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FLOOR COVERING SUCH AS CARPETS AND RUGS

Filed April 24, 1935

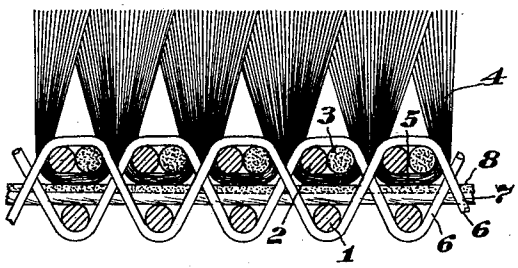


Fig. 1

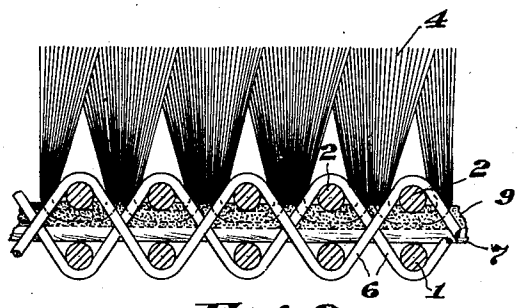


Fig. 2

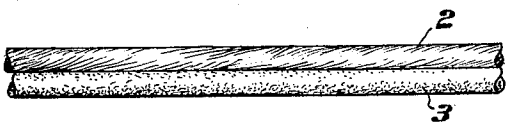


Fig. 3

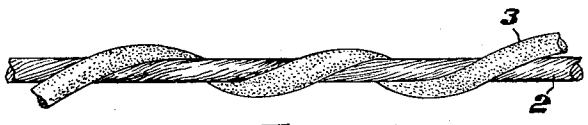


Fig. 4

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FLOOR COVERING SUCH AS CARPETS AND RUGS

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4 Claims. (Cl. 28—1)

This invention relates to floor coverings as typified in carpets, rugs and the like and is more particularly concerned with a construction wherein the threads, and more particularly the pile forming yarns are held or locked in permanent position and are prevented from raveling should the floor covering be cut.

Attempts have been made heretofore to secure pile forming yarns to a backing fabric by means of an adhesive, but in such case it has been the custom to cause contact between the adhesive and the exterior portion of the bend or loop of the pile forming yarn, with the result that when the floor covering is cut there is liable to be a raveling of some of the threads and particularly the pile.

One of the objects of the present invention is to so anchor the components of the fabric together and especially the pile forming yarns that a permanent bond is secured between them all, and even if the fabric be cut the integrity of the floor covering as a whole remains undisturbed.

This object of the invention may be secured by a thermo or solvent plastic material properly distributed, such that when it hardens after the softening agent has been applied the component parts of the floor covering are permanently secured in desired position.

The thermo or solvent plastic material may be applied to the threads or it may be constituted as a thread in itself, and then incorporated into the floor covering during its formation.

Where the main or important feature of the invention is concerned with the pile forming yarn, the thermo or solvent plastic material may and usually will be caused to occupy a position in the loops of the pile with the result that when the plasticizing agent has been applied and the thermo or solvent plastic material has become sufficiently soft, it will spread and while still occupying the interior of the loop of the pile it will engage a backing which may be formed either as a fabric of some sort or have an adhesive applied to its upper surface.

Excellent results have been attained by associating a thermo or solvent plastic material with a weft thread which serves as the holding weft shot for the pile. In other words, both the holding weft shot and the thermo or solvent plastic material will together occupy the loop of the pile.

In some cases the thermo or solvent plastic material may be formed of a suitable rayon and worked into a thread formation, as shown, or instead the thermo or solvent plastic member may be formed mainly of specially compounded Tornesit, or paraffin compounds, so that upon cooling or drying the thread structure of such a fabric will possess pile forming tufts which will be bound firmly into the back structure. In accordance with one aspect of the invention the solvent plastic material may be applied to the weft, warp and stuffer or any one or two of them and when the solvent plastic material becomes set or sufficiently dry, the entire thread structure becomes closely bonded together.

The characteristics of the invention will best be made clear from the following description and accompanying drawing of one conventional form of pile fabrics wherein:—

Fig. 1 is a longitudinal section of a fabric containing the present invention and prior to the application of the plasticizing agent;

Fig. 2 is a similar view showing the condition when the plasticizing agent has been applied and the thermo or solvent plastic material has been softened and spread;

Fig. 3 shows a thread formed of thermo or solvent plastic material associated with the holding weft shot for the pile forming yarns; and

Fig. 4 is a slightly modified form wherein the thermo or solvent plastic material is wrapped around the holding weft shot.

The fabric illustrated may be of any conventional type but, as shown, in the present instance of the invention the fabric has the back weft shots 1 and the two upper weft shots 2 and 3 about both of which the pile forming tuft yarns 4 pass so that both the holding weft shot and the thermo or solvent plastic member 3 occupy a position within the loop of the pile forming yarns, as indicated at 5. Suitable binding warps 6 secure the thread structure or in other words bind the lower weft shots 1 into their proper relation with the upper weft shots.

It thus appears that in the loop of each pile forming yarn there is a binding weft shot and a thermo or solvent plastic weft shot, as shown.

In the fabric structure, as indicated in Fig. 1, there may be a stuffer 7 and an adhesive 8 of sufficient fluidity to be forced upward through the backing and occupy a position in contact with the exterior of the loop of the pile forming yarns.

The construction so far described with respect to Fig. 1 has the binding weft shot 2 associated with the thermo or solvent plastic yarn or thread 3.

In Fig. 4 the non-plastic or binding weft shot 2 has the thermo or solvent plastic member 3

wrapped about it and, as will be apparent from the foregoing description, the thread structure takes the form as indicated in Fig. 1, but when the plasticizing agent is applied the thermo or solvent plastic member 3 softens within the loops of the pile and flows laterally in both directions, so that when the thermo or solvent plastic material has set the entire thread structure including the pile is securely anchored to the fabric and remains so even though the fabric be cut.

The thermo or solvent plastic member is shown in the illustration as in the form of a thread, but variations in this feature are, of course, obvious. For instance, if Tornesit or a similar material, be used for coating the yarns and the floor covering be subjected to a proper temperature the effect would be to bind the tufts to the backing through the adhesive qualities of the Tornesit or other compound of similar nature, and upon cooling the fabric would possess tufts which would be bound firmly in the back structure.

In any event the interior of the loops of the pile forming tufts as well as the exterior thereon are held by the thermo or solvent plastic material, as more clearly shown in Fig. 2.

What is claimed is:—

1. The method of constructing a pile fabric which consists in interweaving ground warps and wefts with pile tufts looped about non-plastic weft shots, simultaneously with said weaving introducing within the bights of said pile tuft loops, with said non-plastic weft shots, an adhesive liberating material, subsequently treating the fabric so woven to liberate the adhesive within the loops and cause the same to flow circumferentially around the bights of said loops and thereafter treating the plastic adhesive to set the same and bind the pile loops.

2. The method of constructing a pile fabric which consists in interweaving ground warps and wefts with pile tufts looped about non-plastic weft shots, simultaneously with said weaving introducing within the bights of said pile tuft loops, with said non-plastic weft shots, an adhesive liberating material in the form of a thread, subsequently treating the fabric so woven to liberate the adhesive within the loops and cause the same to flow circumferentially around the bights of said loops and thereafter treating the plastic adhesive to set the same and bind the pile loops.

3. The method of constructing a pile fabric which consists in interweaving ground warps and wefts with pile tufts looped about non-plastic weft shots, simultaneously with said weaving introducing within the bights of said pile tuft loops, with said non-plastic weft shots, an adhesive liberating material in the form of a thread wrapped around said non-plastic weft shots, subsequently treating the fabric so woven to liberate the adhesive within the loops and cause the same to flow circumferentially around the bights of said loops and thereafter treating the plastic adhesive to set the same and bind the pile loops.

4. The method of constructing a pile fabric which consists in interweaving ground warps and wefts with pile tufts looped about non-plastic weft shots and so interwoven with the ground threads as to conceal the bights of the pile loops within the ground structure, simultaneously with said weaving introducing within the bights of said pile tuft loops, with said non-plastic weft shots, an adhesive liberating material, subsequently treating the fabric so woven to liberate the adhesive within the loops and cause the same to flow circumferentially around the bights of said loops and thereafter treating the plastic adhesive to set the same and bind the pile loops.

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