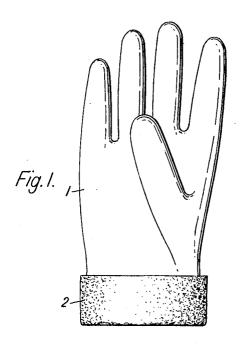
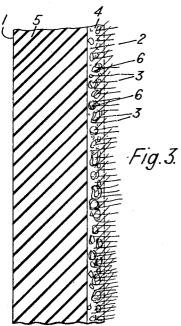
RUBBER GLOVES AND THE LIKE Filed Dec. 12, 1956







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2,916,036

RUBBER GLOVES AND THE LIKE

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Application December 12, 1956, Serial No. 627,901 Claims priority, application Great Britain August 9, 1956 10 4 Claims. (Cl. 128—260)

The invention relates to gloves and other articles ex- 15 hibiting a surface layer of rubber-like material which, when the article is used, will be next to the skin. The rubber-like material may be rubber itself, synthetic rubber or an elastomeric material such as polymerised vinylchloride. The invention is also concerned with such 20 articles in which the rubber-like surface layer carries an adherent layer of flock comprising short thin fibres, of natural material such as cotton or synthetic material such as artificial silk, giving a suede-like finish to the surface. Such articles are commonly used for household, industrial and other purposes. The proximity of the rubber-like surface material to the skin, even when there is an intermediate layer of flock, may be unpleasant to the user and may actually be a source of skin irritation. The object of the present invention is to reduce this disadvantage.

In the improved article according to the invention there is provided in the surface layer a uniform distribution of an unguent material, that is a material which when brought into contact with the skin has a soothing, salving or softening effect thereon. The unguent material is pres- 35 ent and held within the layer in the form of globules and, in use, tends to escape from its free surface to be transferred to the skin of the user. This action takes place when the surface is warmed, as for instance by the warmth of the hand in a glove. Where there is a layer of flock 4 adherent to the unguent-containing layer, which also serves as an adhesive for the flock, the ends of the staples of the flock extend into the adhesive layer and some of them are in contact with the globules of unguent material. The effect of warmth is to cause the unguent 4 material to escape down the staples to the skin of the user.

Unguent materials having desirable effects on the skin are found amongst vegetable and animal oils, the preferred one being lanolin.

Where the surface layer is applied from an aqueous dispersion, the unguent material may be previously incorporated in the dispersion as an emulsion with water and a protective colloid. Where the surface layer is formed from a liquid dispersion in a plasticiser for the basic rubber-like material of the layer, the unguent material may be incorporated in the liquid as a dispersion in a material which is compatible with the liquid dispersion. If the surface layer is formed from a liquid comprising the basic rubber-like material let down in a solvent, the unguent material will usually be added directly to the same solvent.

Where a layer of flock is to be applied, the material of the surface layer may contain an added adhesive material, but this is not always necessary, particularly when the surface layer is formed from a dispersion in a plasticiser or as a liquid with a solvent base.

The invention will further be described with reference to the use of the preferred unguent material, lanolin, in 70 the inner surface layer of a glove of rubber-like material having an adherent layer of flock on that surface layer,

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but it will be apparent that the flock may be omitted without departing from the invention.

The glove is made in known manner by dipping a former into a liquid compound of the rubber-like material, removing it from the liquid and allowing the layer or layers thus formed to set, as for instance by means of a co-agulant or heat-sensitising agent, by gelling or drying, according to the nature of the liquid compound. A film of the lanolin-containing liquid is then applied by a similar dipping process and is converted to a tacky condi-The flock is then applied, by spraying or electrostatic deposition, in sufficient quantity to enable the staples to penetrate the film and to come into contact with the lanolin globules contained within it. Surplus flock is then removed by an air blast. The lanolin-containing film is then finally treated to reduce it to a dry condition. The globules of lanolin are not adversely affected by the drying process and do not migrate into the underlying material to which it has been applied. The glove is then removed from the former and reversed so that the flock covered surface is on the inside.

Where the glove is formed from an aqueous dispersion of vulcanised or unvulcanised rubber or synthetic rubber, the lanolin-containing layer is also obtained from a similar dispersion to which the lanolin has been added as an emulsion with water and a protective colloid such as, for instance, casein, glue or albumen. The emulsion also contains a dispersing agent for the lanolin, for instance a polythene oxide condensation product. To ensure effective adherence of the subsequently applied flock, the final film-forming liquid also contains an appropriate adhesive constituent, for instance a formaldehyde resin. The adhesive may be omitted where no flock is to be used.

The following is an example of a suitable aqueous dispersion for use in forming on a rubber glove a lanolin containing layer to which an adherent coating of flock is to be applied.

Example 1

10	Rubber	Parts by weight 100 in latex.
	Lanolin	5 dispersed in water
15	A CARLON	containing 10% case- in and 1% polyethyl- ene condensation
	Resorcinol	product.
	Caustic soda	0.25.
	Formaldehyde	_ 1 as 40% aqueous solu-
50	Potassium hydroxide	tion. - 0.12 as 20% aqueous solution.

Where the glove is made of a synthetic rubber, the same synthetic rubber may be used instead of the rubber 55 in the example.

Where the glove is made from a latex prepared from an elastomer emulsion, for instance of polyvinylchloride, the process may be similar to that described for an aqueous dispersion of rubber or synthetic rubber.

Where the glove is made from rubber or synthetic rubber in a solvent, a lanolin containing layer may be obtained by applying a similar liquid to which the lanolin has been added. No other adhesive is required in this case and the flock is applied in the manner already described.

When the glove is made by dipping a former into a dispersion of polyvinylchloride in a plasticiser, the former is heated so that, after dipping, the polyvinylchloride will gell on the former. The final adhesive layer is made from a similar dispersion of polyvinylchloride in which the lanolin has been incorporated as a dispersion in a suitable plasticiser, for instance castor oil. The

coated former is dipped into this lanolin containing dispersion in the cold and a thin layer of it is deposited on the surface of the previously deposited and gelled mate-The flock can then be applied in the manner already described. The former is then heated to complete the gelling of the polyvinyl chloride. In this case no additional adhesive material need be incorporated in the material of the final layer.

The following is an example of suitable liquid for the final layer in this case.

Exar	nple 2
	Parts by weight
Polyvinylchloride	50
Dibutyl phthalate	25
Dibutyl adipate	15
Lanolin	5 in 5 pts by weight

Where the glove is made from polymeric materials a dispersion of such material in a plasticiser, the process may be similar to that described in connection with polyvinyl chloride.

It is preferred to use the lanolin in the anhydrous form, but this is not essential.

In all cases where a layer of flock is applied, the conditions of the flocking process are governed by the temperature, viscosity and the method of flocking, the object being to produce a flock which will be adherent to the underlying surface and will not be removed in the ordinary use of the article. The condition of the underlying layer when the flock is applied must be such that the ends of the staples will enter it and be retained until the surface of the material is completely dried or otherwise set. The lanolised layer will usually contain, as its basic constituent, the same material as that of which the article itself is made, but this is not essential. The necessary requirement is that the constituents of the article itself and of the lanolised layer shall not be such as to prevent or reduce the close adherence of the lanolised layer or to have any other deleterious effect upon each other. Nor is it essential that the article and the lanolised layer be formed by similar processes. For instance, the article may be made by a moulding operation and the lanolised layer applied by dipping. Nor is it essential that the article be formed entirely of a rubberlike material. For instance, the surface to which the lanolised layer is applied may be that of a rubber-like material on or containing a reinforcing layer of fabric.

A glove embodying the invention is described herein- 50 after by way of example and with reference to the accompanying drawings, wherein:

Figure 1 is a general view of the palm of the glove with the cuff turned back to reveal the inner surface;

Figure 2 is a view upon an enlarged scale of a small 55 portion of Figure 1; and

Figure 3 is a diagrammatic sectional view through the wall of the glove.

The glove is made of rubber or any other material by dipping a former in a suitable liquid. The outer surface 1 of the glove is inside when the article is on the former, the glove being reversed in the process of stripping, the inner surface of the glove, that is the external surface while the glove is on the former, being covered with a layer of flock 2. The flock layer 2, as indicated in Figure 2 and diagrammatically in Figure 3, consists of short thin fibres 3 the ends of which extend into an adhesive layer 4 covering the inner surface of the main wall 5 of the glove. The adhesive layer 4, which may be formed by any of the previously mentioned methods, contains globules 6 of lanolin which are held within the The ends of some or all of the fibres 3 are in contact with lanolin globules, as indicated in Figure 3, so that due to the warmth of the hand, some of the lanolin can escape down the fibres to the skin of the user.

What I claim as my invention is: 1. An article of personal wear comprising a body of other than polyvinyl chloride, by dipping a former in 20 unguent-free rubber-like material, a surface layer of rubber-like material as a covering on said unguent-free rubber-like material and globules of an unguent material, distributed within said rubber-like material, a layer of fibres adherent to said surface layer and which, when the article is worn, will be next to the skin of the user, and some at least of said fibres extending into said surface layer and into contact with some at least of the glo-

> bules of said unguent material to provide paths for the movement of unguent material out of said surface layer. 2. An article of personal wear as claimed in claim 1, in which the unguent material is lanolin.

3. A glove having interiorly a surface layer of rubberlike material with globules of lanolin distributed within said rubber-like material, said surface layer being a cover-35 ing layer on a body of lanolin-free material, a layer of fibres adherent to the otherwise free surface of said surface layer, and some at least of said fibres extending into said surface layer and into contact with some at least of said globules of lanolin.

4. A glove having interiorly a surface layer of rubberlike material, said layer having been applied from a liquid containing globules of lanolin and said layer containing lanolin distributed therein, a layer of fibres adherent to said surface layer and some at least of said fibres extending into contact with some at least of said globules of lanolin.

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