

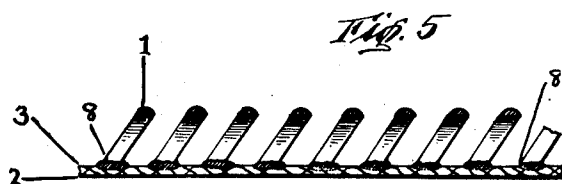
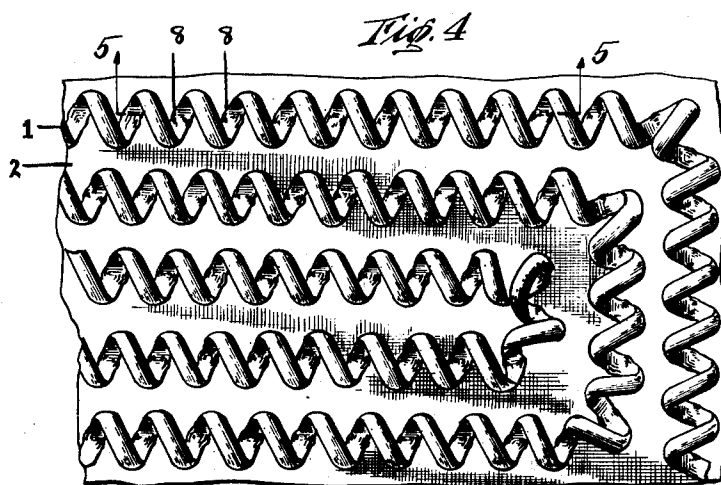
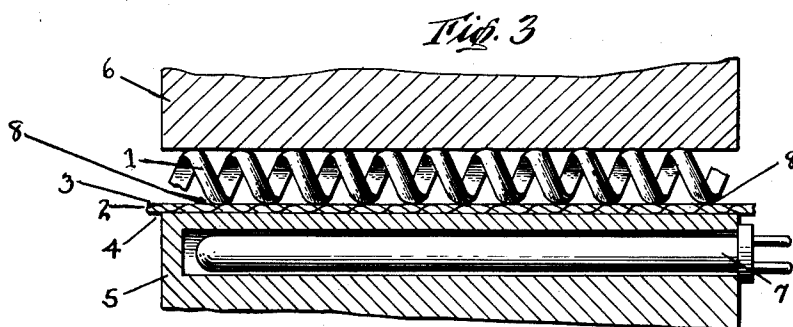
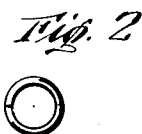
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L. KAPHAN

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DECORATIVE FABRIC AND METHOD OF MAKING SAME

Filed March 1, 1945



INVENTOR.

Ludwig Kaphan

BY

Watson, Bristol, Johnson & Leavenworth

ATTORNEYS

UNITED STATES PATENT OFFICE

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DECORATIVE FABRIC AND METHOD OF
MAKING SAME

Ludwig Kaphan, Brooklyn, N. Y.

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5 Claims. (Cl. 41—34)

This invention relates to the art of uniting plastics to flexible backing members, and has for an object the production of improved composite articles, more particularly ornamental fabrics. A further object of the invention is the provision of a flexible ornamental fabric composed of two or more elements having before assembly different degrees of tension such as, for example, a backing to which is firmly attached a flexed elastic preformed plastic unit. Another object of the invention is the provision of a method by which units of plastic deformed or tensed by bending or stretching into any desired decorative arrangement, can be permanently united to a fabric backing without causing such backing to draw or pucker in normal use. Another object of the invention is to provide a method by which preformed plastic units such as spirals having elasticity due to their composition or physical shape and under tension can be simultaneously bonded to a backing of fabric and caused to change their previous set or tension and assume a new set substantially free from tension so that the resulting fabric remains substantially free from puckering and sufficiently flexible for use in handbags and the like.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the several steps and the relation of one or more of such steps with respect to each of the others and the article possessing the features, properties and relation of elements which are exemplified in the following detailed disclosure and the scope of which invention will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 shows a view in side elevation of a typical portion of a spiral plastic unit prior to being deformed for application to a fabric in accordance with the present invention;

Fig. 2 shows an end view of the plastic unit shown in Fig. 1;

Fig. 3 shows diagrammatically a cross section of a fabric backing member and a plastic unit such as shown in Figs. 1 and 2 deformed and interposed between diagrammatically shown heating and pressing members suitable for carrying out the method of the present invention;

Fig. 4 shows a top plan view of an embodiment of the ornamental fabric after the application of

plastic units to the fabric in accordance with the present invention; and

Fig. 5 shows a section of the completed fabric shown in Fig. 4.

The usual method heretofore of ornamenting fabrics with preformed plastic units has been either to apply the units to the fabric by sewing or the like or to paste the units to the surface of the fabric by an adhesive or cement. These methods sometimes fail to hold the units attached and involve more labor than the present method, but are otherwise satisfactory where the preformed plastic units are rigid or normally have the same tension or set as the fabric or other backing. Where, however, the plastic element is a spring-like spiral or other unit having an elasticity or tension different from that of the backing member to which it is to be attached, these prior methods of attachment are unsatisfactory since the plastic units cannot be distorted from their normal set or given a tension in order to form an attractive design for attachment by these means to the fabric without creating such a strain on the fabric as would produce undesirable and unattractive puckers in the finished article or might cause the fabric to come apart.

The solution for these problems provided by the present invention involves selecting one or more units of preformed cellulose acetate or other plastic, particularly an elastic plastic unit, meaning by that term a plastic which has elasticity due either to its composition or physical structure and which may be softened and will harden and set in a new form or position after such softening.

The term "fabric backing" as used herein includes cotton, linen, muslin or other textiles, leather or any other material which is flexible and sufficiently permeable to admit softened plastics.

In practicing the present invention, the plastic units are first stretched, bent or otherwise distorted into the desired configuration, preferably while lying upon the face of a backing fabric and without regard for whether the resulting tension or set of such units then differs from that of the backing member. While the units are thus arranged and under tension, they are held in position and pressed against the face of the backing fabric and subjected to heat until the units are slightly softened but not generally changed in form; by this step any tension in the units is relieved and upon cooling the units remain set in the new position. This same heating step serves also to soften the portions of the units which are in contact with the fabric until part

of the plastic enters the fibers or interstices of the fabric, thus bonding the units to the fabric upon the cooling of the plastic. It is preferred that the heat be applied to the back of the fabric in order that the portions of the plastic which are nearest the fabric may be softened most for the purpose of bonding the two together, while the remainder of the plastic units remains substantially unchanged in form.

It is within the scope of the invention to use volatile solvents for the purpose of softening the plastic for attachment to the fabric, thus replacing or reducing the use of heat for the purpose. The best results, however, have been obtained where the tension is relieved and the parts bonded together by a single application of heat without the necessity of using any solvent or adhesive whatever.

Referring to the drawing in which like numerals refer to like parts throughout, Fig. 1 shows the side and Fig. 2 the end of a plastic unit suitable for use in the present invention. It consists of a spirally wound coil of plastic, such as cellulose acetate, and has elasticity chiefly by reason of its physical structure such that it may be stretched lengthwise into the position shown by 1 in Fig. 3. 2 is a flexible fabric having a face 3 and a reverse side 4.

Plastic units 1 are first distorted by stretching and bending into the desired ornamental shape such, for example, as shown in Fig. 4, and are arranged upon the face 3 of the fabric 2 where they are held in the desired shape and position by pressure between a heating plate 5 located beneath side 4 of the fabric and a pressing plate 6 located above the plastic units 1. The heating plate may derive its heat in any desired and well known manner as, for example, by a unit shown diagrammatically at 7. During heating, the plates 5 and 6 exert sufficient pressure upon the plastic units 1 to maintain them in the desired arrangement. No greater pressure is necessary unless it is desired to flatten the plastic units, since the objects of the present invention are accomplished chiefly through the softening of the plastic.

The units 1 are then subjected to heat from the heating plate 5 through the fabric 2 for a brief period until the plastic units 1 have lost their former set or tension and until the plastic adjacent some or all of the points of contact 8, 8 between the plastic units 1 and the face 3 of the fabric have softened sufficiently for the plastic to penetrate into or adhere to the fabric 2. Heating then ceases and the plastic rapidly cools and hardens with the plastic bonded to the fabric and the plastic units 1 in the desired configuration and free from tension.

The resulting ornamental fabric as shown in Figs. 4 and 5 has the plastic units in substantially the same form and arrangement as before the application of heat, the only visible change being usually a slight flattening and broadening at the points 8, 8 where the plastic is bonded to the fabric. Since the use of this method has destroyed or relieved any former tension in the plastic units 1 and created a new set in the desired arrangement, the finished ornamental fabric is substantially free from any tendency to draw or pucker or cause the plastic to pull away from the fabric backing.

In the embodiment just described and illustrated in the drawing, the plastic at each of the spaced points of contact between the plastic units

and the fabric is bonded to the fabric. If desired, however, the heating may be confined to limited areas of the fabric, thus leaving some points of contact between the plastic and the fabric unbonded. It is also possible by selecting a different shape of plastic unit such, for example, as a rod having a flat base, to present a continuous line of contact between the unit and the fabric and, if desired, a continuous bond between the two.

Since certain changes in carrying out the above method, and certain modifications in the article which embody the invention may be made without departing from its scope, it is intended that all matter contained in the above description, or shown in the accompanying drawing, shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A flexible ornamental fabric comprising a flexible fabric backing member to which is bonded at spaced intervals an elastic spiral plastic unit substantially free from tension.

2. The method of making a flexible ornamental fabric comprising tensing a preformed elastic spiral plastic unit into predetermined shape, holding said tensed unit against a face of a flexible fabric backing with at least portions of spiral turns of said tensed unit in contact with a surface of said backing, softening at least the backing-contacting portions of said tensed unit thereby permitting the latter to distort with relief of tension therein, and rehardening the softened portions of said unit while being held against said backing to bond the backing-contacting portions to said backing.

3. The method of making a flexible ornamental fabric comprising distorting a preformed elastic plastic rod into predetermined shape with a setting up of stresses therein, holding said distorted rod against a face of a flexible fabric backing with said distorted rod in contact with portions of a surface of said backing, softening backing-contacting portions of said distorted rod thereby relieving stresses therein, and rehardening softened portions of said rod while the latter is being held against said backing to create a new set for said rod and cause adherence between said backing-contacting portions and said backing.

4. The method of making a flexible ornamental fabric comprising distorting a preformed and patterned, elongated, elastic plastic unit into predetermined shape with a setting up of stresses therein, holding said distorted unit against a face of a flexible fabric backing with portions of said distorted unit in contact with portions of said backing, softening at least the backing-contacting portions of said distorted unit thereby relieving stresses therein, and rehardening the softened portions of said unit while being held against said backing to create a new set for said unit and bond the backing-contacting portions of the latter to said backing.

5. The method of making a flexible ornamental fabric comprising distorting a preformed and patterned, elongated, relatively slender, elastic plastic strip into predetermined shape with a setting

up of stresses therein, holding said distorted strip against a face of a flexible fabric backing with spaced apart portions of said distorted strip in contact with spaced apart portions of a surface of said backing and with portions of said strip between said backing-contacting portions ornamentally spaced above the surface of said back-

ing, softening at least the backing-contacting portions of said distorted strip thereby relieving stresses therein, and rehardening the softened portions of said unit while being held against said backing to create a new set for said strip and bond the backing-contacting portions to said backing.

LUDWIG KAPHAN.