

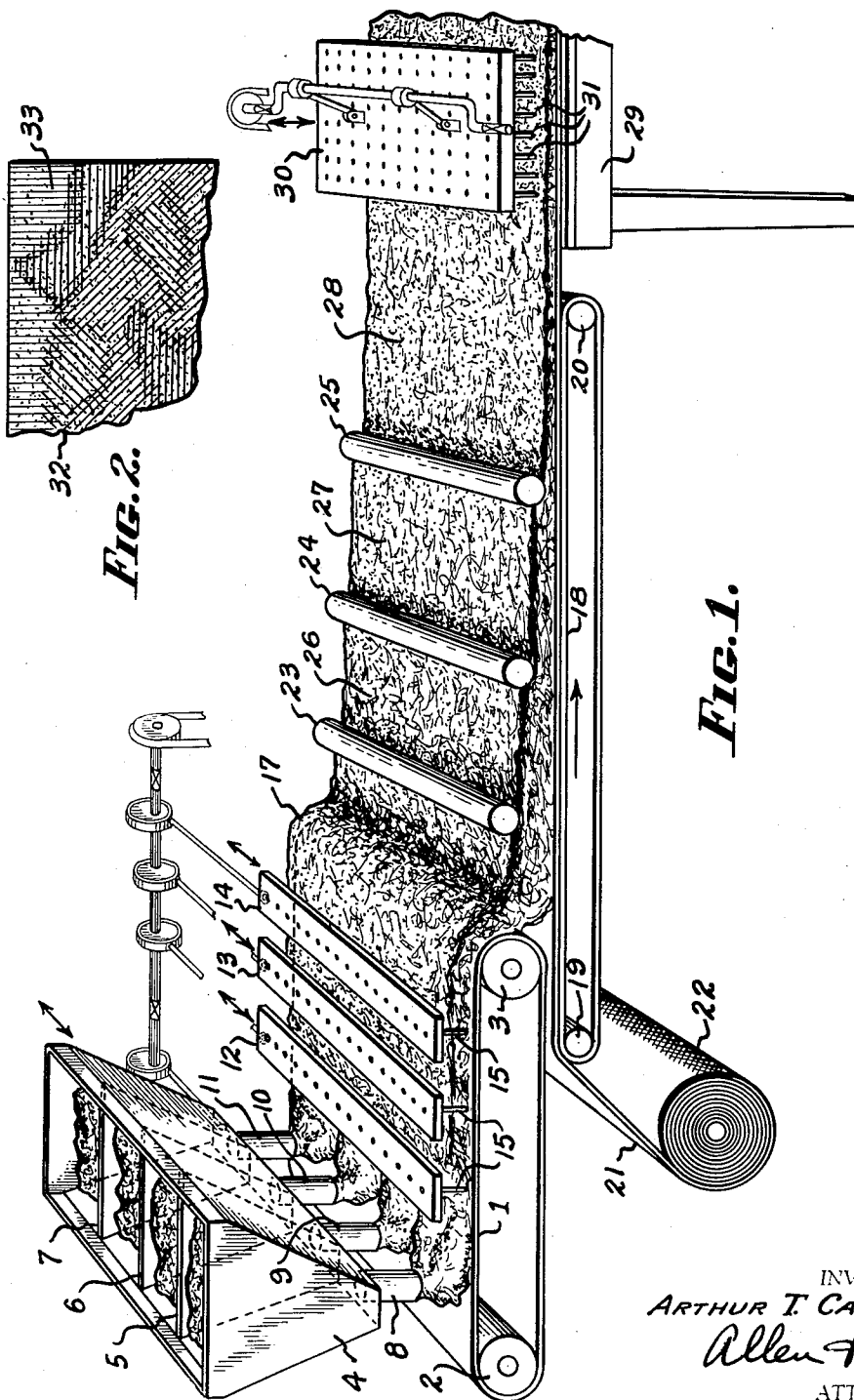
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MEANS AND METHOD FOR THE MANUFACTURE OF DECORATIVE NEEDLED FABRICS

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MEANS AND METHOD FOR THE MANUFACTURE OF DECORATIVE NEEDLED FABRICS

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9 Claims. (Cl. 28—4)

My invention relates to the manufacture of relatively heavy carpet-like fabrics formed by punching or needling animal hair, or other fibrous material through cloth such as burlap. As known in the art, the reverse side of the fabric may be coated with an adhesive such as rubber latex to bond the fibrous material, or may be otherwise backed as desired; and the top side of the fabric may be left in the condition resulting from the needling operation, or may be sheared.

Fabrics of this class have heretofore been manufactured and have been given designs by inhibition printing with dyes. Also such fabrics have been made in solid colors from predyed cattle hair. In a co-pending application of Melvin R. Grieser, Serial No. 54,295, filed Dec. 13, 1935, and entitled Decorative needled fabrics, there is set forth various means and methods for the production by needling of fabrics having designs. Predyed fibres of different colors are employed.

The present invention has for its object the provision of means and a method for the manufacture of decorative needled fabrics from different colors of dyed fibres, which fabrics are characterized by mottling or hit-and-miss arrangement of the colors employed, sometimes known as a jaspé effect. Another object of my invention is the securing of this general type of effect by an inexpensive and convenient means and method which does not slow up production.

These and other objects of my invention which will be apparent to one skilled in the art upon reading this specification, I accomplish by that certain construction and arrangement of parts and by that certain method of which I shall now set forth an exemplary embodiment. Reference is made to the drawing wherein:

Figure 1 is a diagrammatic perspective view of the exemplary apparatus.

Figure 2 is a face view of a piece of material made in accordance with my teachings.

In the drawing, 1 indicates the usual conveyor upon which the fibrous material is first deposited before being transferred to the cloth which is to form the needling base. This conveyor is regularly a conveyor comprising chains and slats or boards, the chains operating over rolls or sheaves 2 and 3. A hopper for depositing the fibrous material onto the conveyor is shown at 4. In the exemplary embodiment of my invention this hopper is divided into compartments for holding different colors of dyed fibres, and to this end I have diagrammatically indicated partition members 5, 6, and 7. The hopper compartments may terminate in delivery spouts 8, 9, 10, and 11.

By the means described, fibrous material of different colors or different shades of the same color is deposited upon the conveyor 1. Modification in the apparatus thus far described may be made and will frequently be found desirable. More than one hopper may be used, or the material may be delivered through suitable spouts connected by conduits or chutes with sources of supply of fibrous material without the use of a hopper as such. The function of the mechanism or any of its modifications will be to deposit upon the conveyor 1 streams of the fibrous material. In order to enhance the hit-or-miss effect, I prefer to oscillate the hopper and/or the delivery means in the directions shown by the arrows. This varies the position of the streams of fibrous material of the conveyor 1. Where more than one hopper or more than one series of delivery means are employed, it is not necessary that they all oscillate together, nor that all of them oscillate. It is not objectionable, and will frequently be found advantageous, if the streams cross each other.

The conveyor 1 becomes covered with the fibrous streams, and its even coverage may be insured by properly spreading the fibrous streams. This may be done in any suitable way. I prefer to provide means which not only serve to spread the fibrous material, but also serve to intermingle the fibrous streams still further. To this end I have shown rake-like members 12, 13, and 14 suspended above the conveyor 1 and having spreading teeth 15. These members are given an oscillatory movement by suitable means not shown. They may be oscillated at the same, or different rates of speed and amplitudes, and simultaneously in the same or different directions.

The fibrous bat, spread so as to cover the width of the conveyor 1 evenly and with the streams of differently colored fibrous material somewhat broken up and intermingled therein, is indicated at 17. It is deposited upon a second conveyor 18. First, however, a web 21 of the needling base cloth is led onto the conveyor from a supply roll 22. The fluffy covering of fibrous material 17 may be compressed in thickness, as at 26 by means of a roll 23. This operation may be repeated as many times as may be desired by means of successive rolls 24, 25, etc., until the thickness of the last of the successive stages of the bat, 27, 28, etc., is that desired for needling.

When the bat has been thus compressed it is delivered onto a needling table 29 where the fibers are punched through the base fabric by means of

needles 31 in needling board 30 which are reciprocated in the direction of the arrows. As many of the needling boards may be provided as desired. I have not illustrated the subsequent finishing operations mentioned above through which the fabric may be put. In the way which I have described needled fabrics may be made as at 32 with hit-or-miss color effects indicated at 33. These effects made as they are with predyed fibres are richer and more beautiful than those which result from attempts to gain similar effects by printing. This is in part because of the intermingling of fibres of different colors in intermediate areas. Carpet material and rugs having an over-all jaspé effect as made by my process are very beautiful. Also the teachings may be combined with the teachings of the application of Grieser referred to above so as to secure either a jaspé background or jaspé design elements in combination with conventional design element.

I claim:

1. A process of making multicolored needled fabrics, which comprises feeding on to a base fabric fibrous streams of different colors and of essentially longitudinal direction, but of substantially continuously varying widthwise placement, and needling the fibrous material into the base fabric.

2. A process of producing multicolored needled fabrics, which comprises placing on a base fabric fibrous material of different colors in different areas, partially commingling the fibrous material in the said areas, and needling the fibrous material into the base fabric.

3. A process of making multicolored needled fabrics, which comprises feeding on to a base fabric, streams of fibrous material of different colors and substantially continuously varying the position of said streams widthwise of the fabric preparatory to needling the fibrous material into the base fabric.

4. A process as set forth in claim 3 which comprises the additional step of commingling the fibrous streams partially prior to the needling operation.

5. A process of making multicolored needled fabrics, which comprises feeding streams of

fibrous material on to a moving support, oscillating said streams during said feeding and the movement of said support, transferring the fibrous material to a base fabric and needling it thereinto.

6. A process of making multicolored needled fabrics which comprises feeding streams of differently colored fibrous material on to a moving support, oscillating said streams so as to vary their position on said support, and afterwards spreading and partially commingling said streams on said support so as to cover a predetermined area thereof, all as steps preparatory to the needling operation.

7. A process of making multicolored needled fabrics which comprises feeding interspaced streams of fibrous material on to a support which is moving, said feeding being carried on at different stations and said streams being oscillated whereby to vary their position on said support and with respect to each other, and spreading the material thus imposed on said support, all as steps preparatory to a needling operation.

8. In mechanism of the class described a movable support upon which fibrous material may be imposed, a movable support for a base fabric, to the surface of which said fibrous material may be transferred, and means for imposing on said first mentioned support fibrous material of different colors in varying areas, said last mentioned means comprising means for feeding on to said support streams of said differently colored fibrous material, and means for oscillating said streams.

9. In mechanism of the class described a movable support upon which fibrous material may be imposed, a movable support for a base fabric, to the surface of which said fibrous material may be transferred, and means for imposing on said first mentioned support fibrous material of different colors in varying areas, said last mentioned means comprising means for feeding on to said support streams of said differently colored fibrous material, and means for oscillating said streams, and means for partially commingling and for spreading said streams while on said support.

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