June 1, 1948. R. W. FORNWALT 2,442,405

SYNTHETIC PLASTIC PAD

Filed July 3, 1946

FIG. 1.

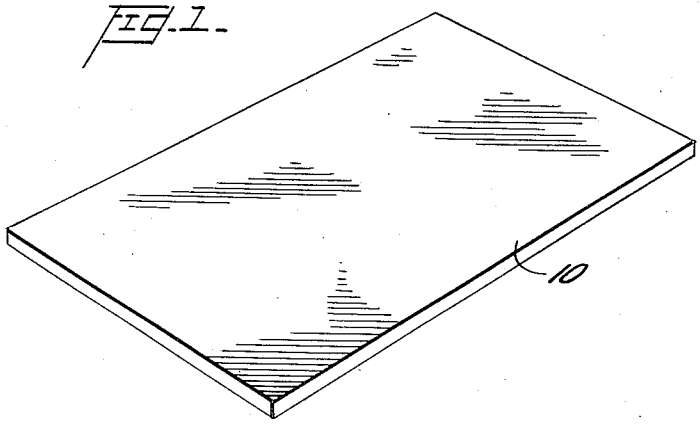


FIG. 2.

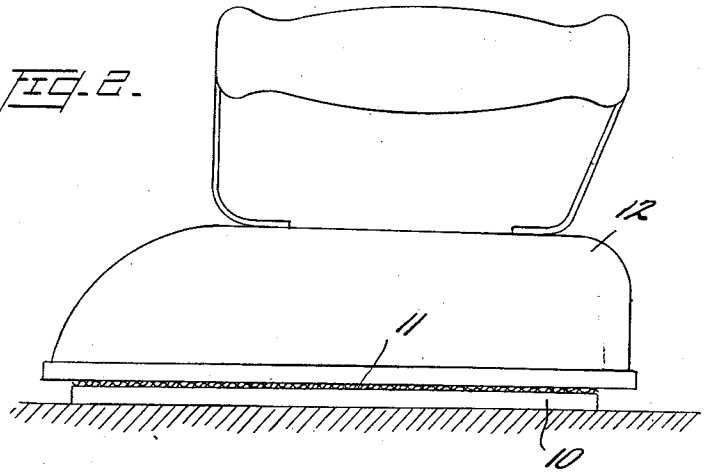
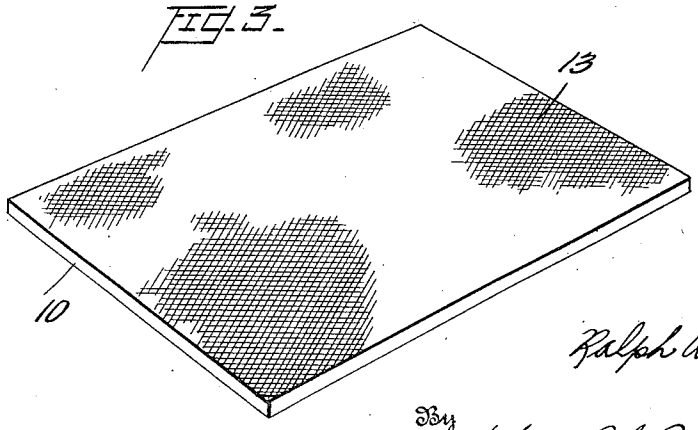


FIG. 3.



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SYNTHETIC PLASTIC PAD

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2 Claims. (Cl. 66—1)

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This invention relates to an article of manufacture comprising a synthetic plastic material having a special surface formed thereon, and a method of surfacing and re-surfacing synthetic plastic materials. More particularly, the invention relates to a pad of thermoplastic material consisting of a polymerized synthetic resin, and method of imparting a special surface to such material.

It is a special object of the invention to provide a "creasing pad" of thermoplastic polymerized synthetic resin, which pad has a rather special application in manufacture of nylon stockings, and to provide a novel and effective method of imparting to such pad a surface which makes it especially adaptable to the stated purpose.

Other and further objects, features and advantages will be apparent from the description which follows, read in connection with the accompanying drawings in which

Figure 1 is a perspective view of a slab or pad of thermoplastic material having a glossy surface as received from the manufacturer;

Figure 2 illustrates the method of imparting the hereinafter described special surface to the pad of Figure 1; and

Figure 3 is a perspective view of the finished article of manufacture of the present invention.

In order to facilitate an understanding of the invention, reference is made to the embodiment thereof shown in the accompanying drawings, and detailed descriptive language is employed. It will nevertheless be understood that no limitation of the invention is thereby intended and that various changes and alterations are contemplated such as would ordinarily occur to one skilled in the art to which the invention relates.

In the manufacture of stockings, the leg portion, including the sides of the heel portion, are knitted on a "legging" machine, after which the foot is knitted on in a footing machine. Before the stocking is sent to the footing machine it is "topped," which involves creasing the leg portion adjacent its unfinished end or, in other words, opening a course of loops in order that they may be fitted over a row of pins for purposes not material to the present invention. This creasing is performed manually by an operator who holds the unfinished end of the stocking leg in contact with a flexible, yielding pad of material and operates upon it with a pointed instrument called a creaser.

In the case of nylon stockings it has been found that the most suitable material for the pad consists of a thermoplastic polymerized synthetic resin such as vinyl chloride, vinyl butyral, or polyethylene. This material, when received from the manufacturer, has a glossy surface which nevertheless is somewhat "tacky" and provides good friction characteristics for preventing the stocking from slipping on the pad while it is being creased. However, after a few weeks of use the surface of such material becomes scratched and roughened through wear and, since the scratches are parallel, the coefficient of friction of the material in the direction of the scratches is reduced, leading to slippage of the stocking leg on the pad which causes damage and loss. Accordingly, it has been found that after about three weeks of use the pads must be discarded even though very little of the material has been worn away. Since these pads are used in considerable quantities, the necessity of discarding them after such a short period of use occasions considerable economic loss.

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It has been determined that by applying to the creasing pads made of the above-named materials, a special surface as hereinafter described, the life of the pads may be doubled. Moreover, by the method of the present invention, when the pads become unusable they may be re-surfaced an indefinite number of times, thus vastly prolonging their period of usefulness and effecting a considerable saving to hosiery manufacturers.

According to the method of the present invention, a creasing pad 10, for example a pad of thermoplastic polymerized vinyl chloride, having a flexible, yielding consistency, is covered with a layer 11 of closely woven textile material such as broadcloth, percale, or the like, and is pressed with a heated flatiron 12 for a few seconds until the surface of the thermoplastic material has softened and has received the impression of the adjacent surface of the textile material. A temperature of from 350° F. to 450° F. is suitable for this purpose, depending upon the length of the treatment and the degree of pressure applied. Preferably, only light pressure is applied and the material is heated to a temperature of approximately 400° F.

The heat and pressure are then removed, and the cloth layer is peeled away from the thermoplastic material leaving a surface 13 which is a replica of the surface of the textile material. This uniform, slightly roughened surface has been found to possess admirable friction characteristics for the stated purpose, and moreover, may be used for approximately twice the length of time as a pad of the original glossy material before it becomes unsuitable for use.

It is preferred to treat the original, glossy material before putting it into use as a creasing pad, but in either case the material may be resurfaced by the described method an indefinite number of times, and thus may be used for a prolonged period before finally discarded.

The method of the present invention may be applied to any thermoplastic material which possesses suitable characteristics for the stated use, namely, suitable strength, flexibility, toughness and yielding properties. The degree of heat and pressure applied in carrying out the above described method may vary somewhat depending upon the material chosen but, with the materials heretofore employed, such variation will not exceed the range stated above.

Moreover, the described method may be employed for surfacing or re-surfacing thermoplastic materials for any desired purpose, the invention not being limited to the production of creasing pads for hosiery manufacture.

Having thus described the invention, what is new and desired to be obtained by Letters Patent is:

1. As an article of manufacture, a stocking creasing pad comprising a relatively wide and thin pad of yielding, resilient thermoplastic resin having a roughened surface which is substantially a replica of the surface of a closely woven textile fabric.

2. As an article of manufacture, a stocking creasing pad comprising a relatively wide and thin pad of cured vinyl chloride resin having a roughened surface which is substantially a replica of the surface of a closely woven textile fabric.

RALPH W. FORNWALT.

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