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POWDER PUFF AND METHOD OF MAKING THE SAME

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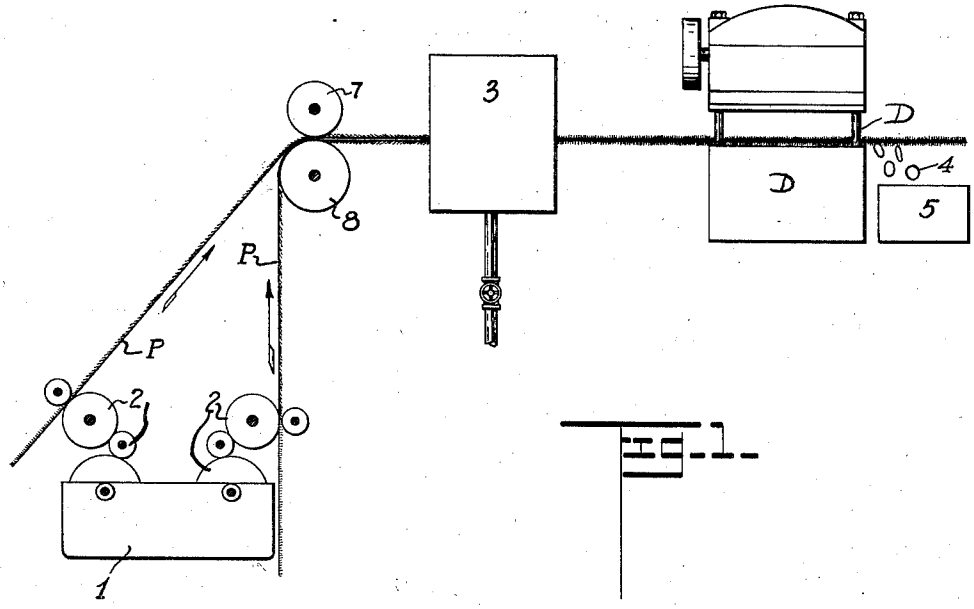


FIG. 1

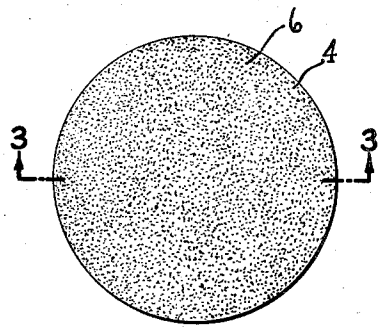


FIG. 2

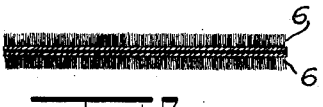


FIG. 3

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POWDER PUFF AND METHOD OF MAKING THE SAME

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4 Claims. (Cl. 132—78.5)

My invention relates to a new and improved powder puff and to a new and improved method of making the same.

One of the objects of my invention is to provide a powder puff of simple construction so that the same can be cheaply manufactured in large quantities.

Another object of my invention is to provide a powder puff which shall be free from stitches at its edge.

Another object of my invention is to provide a powder puff which is made from two pieces of pile fabric, the bases of said pieces of pile fabric being connected to each other without the use of stitches.

Another object of my invention is to provide a puff of this type in which the two layers of pile fabric are connected by means of a suitable adhesive, said adhesive being of the type which will not substantially stiffen the powder puff, will not spot the material, and will not be affected by changes of temperature.

Other objects of my invention will be set forth in the following description and drawing which illustrates a preferred embodiment thereof, it being understood that the above general statement of my invention is intended to generally explain the same and not to limit it in any manner.

Fig. 1 is a diagrammatic elevation illustrating the essential steps in the manufacture of the improved puff.

Fig. 2 is a top view of the completed puff.

Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

Heretofore powder puffs have been made upon a commercial scale by cutting a pile fabric into circular discs, partially sewing the discs while their pile faces were adjacent each other, then turning the discs until their bases were adjacent each other, and then completing the stitching of the edges of said discs. These operations involved a large amount of hand labor, so that the process of manufacture was expensive. In addition, the presence of the stitches at the edge of the powder puff was objectionable, especially when the edge of the puff was used for applying powder adjacent the eyes of the user.

According to my invention, large sheets of pile material have their bases connected to each other by means of a suitable adhesive, and the composite or double sheet which is thus produced, is directly cut by means of dies in order to produce circular powder puffs, or puffs having any other desired shape.

According to the invention, puffs of any irregular outline may be cheaply and accurately formed.

While I have diagrammatically illustrated a machine for producing the improved puffs, said puffs may be produced by hand. For example, the adhesive may be applied by hand to the base of each sheet of pile fabric, and the said sheets of pile fabric may then be caused to contact, with the use of suitable pressure, so that the adhesive connects the bases of said sheets of pile fabric. The adhesive can then be allowed to dry at room temperature, or at an elevated temperature which is about 216° F.

The adhesive preferably consists of latex which is intermixed with a suitable vulcanizer, and with a suitable accelerator or accelerators, so that when the water in the latex is eliminated as the result of the drying operation, the latex is vulcanized either at room temperature, or at the elevated temperature above mentioned.

Since the pressure which is utilized in order to cause the two sheets of pile fabric to adhere to each other breaks down the pile of the fabric which is utilized, I prefer to drive off the water in the latex in a box or chamber which is supplied with hot air so as to produce the above mentioned temperature of 216° F. Likewise, I prefer to stretch the fabric in all directions by means of a suitable tentering machine, while the latex is being dried, in order to bring up the pile and to produce the desirable velvety appearance.

The base of the pile fabric is closely woven and the latex is sufficiently viscous so that it does not appreciably penetrate the base of the pile fabric. While the latex may penetrate said base to a greater or less extent, as desired, it is important to prevent the latex from saturating any substantial part of the pile fibres, as otherwise the appearance and usability of the puff would be seriously damaged.

After the puffs have been cut from the composite sheet of pile fabric, said puffs may be subjected to steam at a temperature of 216° F., and at a pressure of ninety pounds per sq. inch, in order to additionally bring up the pile of the puff. The improved puff has the pile extending substantially to the edge thereof, and the pile fibres of said edge are stiff and perpendicular to the base of the puff, because of the elimination of the turning operation and the other operations previously mentioned, and which were required when the puff was formed by sewing operations.

As shown in Fig. 1, the adhesive may be located in a tank 1, and it may be applied by means of rollers 2 to the base of each sheet of pile fabric P.

Said sheets of pile fabric are then fed between

pressure rollers 7 and 8, which are actuated by any suitable mechanism. These rollers act to press the sheets of pile fabric P against each other, so that the adhesive covers or penetrates the closely woven bases of said sheets of pile fabric P. While this is being done, I prefer to maintain the sheets of pile fabric P under little or no tension, because the pressure of the rollers 1 and 2 might drive the adhesive too deeply into the sheets of pile fabric P, if the material was under substantial tension.

The adhering sheets of material are then led through a hot air chamber 3, which is maintained at a temperature of 216° F. The latex is thoroughly dried in the hot air box 3, so that it forms a very thin and almost imperceptible film of vulcanized rubber between the two sheets of pile fabric P. This film is not visible, and it does not add to the thickness of the sheets of pile fabric. The hot air box 3 may contain a suitable tentering frame so that the two sheets of fabric are stretched laterally or in the direction of the filler threads, while it is being dried. The longitudinal shrinking of the fabric which is produced by the tentering mechanism may be .0317% and the lateral stretch of the fabric which is gained by the tentering mechanism in the hot air box may be 1.7%.

When the fabric is released from the tentering mechanism, the sheets P may assume substantially their original dimensions. That is, the stretch which is produced by the tentering mechanism need not be a permanent stretch, although I do not wish to exclude a permanent stretch of the fabric. Hence, the film of vulcanized rubber is formed under tension, and the composite fabric which is formed is stretchable, especially upon the bias. Likewise, the composite fabric which is thus formed is freely bendable, and it has considerable resilience, so that if it is crushed it springs back into its original shape.

The composite sheet of fabric is now cut into circular pieces 4, by means of any suitable dies D, and the puffs can be collected in a suitable container 5.

While I have illustrated the manufacture of a circular puff, it is clear that puffs of any desired shape could be produced by using suitable dies.

The intermediate connecting layer of thin and stretchable vulcanized rubber does not smear the dies and the fabric can yield when it is subjected to the action of the cutting dies, so that accurately shaped puffs can be produced.

As shown in Fig. 3, the improved puff has pile fibres 6 on both sides thereof.

While I have illustrated one method of manufacture for producing the improved puff, I do not wish to be limited to said specific method of manufacture, and the claims for the article itself are not to be limited to any particular method of manufacture.

While I do not wish to be limited to the use of any particular adhesive, I prefer to use a latex adhesive of the type before mentioned and which has the fluidity of ordinary latex. The use of this adhesive prevents any odor from being imparted to the puff because it is merely necessary to drive off the water which is present in the latex, instead of driving off the solvents which are used for making ordinary rubber cement. Likewise, the use of a latex cement of relatively high fluidity makes it possible to produce the extremely thin intermediate layer of vulcanized rubber, which is unaffected by temperature changes and which does not penetrate through the base of the fabric.

The pile fabric may be woven by means of any suitable loom, or the pile may be produced upon a piece of fabric in any suitable manner.

While I prefer to stretch the sheets of fabric only laterally, while the adhesive is being dried, the fabric may be stretched in all directions.

The adhesive may be applied to the base of only one of the sheets of pile fabric.

While the latex cement is relatively fluid, a concentrated latex may be utilized if desired.

It is advantageous to cut the puffs from the assembled pieces of fabric, instead of cutting the discs from single sheets of fabric. The dies which are utilized necessarily have edges which exert a shearing action. When a single sheet of pile fabric is cut by a pair of dies, the dies tend to cut off some of the pile fibres which are adjacent the edge of the disc. When a pair of sheets of pile fabric are subjected to the action of the cutting dies, the severances of the pile fibres is lessened, so that a superior puff is produced.

I do not wish to be limited to the use of latex which contains vulcanizing material.

The pile of the fabric may be produced by a napping machine, and the pile can be thus produced either before or after the base portions of the sheets of fabric are connected by the use of an adhesive. Likewise, I do not wish to be limited to the use of an adhesive and pressure, in order to connect the sheets of fabric. Of course, the discs of fabric could be first cut out and then united by an adhesive. Likewise, I do not wish to be limited to the use of a woven pile fabric, as a suitable felted fabric could be utilized.

The fabric to be treated may be wound upon suitable bobbins, from which the sheets of fabric are led to the rollers 2, where the adhesive is applied with the use of suitable pressure (which may be very light) in order to properly apply the latex adhesive. The fabric is preferably only under slight tension in advance of the rollers 7 and 8 (which may be of the same diameter), said tension being preferably just sufficient to prevent the sheets of fabric from wrinkling. Likewise the fabric is preferably under slight tension when it is cut by the dies D. The front end of the composite sheet of fabric may be wound upon a suitable take-up bobbin (not shown in the drawing) because the dies D do not completely sever the composite fabric.

I can use any suitable doubling machine for connecting the two sheets of fabric to each other. I have shown a preferred embodiment of my invention, but numerous changes and omissions could be made without departing from its spirit.

I claim:

1. In the art of making a powder puff which has a piece of pile fabric which is connected to a second piece of fabric, said piece of pile fabric having a base and having pile fibres, those steps which consist in connecting the base of said piece of pile fabric to the second piece of material by means of latex adhesive, while confining the latex adhesive which penetrates said piece of pile fabric to the base portion of said piece of pile fabric, and causing the latex adhesive to set.

2. In the art of making a powder puff which has a piece of pile fabric which is connected to a second piece of fabric, said piece of pile fabric having a base and having pile fibres, those steps which consist in connecting the base of said piece of pile fabric to the second piece of material by

means of latex adhesive, while confining the latex adhesive which penetrates said piece of pile fabric to the base portion of said piece of pile fabric, and causing the latex adhesive to set, while said piece of pile fabric and while said second piece of material are under tension.

3. In the art of making a powder puff which has a piece of pile fabric which is connected to a second piece of fabric, said piece of pile fabric having a base and having pile fibres, those steps which consist in connecting the base of said piece of pile fabric to the second piece of material by means of latex adhesive, while confining the latex adhesive which penetrates said piece of pile fabric to the base portion of said piece of pile fabric, and causing the latex adhesive to set, while said piece of pile fabric and while said second piece of material are under tension, said tension being exerted in the direction of the filler threads of the pile fabric.

4. A method of making a powder puff from two pieces of pile fabric, each of said pieces having a base and pile fibres, which consists in pressing together the bases of said pieces of pile fabric and an intermediate layer of unvulcanized latex adhesive, said pressure being sufficiently light to confine said latex adhesive to said base portions, and then setting said latex adhesive while still confining it to said base portions.

MAURICE LEVY.