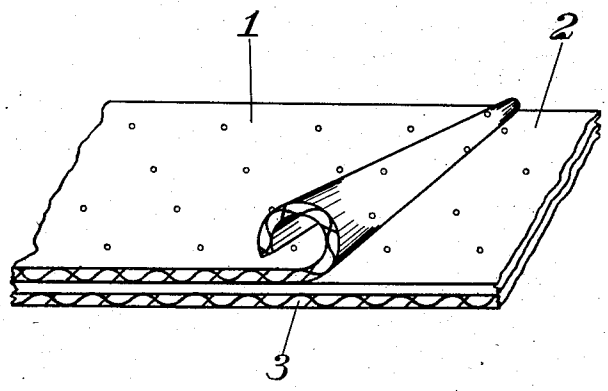
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PERFORATED CORSET MATERIAL

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PERFORATED CORSET MATERIAL

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This invention relates to rubberized fabrics and more particularly to two fabrics joined by means of a layer of rubber used in the manufacture of garments.

Two types of rubberized fabrics for use in fabrication of corsets or so-called foundation garments consisting of two fabrics of cotton, silk, rayon, etc., or combinations thereof combined with a layer of rubber, are well known to the art. One type of such a material is dense and does not allow air to penetrate and therefore does not afford proper ventilation of the skin and evaporation of perspiration. The other type is the so-called ventilated variety which was developed to overcome the objections just mentioned with regard to the dense type, and has been manufactured in several varieties of the following general constructions:

1. Stockinet fabric calendered on one side with a rubber composition, vulcanized and then perforated.

2. Two knitted fabrics combined with a cellular structure rubber layer between, perforated, and vulcanized with the perforating pins in situ.

3. Material as disclosed in Patent 1,981,909 granted to Dunn and McLean, which is a combination of two knitted fabrics with interlayer of a rubber composition, the combined fabrics being perforated and then vulcanized. The perforating operation is carried out in such a manner as to remove cores of the material and also to embed the loose fibers of the fabrics into the rubber compound at the periphery of the perforations.

This material represents a marked advance in the general construction and service life over previous similar materials.

The object of this invention is the production of improved ventilated type of rubberized fabric garment material.

A further object is to produce an improved ventilated type of rubberized corset material affording greater comfort to the wearer and also present a more attractive appearance.

A still further object is to produce an improved ventilated type of corset material which will retain its original excellent appearance during the service life of the garment into which it is fabricated. Further objects will appear hereinafter.

These objects are accomplished by the following invention in which a knitted fabric, preferably a knitted cotton fabric which has been napped and felted, is combined by means of a layer of rubber composition to another knitted fabric, preferably of silk, rayon, or similar material which has been pre-treated to increase its stretching characteristics, vulcanizing the combined material and finally perforating the vulcanized material. It is to be understood that in the specification and claims the term "perforating" is intended to refer to punching, cutting or otherwise producing a hole in the material whereby a core of material is removed.

In the drawing the single figure is a diagrammatic section of the material showing the various parts. The rayon or silk is indicated as 1, the rubber composition as 2 and the napped cotton is shown as 3.

The fabric which is worn next to the body may be of rayon, silk or similar material but preferably consists of a knitted cotton material of the stockinet type of construction which is napped and the resultant nap felted to present a cushiony and attractive surface. The other fabric of the combination or what may be designated as the face fabric may be silk, rayon or cotton. This fabric is preferably what is known in the textile art as Milanese knitted type and is so treated after knitting as to yield a material which will have a greater degree of stretch than is present in the untreated fabric of a particular type chosen.

This pre-treatment or control of stretch is obtained in the so-called dressing operation subsequent to the Milanese knitting operation. In the usual fabrics used for the facing of corset materials of the type under consideration, the fabric is knitted on a 168" wide beam, dressed or pulled down to 90" in width and finally cut to 45" in width in which condition it is used. In the high stretch fabrics used in the present invention the fabric is knitted on a 144" wide beam and dressed down to 45" in which condition it is used. The back and face fabrics are coated with a thin layer of rubber composition on a calender in the usual manner, the back fabric being coated on the unnapped or smooth side and combined in the usual manner. This method is preferred to the method wherein a preformed sheet of uncured rubber is combined by means of pressure, etc., with two sheets of knitted fabric. After the combining or joining operation the material is vulcanized. After vulcanization it is perforated in a perforating machine with holes of about $\frac{1}{32}$" in diameter and generally so arranged and spaced as to present a uniform and attractive appearance.

By way of a more detailed example of the invention but not by way of limitation, the following is given:

A napped and felted pink stockinet fabric

of a weight such that one pound will yield 3.5 yards of material 44" wide is calender coated on the smooth or unnapped side with the following rubber composition to a thickness of approximately 0.020":

Pale crepe	75 lbs.
Red pigment	7 ozs.
Zinc oxide	15 lbs.
Lithopone	3 lbs.
Tuads	3 ozs.
Sulphur	2 lbs. 4 ozs.
Albasan	8 ozs.

A pink knitted high stretch silk as described above of such a weight so that one pound after suitable dressing will yield approximately 8.76 yards of 45" wide material is coated in a similar manner. Both rubber coated fabrics are now passed through a standard combining machine or through squeeze rolls with the rubberized faces together thus producing a layer of rubber composition between the two fabrics. The total thickness of this combined material is about 0.040". The combined material thus prepared is then vulcanized by festooning in a dry heat vulcanizing chamber and heated for 2½ hours at 250° F. After this vulcanization operation the material is perforated in a conventional manner, preferably with holes 3/32" in diameter spaced approximately ½" apart in a row across the width of the material, each row being spaced approximately ¼" from the other. Alternate rows of the holes are staggered in such a fashion that the holes in a particular line are half way between the holes in the line ahead and in the line behind. After perforation, the material is trimmed and is now ready for manufacture into finished garments.

While in the above an exact description of a preferred method of this invention is given, it is obvious that many modifications may be made without departing from the spirit thereof. For example, the fabrics may be of any weight and color. The backing fabric may be prepared in any degree of napping ranging from a light scratch nap to a heavy felted nap. Also the backing may be unnapped and of a pre-treated material, if desired, which possesses inherently more stretch than the material generally used. However, a backing of napped fabric is to be preferred because of the cushioning effect produced by the nap. The rubber composition may be of any type generally used for combined fabrics and the thickness of the coatings may be varied from 0.01 to 0.08" without in any way affecting the utility of the finished material. While the perforating operation is carried out on the vulcanized material in the preferred embodiment of this invention, it is possible to perforate the unvulcanized material with subsequent vulcanization. The perforations may be arranged to form various designs and the size of the holes may range from a so-called pin prick to ¼" in diameter or a combination of different sized holes forming definite patterns may be used.

The rubberized fabrics of the present invention find extensive use for making corsets, girdles, reducing garments, instep braces, brassières, hygienic stockings, ankle braces, etc. Many other uses will suggest themselves where material having properties of the invention are necessary or desirable.

The use of fabrics which have been pre-treated as previously described impart greater stretch than fabrics normally used and give rise to a condition in which the fabric stretches uniformly with the rubber interlayer. The ability of the fabric to stretch uniformly and at the same rate as the rubber interlayer largely eliminates the possibility of undue stress on the bond between the fabric yarns and the rubber layer and thus any tendency for the fabric to break away from the rubber interlayer is greatly reduced. The prevention of the development of so-called "runs" in the fabric between the perforations which so often develop with fabrics having only the normal stretch characteristic is also greatly reduced or practically eliminated. The use of the fabric having greater stretch characteristics precludes the necessity for perforating before vulcanization and then pressing to embed the loose cut ends of the fabric yarns into the rubber interlayer and so permits of a substantial saving in manufacturing cost.

Another advantage of the preferred form of the invention is that the felted nap on the fabric which is worn next to the body promotes a soothing, comfortable feeling free from harshness which may be occasioned by any inherent roughness in an unnapped fabric. The nap of the fabric tends to hold the garment away from the skin thus favoring the increased air circulation which results in a more rapid evaporation of perspiration and a more comfortable skin condition in general.

It is apparent that many widely different embodiments of this invention may be made without departing from the spirit and scope thereof and, therefore, it is not intended to be limited except as indicated in the appended claims.

I claim:

1. Process of producing perforated corset material which comprises knitting a fabric on a wide beam, pulling it down to about one-third this width, coating one side of the fabric with a rubber composition, coating the smooth side of a napped cotton fabric with a rubber composition, combining the two coated fabrics by passing them through rolls, vulcanizing, and perforating the composite material.

2. Process of producing perforated corset material which comprises knitting fabrics on a wide beam, pulling them down to one-third this width, coating one side of one such fabric with a rubber composition, coating one side of another such fabric with a rubber composition, combining the two coated fabrics by passing them through rolls, vulcanizing, and perforating the composite material.

3. Process of producing a perforated elastic garment material which comprises calendering a coating of rubber on a knitted material, coating a smooth high stretch knitted fabric with rubber, joining the rubber coatings to provide the material with facings of said knitted materials and an inner layer of rubber, vulcanizing the rubber, and finally perforating with a plurality of holes.

4. Process of producing a perforated elastic garment material which comprises calendering a coating of rubber on a stockinet knitted material, coating a smooth high stretch Milanese knitted fabric with rubber, joining the rubber coatings to provide the material with facings of said knitted materials and an inner layer of rubber, vulcanizing the rubber, and finally perforating with a plurality of holes.

5. An elastic garment material which comprises on one side an outer layer of napped

knitted fabric with napping of the fabric facing outwardly, an inner layer of vulcanized rubber adhered to said fabric, adhered to the other side of said rubber layer and facing outwardly a knitted fabric having a stretch such as that which can be obtained by pulling down a Milanese knitted fabric more than one-half to about one-third of its knitted width, said material being perforated through all of said layers.

6. An elastic garment material which comprises on one side an outer layer of napped knitted fabric with napping of the fabric facing outwardly, an inner layer of vulcanized rubber adhered to said fabric, adhered to the other side of said rubber layer and facing outwardly a Milanese knitted fabric having a stretch such as that which can be obtained by pulling down a Milanese knitted fabric more than one-half to about one-third of its knitted width, said material being perforated through all of said layers.

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