

May 24, 1927.

1,629,923

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FELT FABRIC

Filed Dec. 27, 1926

Fig.1.

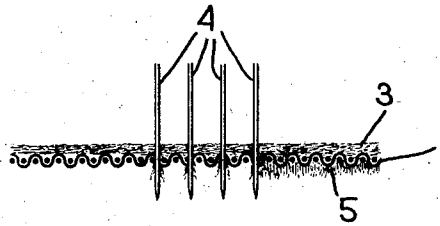


Fig.2.

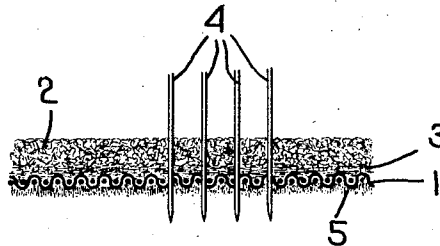
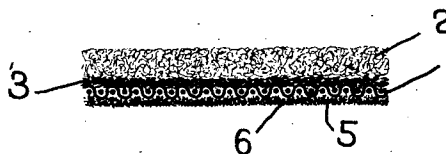


Fig.3.



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FELT FABRIC.

Application filed December 27, 1926. Serial No. 157,082.

This invention relates to felt fabrics of that type which comprises a base layer or ply of woven or knitted fabric, and a body of felt or unspun fibres secured thereto.

5 In some fabrics of this type the felt body or layer of unspun fibres is attached to the woven or knitted fabric base by pricking through the felt and woven or knitted fabric with needles, this operation carrying some 10 of the fibres of the felt through the woven fabric and interlocking the fibres therewith. It is also a common practice to apply sizing to the back face of the combined layers, the sizing or finished coating serving to 15 firmly attach to the woven fabric the fibres which have been pricked therethrough and also to give the base or woven fabric layer a little more body.

Felt fabrics of this nature are used for 20 various purposes and the character of the fibres in the felt body will vary more or less according to the use to which the fabric is put. For some purpose it is desirable that the felt fabric should have a more or less 25 resilient character, in which case the felt body would be made partially or wholly of wool fibres or some other fibres which have a high degree of resiliency.

A felt slipper and a felt insole are illustrations of articles in which it is desirable 30 that the felt fabric should retain its resiliency.

In the making of a felt fabric in the manner above outlined it sometimes happens 35 that the sizing or finishing coating which is applied to the back face of the fabric will soak through the woven ply and saturate a portion of the felt body. When the sizing dries or hardens it renders the sized 40 portion stiff and unyielding and if the sizing does work through into the felt body then the portion of the felt body which has the sizing incorporated therein is stiff and unyielding and the resiliency of the felt 45 body is thereby reduced.

It is one of the objects of my present invention to provide a novel felt fabric of this nature which is constructed so that the 50 sizing will be prevented from working into the felt body whereby said body will retain its full resilient characteristic. I accomplish this end by interposing between the felt body or woven fabric ply a layer or ply which acts as a barrier to prevent the sur-

plus sizing which soaks through the woven 55 fabric from passing into the felt fabric. This barrier layer will preferably be one which has the characteristic of readily absorbing the sizing so that any surplus sizing which 60 works through the woven fabric will be readily absorbed by the barrier layer and will be prevented from soaking or working into the felt fabric.

I find that jute makes an excellent material for the barrier layer and one way of 65 practicing the invention is to first attach a layer of jute fibres to the base or woven fabric ply and then to superpose on the jute layer the felt body and attach the latter to the jute layer and the woven fabric, after 70 which the sizing is applied as usual.

A fabric embodying the invention, therefore, comprises a base layer of woven or knitted fabric, a body layer of felt or unspun fibres attached to the base ply, a barrier 75 layer interposed between the woven fabric and the felt body and the sizing coating applied to the back of the fabric.

In order to give an understanding of the invention I have illustrated in the drawings 80 a selected embodiment thereof and also some of the steps by which it may be made.

Fig. 1 is a view showing the operation of uniting the barrier layer or ply to the 85 woven layer or base;

Fig. 2 shows the step of uniting the felt or body layer to the woven base;

Fig. 3 is a sectional view illustrating the 90 completed fabric.

Referring first to Fig. 3 the complete 95 fabric has the base layer 1 of woven or knitted fabric, the body 2 of felt or unspun fibres and the barrier layer or ply 3 which is interposed between the felt layer 2 and the base ply 1 of woven fabric.

In making the complete fabric I will preferably first attach the barrier layer 3 to the woven ply 1 and this may conveniently be done by superposing the barrier layer on the woven fabric and then pricking through 100 both layers with needles 4 as shown in Fig. 1. The barrier layer 3 may conveniently be made of unspun fibres in the nature of a felt and the pricking operation serves to 105 carry some of the fibres 5 of the layer 3 through the woven fabric 1 thereby uniting the two layers or plies. The layer 3 will preferably be of some material which has

the characteristic of readily absorbing sizing and I find that jute makes an excellent material for this purpose.

After the barrier layer 3 and the fabric 1 have been united by the pricking process as shown in Fig. 1 a relatively thick layer or ply of felt 2 is then superposed on the layer 3 and the felt layer 2 is then attached to the woven fabric layer 1 by pricking through all three layers by the needles 4 as shown in Fig. 2. This second pricking operation carries fibres of the felt layer 2 into and through the barrier layer 3 and also into and through the layer 1 of the woven fabric and it also carries additional fibres of the barrier layer 3 through the woven fabric 1. When the pricking process is completed, therefore, the two layers 2 and 3 are firmly united to the base layer 1 by reason of the many fibres of layers 2 and 3 which are carried into and interlocked with the woven fabric 1.

After the three layers have been thus connected together a coating of sizing is applied to the under face of the woven fabric layer 1, this sizing penetrating into and through the woven fabric 1 more or less.

The fibres of the layers 2 and 3 which have been pricked through the woven fabric 1 are firmly anchored in the sizing when the latter dries and thus the layers are firmly bound together.

Any of the sizing which passes through the woven fabric 1 will be absorbed by the

barrier layer 3 since the latter is of a nature that readily absorbs sizing. The presence of this barrier layer 3 will prevent any of the sizing from working into the felt layer 2 and, therefore, there is no danger that the resiliency of the felt will be reduced by reason of the fact that a portion of the felt becomes saturated with the sizing.

I claim:

1. A felt fabric comprising a base ply of woven or knitted fabric, a body ply of felt attached to the base ply, the latter having a coating of sizing applied thereto, and a barrier ply or layer interposed between the base ply and the felt body, said barrier ply having the quality of absorbing any surplus sizing which soaks through the base ply, thereby preventing said sizing from passing into the felt body, whereby the latter will not have its resiliency reduced by being partially saturated with sizing.

2. A felt fabric comprising a base ply of woven or knitted fabric, a barrier ply of jute fibres attached to the base ply, a body ply of felt overlying the barrier ply, and also attached to the base ply, said fabric having a coating of sizing applied to the back face of the woven fabric ply, the barrier ply absorbing any surplus sizing which penetrates the woven fabric and preventing such sizing from working into the felt ply.

In testimony whereof, I have signed my name to this specification.

THOMAS S. McDERMOTT.