

UNITED STATES PATENT OFFICE

2,126,757

METHOD OF ADHERING A MONOGRAM TO
A BASE MATERIAL

Camille Dreyfus, New York, N. Y.

No Drawing. Application December 1, 1934,
Serial No. 755,587

1 Claim. (Cl. 154-2)

This invention relates to the use of organic derivative of cellulose as an adhesive for attaching monograms, sheet material, designs, ornaments or other figures of paper, fabric, felt, etc. on any porous or semi-porous material such as fabrics, walls, billboards and the like and more specifically to the use of a fabric containing cellulose acetate and a plasticizer to be employed as an adhesive material.

10 An object of the invention is the economical and expeditious method, and product thereof, of causing one material to adhere to another in such a manner that exposure to laundering, to wet or other atmospheric conditions, etc. will not cause a separation of the two materials. Other objects of the invention will appear from the following detailed description.

By this invention figures may be caused to adhere to any porous or semi-porous material in a simple manner requiring no skill yet they so adhere as to be substantially permanently attached to each other. Thus, by the mere application of the figure to be applied and the adhesive material to the base material, the wetting of the same and the pressing of the same, adhesion is effected, which adhesion is permanent or substantially permanent against all normal launderings, wettings, atmospheric conditions such as atmospheric moisture, changes in temperature, etc. This invention has the advantage that retail store clerks and like people unskilled in sewing or other people not having access to machines may place on wearing apparel and the like monograms, figures and designs.

35 A further advantage of this invention is the variety of figures that may be caused to adhere to a base material without an outlay of any great capital. It is merely necessary that the figure be cut or formed and that the adhesive material be cut or formed to substantially the same shape as the figure. The figure and adhesive material may be placed on the base material and pressed in the presence of heat and moisture whereby the figure is substantially permanently attached to the base material.

In accordance with my invention, I form an adhesive material from a fabric which contains an organic derivative of cellulose and a plasticizer. Also, in accordance with this invention, I use an adhesive material of similar composition between a base material and a figure and cause the adhesion of the assembly to be substantially permanent by pressing the assembly in the presence of heat and moisture.

55 This invention is applicable to the placing in a

substantially permanent manner. monograms, coats of arms and other figures on shirts, scarfs, ties, sweaters, sport jacket, athletic uniforms, military uniforms and other types of wearing apparel; also on pillow cases, sheets, table linen, dresser scarfs, drapes and other household materials. Further, figures, sheet material, panels, paper, cardboard, fabric with or without effect materials or coatings or other similar materials suitable for protective, ornamental and decorative effects may be jointed to walls, panelling, furniture and like semi-porous materials.

This invention is also applicable to the joining together of any two surfaces which are at least semi-porous. Thus any figure may be applied to any base material, which figure and base material are at least semi-porous. The base material may be any suitable fabric formed of yarns of linen, wool, cotton, regenerated cellulose, organic derivatives of cellulose, etc., or mixtures of these that may be felted, woven, knitted, knotted or netted or otherwise formed into fabric-like materials. Further, the base material may be Beaver Board, paper, cardboard, plaster board or wall, wood or any other similar kinds of semi-porous material. The figure, panel, etc. to be applied to such base material may or may not be similar to the base material, and may be a fabric of any nature, paper, artificial sheet material or other material.

The figure and base material are caused to adhere to each other by inserting between the same an adhesive material which consists of a fabric-like sheet containing an organic derivative of cellulose and a plasticizer. The adhesive fabric to be employed as the combining agent between the base material and the raised figure, and by raised figure is meant any monogram, design, panel, etc., may be a fabric containing an organic derivative of cellulose yarn and a plasticizer. For instance, this fabric may be formed entirely or substantially of yarns of an organic derivative of cellulose that has been padded with a substantial amount of a plasticizer, or the plasticizer may be incorporated into the yarns by adding same to the spinning solution from which the yarns are formed. Also, the fabric may be a non-thermoplastic fabric, for instance, a cotton fabric which has been padded with an organic derivative of cellulose and a plasticizer. The non-thermoplastic fabric may be coated or impregnated with the organic derivative of cellulose by applying to said fabric an aqueous slurry of a powder consisting of organic derivative of cellulose with or without a plasticizer. If the powder does not contain a

plasticizer, the plasticizer may then be applied, as by a padding operation, to the coated fabric. Other methods of applying the organic derivative of cellulose to non-thermoplastic fabrics may be employed.

Any suitable organic derivative of cellulose may be employed as the adhesive fabric or in the fabrics of either the base material or in the material of the figure to be applied to said base material. For example, the organic derivative of cellulose may be organic esters of cellulose and cellulose ethers. Examples of organic esters of cellulose are cellulose acetate, cellulose formate, cellulose propionate and cellulose butyrate, while examples of cellulose ethers are methyl cellulose, ethyl cellulose and benzyl cellulose.

The adhesion of the assembly of the figure, the adhesive inner layer and the base material may be caused by heat and pressure such that the organic derivative of cellulose of the adhesive material is caused to become swollen, coalesced, fluid or otherwise placed in condition such that it will bind together the two materials touching it. This may be accomplished in either of two ways. Thus, where a substantial amount of plasticizer is used along with the organic derivative of cellulose in the adhesive material, the mere application of heat and pressure in the presence of water is sufficient to cause adhesion of the assembly. However, if the amount of plasticizer is small or if no plasticizer is used, a solvent for the organic derivative of cellulose must necessarily be present during the heating and pressing operation. The use of a large amount of plasticizer is in some cases desirable, as many fabrics, either of the figure or of the base material, might be affected by the application of solvent there-through to the organic derivative of cellulose in the center of the assembly, while if plasticizer is present the adhesion may be caused merely by pressing with heat in the presence of moisture. The moisture may be present as steam or water or as aqueous solutions. Thus, when employing plasticizer, the pressing operation causing the adhesion may be accomplished on any of the ordinary types of wool pressing machines which inject steam into the material being pressed, or if a dry iron is used the assembly may be dipped into or sprayed with water and then pressed. Any suitable pressure may be employed, for instance, from one to fifty pounds or more per square inch. Any suitable temperature may be employed which temperature will be dependent somewhat upon the materials forming the figure and base material. In the application of one fabric to another fabric, temperatures of from 65 to 200 degrees C. or more may be employed.

Any suitable plasticizer may be employed with the organic derivative of cellulose in forming the

adhesive material which may be used in the presence of water and without a solvent for the organic derivative of cellulose. The plasticizer is preferably a water-insoluble plasticizer. However, any suitable plasticizer may be employed which will make the organic derivative of cellulose more readily susceptible to the action of heat. The plasticizers may be any suitable one for the particular organic derivative of cellulose or mixture of organic derivative of cellulose employed. Plasticizers may be any of the high boiling solvents or softening agents as, for example, the aryl sulphonamides as para ethyl toluol sulphonamide, the alkyl phthalate as dimethyl phthalates, the dialkyl tartrates as dibutyl tartrate, the alkoxy esters of polybasic organic acids as diethoxy ethyl phthalate, the polybasic acid esters of the mono-alkyl ethers of polyhydric alcohols, as diethylene glycol ethyl ether ester of phthalic acid, the alkyl esters of phosphoric acid as triethylglycol phosphate, the aryl esters of phosphoric acid as tricresyl phosphate, the mixed alkyl and aryl phosphates as ethylglycol dicresyl phosphate and camphor.

As an illustration and not as a limitation, the following example is given.

Example

A monogram consisting of letters cut from a piece of felt is placed on a similar figure of a fabric consisting of yarns of cellulose acetate that contain about 75%, based on the weight of the cellulose acetate present, of a plasticizer such as dibutyl tartrate and the same is assembled with a woolen athletic shirt and the assembly subjected to heat and pressure in the presence of water. The monogram is found to be substantially permanently attached to the athletic shirt yet the exposed surface of the monogram is unaltered either as to hand, color or other appearance.

It is to be understood that the foregoing detailed description is given merely by way of illustration and that many variations may be made therein without departing from the spirit of my invention.

Having described my invention, what I desire to secure by Letters Patent is:

A method of applying a monogram to a base material of non-thermoplastic material, which comprises placing between the base material and the monogram a fabric containing yarns of cellulose acetate and dibutyl tartrate in an amount equal to 75% based on the weight of the cellulose acetate present, and subjecting the assembly comprising the monogram, intermediate fabric and base material to heat and pressure in the presence of water.

CAMILLE DREYFUS.