Nov. 23, 1943. M. H. STORCH 2,335,222

ORNAMENTAL PLASTIC FABRIC

Filed July 14, 1942

Fig. 1

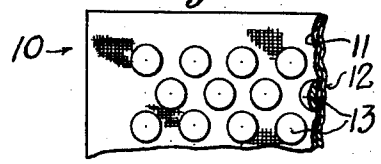


Fig. 2

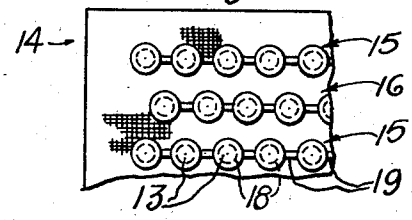


Fig. 3

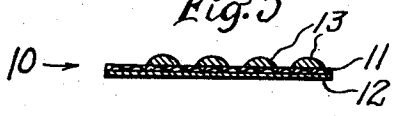


Fig. 4

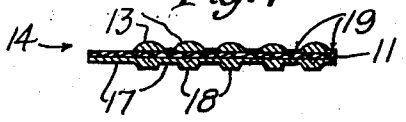


Fig. 5

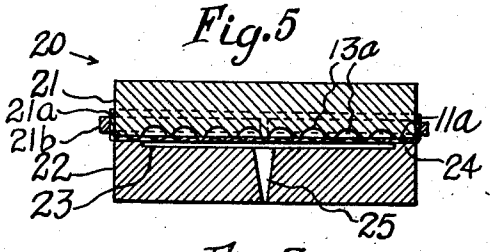


Fig. 6

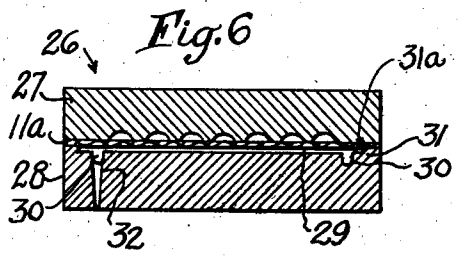


Fig. 7

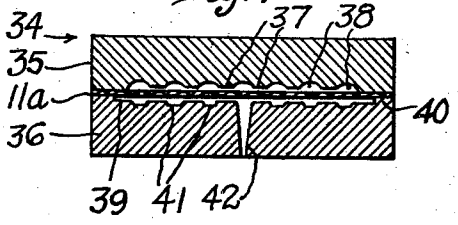
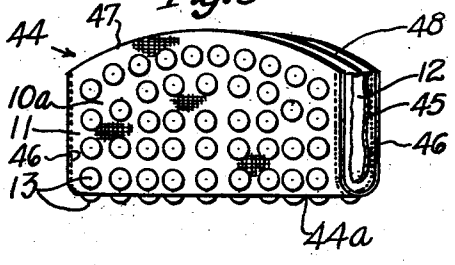


Fig. 8



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ORNAMENTAL PLASTIC FABRIC

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Application July 14, 1942, Serial No. 450,905

3 Claims. (Cl. 154—47)

This invention relates to the art of molding plastic ornamental fabrics, and to articles made therefrom.

One object of the invention is to provide improvements in the art of molding plastic ornamental fabrics such that a novel composite one-piece structure is obtained comprising decorative heads or projections, a sheet of textile forming a background therefor, and a sheet of plastic forming a flexible stiffening backing so that the structure is self sustaining for various uses, with the textile adding suppleness and tensile strength.

Another object is to provide such improvements whereby stiffening elements of plastic may be additionally obtained between the heads for increased rigidity in one or more directions as may be desired.

Another object is the provision of an improved article such as a handbag embodying the novel fabric hereinafter described.

Other objects and advantages of the invention will become apparent as the specification proceeds.

With the aforesaid objects in view, the invention consists in the novel combinations and arrangements of parts hereinafter described in their preferred embodiments, pointed out in the subjoined claims, and illustrated on the annexed drawing, wherein like parts are designated by the same reference characters throughout the several views.

In the drawing:

Figure 1 is a plan view of a portion of a fabric embodying the invention.

Fig. 2 is a similar view of a modification.

Fig. 3 is a sectional view of a fabric embodying the invention, such as the fabric of Figs. 1 and 2.

Fig. 4 is a sectional view of a modified fabric.

Figs. 5 to 7 inclusive are sectional views of different dies for molding the fabric, according to different methods.

Fig. 8 is a perspective fragmentary view of a handbag embodying the invention, with a part removed.

The advantages of the invention as here outlined are best realized when all of its features and instrumentalities are combined in one and the same structure, but, useful devices may be produced embodying less than the whole.

It will be obvious to those skilled in the art to which this invention appertains, that the same may be incorporated in several different constructions. The accompanying drawing, therefore, is submitted merely as showing the preferred exemplification of the invention.

Referring in detail to the drawing, 10 denotes a fabric embodying the invention. The same may consist of a textile fabric 11 having a backing sheet of plastic material 12 sufficiently thin to be flexible, and a series of variously shaped decorative heads or beadlike ornaments 13 of plastic. These three elements provide a one piece decorative structure, with the plastic backing having some rigidity so that the fabric 10 is self sustaining. Thus the use of various stiffeners or supporting or filler materials, of cardboard, felt and the like may be dispensed with. Nevertheless the fabric 10 has sufficient flexibility so that it can be readily worked, curved as in forming the bottom of a handbag, and otherwise adapted for making into many different articles. The textile fabric 11 adds tensile strength to the fabric 10, so that even if it should be misused, causing the plastic backing to crack, no opening in the fabric will develop and its continuity at the front face of the goods will be preserved. Moreover, the textile 11 adds suppleness to the fabric 10, especially as it lies in part between the plastic backing and the ornamental elements 13. The latter may be variously arranged and spaced to suit. If more rigidity is desired, they may be molded closer together, and if more flexibility is desired they may be placed further apart.

The fabric 10 is moreover waterproof, because the plastic backing 12 itself possesses this characteristic, and because the plastic impregnates the textile 11. The fabric 10 is adapted to form an hermetically tight wall so that the finest powders cannot work therethrough. Finally, the fabric 10 can be directly stitched to make various articles, because the needle of a sewing machine will readily penetrate at parts where the heads 13 are absent. Of course, the fabric can be directly constructed in various shapes, circular, arcuate, polygonal, and the like, or it may be cut down to such shapes. The textile will afford an attractive background for the heads 13, so that the continuous plastic sheet 12 need not show at all.

In Figs. 2 and 4 is shown a modification, wherein a fabric 14 may be exactly like the fabric 10, except that the decorative heads are disposed in horizontal rows 15, 16 which are separated a distance greater than that between the heads of each row to afford a high degree of horizontal flexibility and a lesser degree of vertical flexibility; and further, there are plastic gates or ribs 19 and bottom extensions 18 hereinafter described.

The spacing of the rows 15 and 16 is of advantage, for example, in a handbag especially at the folded or curved bottom thereof. The heads may be round as shown, to simulate beads, or they may be polygonal or of other shapes. The ribs or gates 19, which may also extend in as many radial directions from each head as may be desired, may serve as a control for flexibility of the fabric. The bottom extensions 18 permit the plastic sheet 17 to be made thinner than otherwise possible.

In Figs. 3 and 4 are shown sectional views of fabrics, each of which may correspond to either of the fabrics 10 and 14. For convenience one is denoted as 10 and the other as 14, the latter being different only in that the plastic backing 17 is thickened by the extensions 18 immediately opposite to the decorative heads, which afford reenforcement anchorages for the intermediate parts of the plastic sheet so that these intermediate parts can be made thinner than otherwise without breaking at the heads. Thus a high degree of predetermined flexibility is obtained with sufficient rigidity for the purpose desired. At certain points, the rigidity of the fabric may be increased by the very small gates 19 interconnecting a plurality or a series of the heads, and such gates may impart an added ornamental quality to the fabric.

At 20 is shown a die adapted for making a fabric such as shown at 10. It comprises a plurality of die plates 21, 22, the former having cavities 13*a* for the heads 13, and the latter having a continuous depression 23 which is like one large gate defined by a marginal clamping lip 24. A suitably positioned opening 25 is used for feeding the plastic into the die. A sheet of textile 11*a*, corresponding to that shown at 11, is placed between the die members 21, 22, the plane lip 24 clamping the textile against the plane marginal face of the die member 21 to tautly secure the textile. This may be facilitated by folding the textile marginally around one die member as at 21*a*, and marginally clamping it as by a clamp or split ring 21*b*, before closing the die. Now the depression 23 bounded on one side by the textile and is of such depth as to correspond to the thickness of the plastic sheet 12. Upon injection of the plastic at 25 into chamber 23, the plastic fills the latter and is forced through the textile and into the cavities 13*a* to produce the fabric 10. The textile is of course porous, but of ample density. It need not be a mesh fabric, but may have sufficient yarns to afford a high degree of tensile strength. For instance, a so-called commercial cheese cloth or somewhat denser fabric may be satisfactory.

In Fig. 6 is shown a die 26 having die members 27, 28, the former being like that at 21, and the latter having a depression or chamber 29 marginally bounded by a groove or gate 30 around which extends a clamping lip 31. A gate 32 may feed plastic to the feed trough or gate 30. The operation proceeds as with the die 20, except that the solidification of plastic is more rapid at the outer marginal region 31*a*, because the plastic first enters there, and hardens in the water-cooled die so as to anchor the textile against slippage or distortion. Thus the clamping action of the lip 31 is supplemented. The plastic rib formed at 30 may be used as a stiffener or may be cut away when the molded fabric is removed from the die.

In Fig. 7 is shown a die 34 having the members 35, 36, the former being like that at 21 except that small openings or gates 37, as indicated at 19, may interconnect some or all of the cavities 38, and the die member 36 having a depression or chamber 39 bounded by a clamping lip or face 40, but the depression having in its underside a series of cavities 41 aligned with the cavities 38 but smaller than the latter. A plastic inlet 42 leads to one or more of the cavities 41. The operation is the same as described for the die 20, and thus the fabric 14 is produced. It will be noted that the plastic may flow into the gates 37 from the cavities 38 or from the depression 39 directly through the textile 11*a*.

In Fig. 8 is shown an article such as a handbag 44, embodying the invention. The side walls thereof are generally reenforced by cardboard and cushioning materials which entails much work and expense. Such backings are used even with handbags made of leather. By this invention, the side walls and bottom of the handbag may consist of a single sheet 10*a*, like that at 10, curved to form the bottom 44*a*, and connected to end gussets 45 as by stitching at 46 which passes directly through the fabric 10*a* where it is free of the decorative heads 13.

In this handbag a lining may be used or may even be omitted; the side walls are waterproof and are hermetically tight against seepage even of powder. The inside plastic face of the sheet 12 is neat and clean. There is rigidity combined with flexibility, so that the handbag is self-sustaining and keeps its form. Its shape may be made to suit, as by directly molding the upper curved parts or segments 47 for ornamental reasons. The handbag may also be made of the fabric 14, with the rows 15, 16, horizontal. Any suitable closure, such as a slide fastener 48 may be provided.

I claim:

1. A composite fabric having a sheet member of textile fabric, a multiplicity of decorative protuberant elements on one face thereof consisting of a plastic material, the textile fabric being impregnated throughout with a plastic material integral with the decorative elements, and the latter being spaced sufficiently so as not to interfere with the flexibility of the textile fabric, and a sheet element of plastic material on the other face only of the textile fabric coextensive throughout therewith and being continuously connected to and integral with the plastic that impregnates the textile fabric, said plastic sheet element being waterproof and being so thin as to be flexible and readily penetrable by a sewing needle but having stiffness to render the composite fabric firm, whereby backing materials can be dispensed with and articles can be made by stitching said composite fabric.

2. A composite fabric comprising a sheet member of textile fabric of the approximate density of cheese cloth, a multiplicity of wear resisting protuberant spaced elements on one face thereof, and a second sheet member on the other side of the textile fabric, the first mentioned side of the latter being exposed except for said spaced elements, said spaced elements and said second sheet member consisting of plastic material which impregnates the textile fabric to thus bond thereto the elements and the second sheet member, the latter being coextensive with the textile fabric and being continuously united thereto and constituting a stiffening backing for the textile fabric but being sufficiently thin to permit flexing of the composite fabric.

3. A composite fabric including a textile sheet

member impregnated with plastic, a multiplicity of wear resisting protuberant plastic elements on one face of the textile member, a plastic sheet member on the opposite face of the textile member coextensive therewith, the elements and the plastic sheet member being integral with the plastic that impregnates the textile member, the plastic member being thus continuously united to the textile member throughout, the plastic member being sufficiently thin so as to be readily flexible, and plastic ribs interconnecting the said elements and being located on the same side therewith and being integral with the plastic that impregnates the textile member, said plastic ribs serving to stiffen the composite fabric, and the textile member between the ribs and the plastic member affording suppleness of the composite fabric in flexing the same.

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