

March 31, 1936.

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2,035,766

ARTICLES OF APPAREL AND METHOD OF MAKING THE SAME

Filed March 29, 1935

Fig. 1.

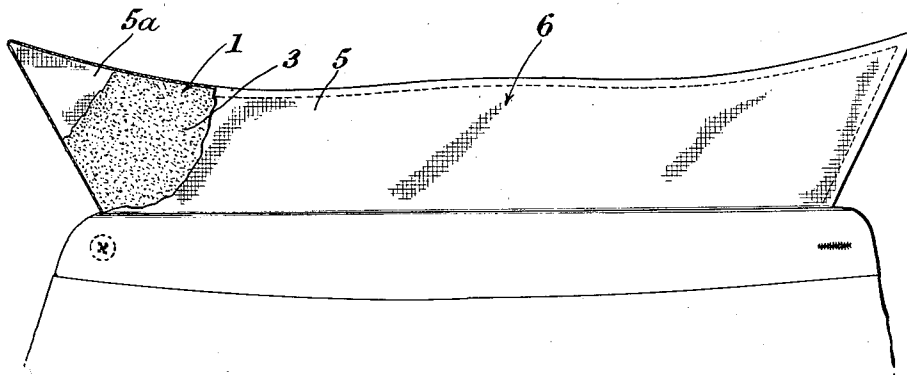


Fig. 2.

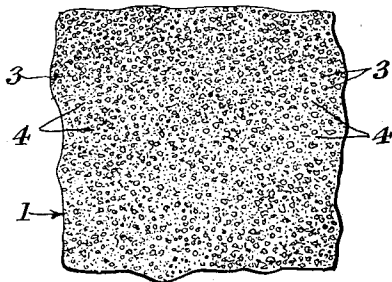


Fig. 3.

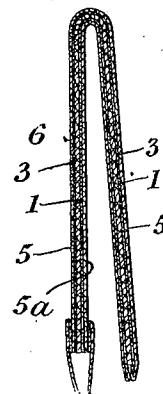
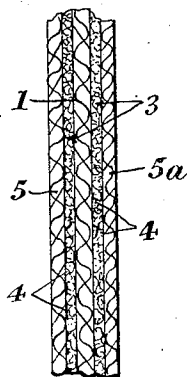


Fig. 4.



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2,035,766

ARTICLES OF APPAREL AND METHOD
OF MAKING THE SAME

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Application March 29, 1935, Serial No. 13,609

8 Claims. (Cl. 154-2)

The object of my invention has been to provide articles of apparel and a method of making the same, such as collars, cuffs, shirt bosoms, hat linings, brassières, etc., which, without the use of starch, shall possess the qualities of having permanent stiffness, where desired, a degree of flexibility which will enable them to adapt themselves to the contour of the wearer, of being permeable to perspiration, water and air, and of retaining such qualities during and after laundering, or washing and ironing of the articles; and to such ends my invention consists in the articles of apparel and method of making the same hereinafter described.

The aforesaid qualities make it practicable for a person to properly launder a shirt, or other article, made according to my method, without the use of starch, merely by ironing the collars, cuffs, or bosom, since the formation of wrinkles therein or thereon is prevented. This eliminates the necessity of sending such articles to a laundry and makes it possible to get perfect results in the home.

In the accompanying drawing:

Fig. 1 is a plan view of a collar opened out flat, and which embodies one form of my invention;

Fig. 2 is a plan view of a piece of lining, shown in Fig. 1, with the particles of adhesive substance secured thereto;

Fig. 3 is a vertical sectional view of the collar of Fig. 1, when folded in form for wear.

Fig. 4 is an enlarged cross-sectional view of one of the laminated portions of the collar, as shown in Fig. 3.

My invention is capable of embodiment in various forms, and the process of making my said articles of apparel is susceptible of variation without departure from the principle of my invention.

The embodiment of my invention hereinafter described is, therefore, to be taken only as typical of many possible embodiments.

In the making of a collar according to my invention, a fabric may be used for the lining such as is commonly used to-day in collars and shirt bosoms, as a base cloth; that is, an ordinary sheeting, which has been bleached, of course, because unless it is bleached, it would be likely to show discoloration through the outer ply of the article, especially when the shirt or collar is made of white material.

I then take the bleached fabric and treat it with a wash in acetone, solox, or other solvent for a water-resistant adhesive stiffener, such as

cellulose acetate. Immediately after the said fabric comes out of the tank soaked with acetone, I flock a powder, such as cellulose acetate, of—for example—150-mesh to the inch upon one side of the cloth with a flocking machine. The cloth is then turned over, so as to expose its reverse side to another flocking of the particles of powder. Then the said fabric travels through a hot-box, which quickly evaporates and dries off the solvent. It then goes between a pair of rollers which are warm, but not excessively hot, and these rollers compress the fabric, with the cellulose acetate flock thereon. The pressure and temperature of the rollers, the speed of the fabric, and the amount of powder thereon, are so adjusted that while the particles of cellulose acetate, or other similar material, are caused to adhere to the lining, the conditions are so regulated that the particles will not be compressed into an impervious solid sheet, but, on the contrary, will leave interstices between the particles, so that the completed article will be permeable to perspiration, water and air.

After the lining is completed, as above described, it is cut to shape and sewn into a collar, for instance, in the usual manner, after which the entire collar is given a soaking bath in "Solox", which has been found to be most effective if mixed with 20% of water. Acetone, or any other known solvent of cellulose acetate or other cellulose derivative, can be used. Solox is alcohol with a small amount of aviation gasoline. It makes the cellulose acetate powder adhesive. After the application of the solvent, heat is applied in a press, under sufficient pressure to fuse the three plies together, but with avoidance of a pressure great enough to completely close the interstices between the particles of water-resistant adhesive stiffener. The collar may then be sewn in the ordinary way if desired.

My invention can be used, if wished, in producing collars, for instance, having only one ply besides the lining.

A variation of my process from that above described, may be as follows:

Instead of soaking the lining, or base material, in acetone, or other solvent, the flock of powdered adhesive may be made to adhere to the stiffening or lining by merely soaking the base cloth in a bath of textile size, after which the flock of powdered particles may be sifted on the cloth, and the process, as before described, carried out in exactly the same way.

Still another variation of my process would be flocking thermoplastic adhesive particles onto

one side of the fabric which is then made to adhere to the base fabric by compressing the particles between heated rollers, being careful not to use sufficient pressure completely to close the interstices. Should it be wished to cause both sides to adhere to another fabric, this treatment may be applied to both sides of the lining.

My invention has, among other advantages, the following ones:

- 10 The ability to use readily various fabrics which have different degrees of shrinkage, the advantage being that the lining and the cloth of which the shirt, or other article, is made will shrink alike, rather than pull apart, as would be caused, ordinarily, by differences in shrinkage.

Because my adhesive is applied in the form of particles, articles made according to my invention can be bent in any and every direction without breaking the bond between the aforesaid particles. This is not equally true of fabrics stiffened with threads of cellulose acetate woven into the fabric of the stiffening, and which therefore extend only in the direction of the warp or the weft, nor where the coating is one solid mass. The interstices which are preserved in my layer of particles give this quality of pliability, and such quality is secured without impairing the permeability of the fabric.

My fabric does not require any weaving of the stiffening material into the base, or stiffening ply, contrary to previously patented apparel where the stiffening material is in the form of thread or fibre elements that are woven into the web of the stiffening element. This advantage greatly reduces the cost of my fabric and the process of making it, as compared with previous patents.

My invention is not to be limited to the use of cellulose acetate, as any of the other adhesives, such as thermoplastic cellulose derivative, may be used in the place thereof.

Instead of using two or more plies of fabric, an outer ply and a stiffener, in the practice of my invention, it is possible to use two sides of a single fabric, one side for the face of the collar, and the other side to have secured thereto my layer of particles of stiffening adhesive, which would be the practical equivalent of two separate plies, one side serving as the face of the article and the other side serving as the stiffening. This would be accomplished by napping up the side of such a single ply which is to serve as the stiffener, in order to receive such a layer of particles of my adhesive, described above, which would then quite efficiently perform such stiffening function.

I claim:

1. The process of forming articles of apparel, such as, collars, cuffs, shirt bosoms, etc., which comprises wetting a base fabric with a solvent for an adhesive, applying the adhesive in granular form to the wetted fabric, so that the grains of adhesive will adhere thereto, said grains being applied in such surface density that separate spots of adhesions will result in the finished fabric being porous, affixing the base fabric to a facing of the finished article of apparel, and pressing the assembly together in a permanently stiff but porous condition, the pressure being regulated to this end.

2. The process of forming articles of apparel, such as collars, cuffs, shirt bosoms, etc., which comprises wetting a base fabric with a solvent

for an adhesive, applying the adhesive in granular form to the wetted fabric, so that the grains of adhesive will adhere thereto, said grains being applied in such surface density that separate spots of adhesion will result in the finished fabric being porous, affixing the base fabric to a facing of the finished article of apparel, and pressing the assembly together in a permanently stiff but porous condition, the pressure and a softener being regulated to this end.

3. The process of forming articles of apparel, such as collars, cuffs, shirt bosoms, etc., which comprises so applying to a base fabric a solvent and an adhesive in granular form, that the grains of adhesive will adhere thereto, said grains being applied in such surface density that separate spots of adhesion will result in the finished fabric being porous, affixing the base fabric to a facing of the finished article of apparel, and pressing the assembly together in a permanently stiff but porous condition, the pressure being regulated to this end.

4. The process of forming articles of apparel, such as collars, cuffs, shirt bosoms, etc., which comprises so applying to a base fabric a solvent and an adhesive in granular form, that the grains of adhesive will adhere thereto, said grains being applied in such surface density that separate spots of adhesion will result in the finished fabric being porous, affixing the base fabric to a facing of the finished article of apparel, and pressing the assembly together in a permanently stiff but porous condition, the pressure and softener being regulated to this end.

5. The process of forming articles of apparel, such as collars, cuffs, shirt bosoms, etc., which comprises applying to a base fabric a thermoplastic adhesive in granular form, causing said thermo-plastic to adhere thereto, said grains being applied in such surface density that separate spots of adhesion will result in the finished fabric being porous, affixing the base fabric to a facing of the finished article of apparel and pressing the assembly together in a stiff but porous condition, the pressure being regulated to this end.

6. A lining or stiffening fabric for flexible collars, cuffs, shirt bosoms, etc., having a dispersion of particles of a cellulose derivative adhered thereto, said particles being separated by interstices of sufficient magnitude to insure on lamination of the lining with a facing fabric that the particles will be at spaced points of adherence in the laminated fabric, giving a porous fabric but of sufficient stiffness.

7. A lining or stiffening fabric for flexible collars, cuffs, shirt bosoms, etc., having a dispersion of particles of adhesive material adhered thereto, said particles being separated by interstices of sufficient magnitude to insure on lamination of the lining with a facing fabric that the particles will be at spaced points of adherence in the laminated fabric, giving a porous fabric but of sufficient stiffness.

8. An article of apparel having a stiffening lining or fabric which has a dispersion of particles of adhesive material adhered thereto, said particles being separated by interstices of sufficient magnitude to cause porosity, and a facing fabric adhered to said particles at spaced points of adherence, giving a porous article but of sufficient stiffness.

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