layer to said one side of said fabric layer before said polymeric layer is secured thereto; the apparatus having means for filling said voids of said gauge-building layer with said polymeric layer; and in which said means for securing said gauge-building layer comprises means for securing a plurality of fibers to said one side of said fabric layer so as to define said voids therebetween.

12. Apparatus when used for making a polymeric-coated fabric layer which comprises a fabric layer, a foamed gauge-building layer, and a layer of polymeric material secured to one side of said fabric layer, said apparatus has means for securing a foamed gauge-building layer means to said one side of said fabric layer before said polymeric layer is secured thereto; and means for filling said voids of said gauge-building layer means with said polymeric layer; the improvement characterized in that said means for securing said gauge-building layer comprises means for securing a plurality of fibers to said one side of said fabric layer so as to define said voids therebetween.
