Oct. 17, 1944. J. J. ORMOND 2,360,515

METHOD OF MAKING FLOCK MATERIAL

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Fig. 1.

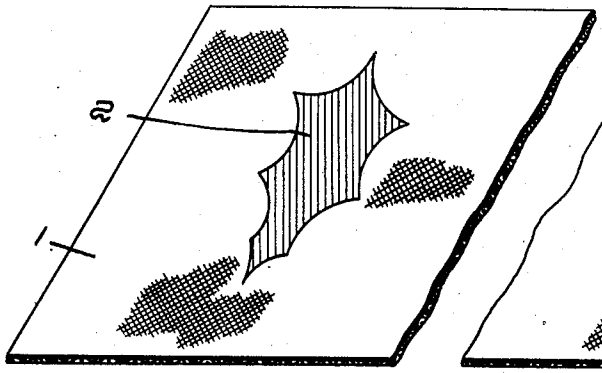


Fig. 2.

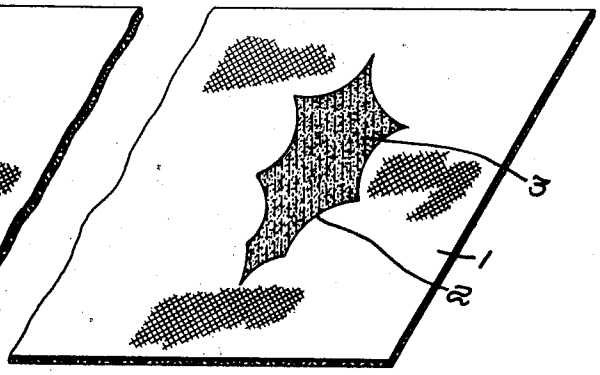
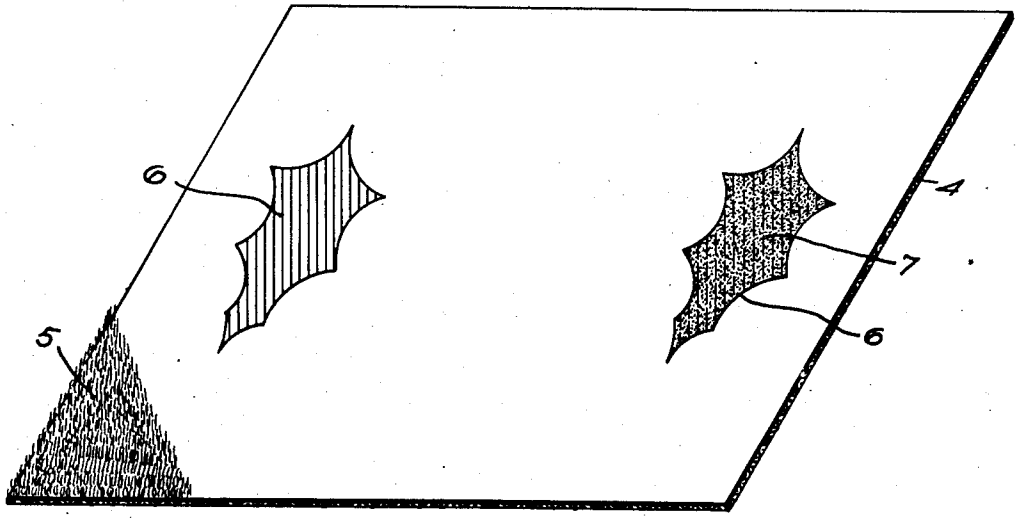


Fig. 3.



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METHOD OF MAKING FLOCK MATERIAL

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1 Claim. (Cl. 117—13)

This invention relates to methods of making flock material and more especially to methods of selectively applying adhesives and flock in the form of printed designs and patterns.

In making flocked materials, it is customary to apply on a suitable base, as a textile, an adhesive coating to which flock is added and fixed in accordance with well known procedures. On account of the tacky nature of the adhesives required to be used, it is difficult to apply these substances in selective areas of a base, and in the form of intricate designs presenting sharply cut edges and fine points. This difficulty is increased by the rough texture of fabrics usually employed as a base, and especially so in the case of applying an adhesive and flock over a fabric already bearing a nap or block.

A principal object of the invention is to improve methods of making flock materials and more especially to devise a procedure for selectively applying adhesive and flock to form figures and designs which present sharply cut edges and fine points. Another object of the invention is to selectively apply adhesive and flock in a satisfactory manner over a base having a nap or flock already formed thereon. The invention also aims to provide a method of forming flock materials which may be carried out with mechanical printing members operated continuously at relatively high speeds, and which is accurate and cheap.

The nature of the invention, and its objects, will be more fully understood from the description of the drawing and discussion relating thereto.

In the accompanying drawing:

Figure 1 is a perspective view diagrammatically illustrating a step in the method of the invention;

Fig. 2 is another perspective view illustrating a further step in the method referred to; and

Fig. 3 is a perspective view illustrating a modification of the method of the invention.

In carrying out the method of the invention, a printing member having relieved metal printing surfaces is employed. It has been found that the metal surfaces of the relieved printing portions, which normally would stick to adhesive material of the type employed in making flocked materials, may be improved by providing thereon a film or coating of a resinous substance.

The resinous substance substantially modifies the character of the relieved printing surfaces, enabling the surfaces to pick up relatively large amounts of adhesive and to release the adhesive smoothly on a base surface such as a textile. The coating or film referred to is especially effective in applying an adhesive in the form of intricate designs presenting sharply cut edges and fine points, which makes possible the production of flock material occurring in the form of printed subject matter of relatively fine printing quality.

Referring more in detail to the drawing, Fig. 1 illustrates a base, such as for example a web of textile material 1 over which is printed adhesive 2 in the form of some desired design. It is intended that the design 2 be illustrative of different types of subject matter which may be applied with an adhesive to the surface of the web, and which may be repeated throughout the surface of the web.

Fig. 2 illustrates the step of applying flock 3 over the surface of the printed adhesive design and subjecting the web 1 to treatments directed to fixing the flock in the adhesive 2, in accordance with well known procedures. The flock 3 adheres to the sharply defined edges and points of the adhesive design 2, forming a clearly outlined figure superimposed upon the fabric 1, and occurring in relief thereon.

In accordance with the invention, I provide a relief printing member such as, for example, a relief printing roll. The entire surface of the roll is coated with a film of resinous substance, for example shellac, which is allowed to dry. The relief printing surfaces of the roll are then covered with adhesive of some suitable type employed in flocking processes, making use of an inking roll such as a brayer which may also be coated with a resinous substance before being supplied with the adhesive. The brayer deposits a film of adhesive on the printing surfaces of the roll which is immediately passed over the fabric 1 before any substantial drying can occur. The adhesive is thus transferred in its entirety from the printing surfaces to the fabric in a smooth, sharply formed design.

An important feature of the method is the combined use of relief printing surfaces and films on these surfaces. The relief type of plate is adapted to handling relatively large amounts of printing material which allows the rough texture of the fabric to be well filled in by the adhesive. The pressure used with relief printing members affords sharp edges. The resinous substance as exemplified by the shellac exercises enough attractiveness to remove adhesive from a brayer in a smooth film and also to release smoothly the adhesive on a base surface.

The adhesives employed in making flock material are insoluble in water and various other solvents, and are commonly formed of colloidal bodies which are adapted to set quickly upon exposure to air. One example of an adhesive which is satisfactory for flocking purposes in a compound which includes resin paints.

The use of shellac on the surface of the printing plate is especially effective in picking up and releasing proper amounts of such an adhesive material. Other resinous materials as varnishes and synthetic resins may be utilized. The use of the shellac with other types of printing plates may be resorted to, with less desirable results. It is intended that the method of preparing a printing member with a film especially adapted to handle adhesives may be modified in accordance with changes in the printing surfaces, the adhesive, and the surface on which the adhesive is applied.

In Fig. 3 I have illustrated a base, as for example fabric **4**, having a nap or flock **5** provided at the upper side thereof. The method above described of printing adhesive material is again carried out to apply an adhesive design **6**, which overlies and completely fills in around the fibers of the nap **5**, and may thereafter be covered with flock **7**, as noted at the right-hand side of Fig. 3.

In this procedure, the same treatment of a metal relief printing member with a coating of resinous material such as shellac, is resorted to, and the shellac film or coating obtained is especially effective in transferring relatively large amounts of the adhesive which both fill in around the nap **5** and allow relatively sharply cut edges to be secured. Such application of adhesive and flock on a surface already containing a flock or nap is highly desirable and affords a wide variation in design and appearance of flock materials.

The use of a relief printing member, such as a printing roll, is adapted to continuous and relatively high-speed operation, since the shellac coating, while insuring that substantial amounts of adhesive will be picked up and released upon a base, does not collect the adhesive material in the non-printing portions of the printing roll.

It will be seen that the method of the invention effects several results. It provides for applying adhesive and flock on any type of base in the form of clearly printed designs, and it especially provides for this printing procedure to be carried out on a textile surface, and even on a textile surface which is already covered with a nap or flock. The use of a film or coating of a resinous substance, such as shellac, has been efficiently combined with the inherent sharp printing quality of relief printing members, to overcome the special difficulties involved in printing a quick-drying adhesive such as is necessary in making flock materials.

While I have shown a preferred embodiment of the invention, it should be understood that various changes and modifications may be resorted to, in keeping with the spirit of the invention as defined by the appended claim.

I claim:

That improvement in methods of making flock materials which comprises treating a relief printing member with shellac to provide printing portions which are adapted to receive and release without sticking adhesive of the type employed for making flock materials, then applying said adhesive to the shellac-covered printing portions of the printing member, transferring the adhesive to a base in the form of designs which have sharp outlines, and then applying flock to the adhesive design.

JOHN J. ORMOND.