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(54) Removal of adhesive labels or other adherent coatings.

(57) A method of removing an adherent coating such as a badge, label or marking element from a substrate comprising applying over the adherent coating (6) a patch (7) of a material having a heat activable backing, heat sealing the patch to the adherent coating, after cooling applying a solvent to the reverse side of the substrate (5) from that to which the coating is adhered, and peeling the patch and adherent coating from the surface of the substrate.

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Removal of Adhesive Labels or Other Adherent Coatings

This invention relates to the removal of adherent coatings and is especially applicable to the removal of adhesive labels or badges from textile fabrics.

In the marking of working garments for identification purposes permanent printed labels are commonly used which comprise film forming resins securable by application of heat to the fabric of the garment to provide permanent markings which hitherto have not been capable of removal. The resins utilised in such labels are of a thermosetting or heat curable type in which a cross linking reaction takes place on heating to bond the resin film to the fabric. Hitherto removal of such labels has not been possible and though this provides the advantage of permanence it has a number of disadvantages since garments require quite frequent re-labelling so that they may be issued to different personnel.

We have now surprisingly found that such labels, which have previously been thought permanent, can be removed from fabrics by use of a special technique involving additional heat sealing operations together with the use of solvents.

Thus the invention provides a method for the removal of an adherent coating from a substrate, the method comprising applying over the adherent coating a patch of a material having a heat activable adhesive backing,

heat sealing the patch to the adherent coating, after cooling applying a solvent to the reverse side of the substrate from that to which the coating is adhered, and peeling the patch and adherent coating from the surface of the substrate.

The adherent coating may comprise a badge, label or other marking element consisting of or incorporating a heat cured film-forming resin or resins. The solvent preferably comprises dichloromethane and methanol.

The patch is preferably considerably larger in area than the adherent coating to be removed and a portion of the patch is preferably not adhered to the coating or the substrate so that, after heat sealing, the patch may be readily gripped and withdrawn from the substrate removing the label or the like with it.

The invention is believed to be effective due to the fact that heat sealing of the patch on to the adherent coating forms a strong bond between them, the strength of which exceeds that of the bond between the coating and the fabric substrate after the latter has been treated with the solvent. This weakens the coating/substrate bond so that on removal of the patch the label or coating adheres to the patch and is removed from the fabric substrate. Thus although application of the solvent alone does not enable removal of the coating, use of the superimposed heat sealed patch in combination with the solvent enables removal despite the fact that this was previously thought to be impossible.

The invention is particularly useful in connection with the removal of identication labels from working garments. Such labels are attached to garments to identify personnel and require to withstand repeated laundering or cleaning operations. Hitherto many such labels although satisfactorily meeting these requirements have not been removable from the garments by known solvents and where re-labelling of garments has been necessary additional labels have required to be applied over the original label or labels. Apart from the fact that an unsightly appearance results this tends to give rise to cracking which further detracts from the appearance and can result in deterioration of the label. The present invention enables removal and replacement of labels of this kind and hence avoids these problems.

In one particular embodiment described by way of example with reference to the accompanying drawing, the invention is applied to the removal from a garment 5 of an identification label 6 comprising a film forming resin composition which has been heat-sealed to the fabric of the garment by a heat activated cross-linking reaction between the resin and cross-linking agents in the presence of a catalyst. In order to remove the label a patch 7 of woven fabric, for example of polyester cotton, having an area substantially greater than that of the label and provided on one surface with a layer of heat activable thermoplastic polyurethane resin adhesive is placed over the label so as to completely cover it but with a portion 8

of the patch projecting beyond the label at one side or end. The patch is then heat sealed to the label and to the fabric of the garment and allowed to cool leaving the projecting end portion free to enable the patch to be gripped. During cooling the patch becomes firmly bonded to the label which is to be removed.

Following cooling a compatible solvent is applied to the rear surface of the garment behind the region to which the label and patch are attached, the solvent preferably comprising 90% dichloromethane and 10% methanol. The patch may then be gripped and pulled from the surface of the garment and will be found to bring the label away with it leaving the garment ready to receive a replacement label.

Various modifications may be made without departing from the invention. For example, the technique may be applied to the removal of adherent coatings in the form of badges, labels and identification tapes or the like formed from or secured by different heat curable film forming resins. The heat curable resin coating provided on the patch may comprise a thermoplastic or thermosetting resin and the patch may be formed from a number of different textile fabrics or other materials in sheet form having the requisite strength.

PATENT CLAIMS

1. A method for the removal of an adherent coating from a substrate, characterised by applying over the adherent coating (6) a patch (7) of a material having a heat activable adhesive backing, heat sealing the patch to the adherent coating, after cooling applying a solvent to the reverse side of the substrate (5) from that to which the coating is adhered, and peeling the patch (7) and adherent coating (6) from the surface of the substrate (5).

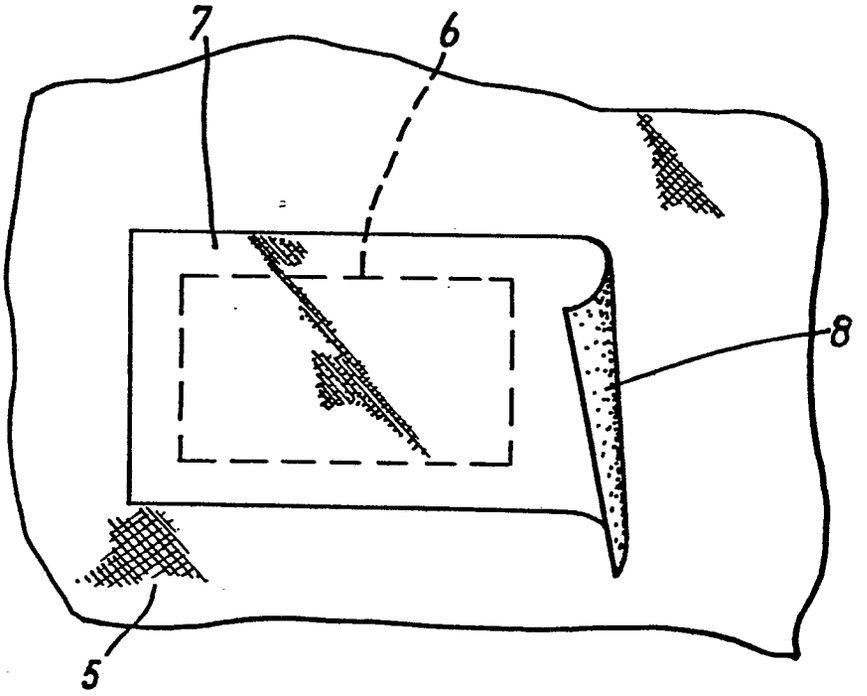
2. A method according to claim 1 characterised in that said adherent coating (6) comprises a badge, label or marking element.

3. A method according to claim 1 or 2 characterised in that said adherent coating (6) comprises a heat-cured film forming resin.

4. A method according to any of claims 1 to 3 characterised in that said solvent comprises dichloromethane and methanol.

5. A method according to any preceding claim characterised in that said patch (7) is larger in area than said coating (6), a portion (8) of the patch not being adhered to the coating (6) or the substrate (5) whereby to facilitate gripping of the patch during removal from the substrate.

6. A method according to any preceding claim characterised in that said patch comprises a woven fabric.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