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PROCESS FOR THE PRODUCTION OF FELT AND FELT FABRICS

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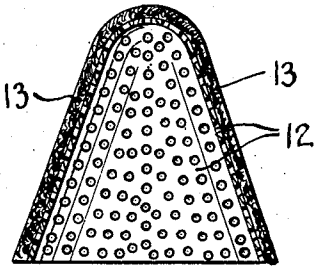
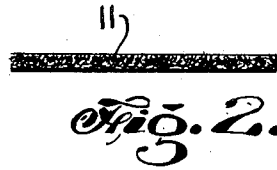
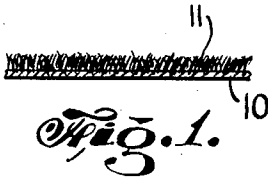
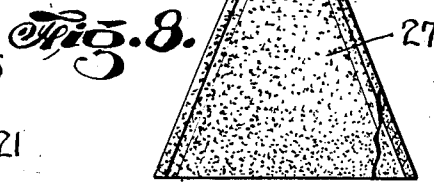
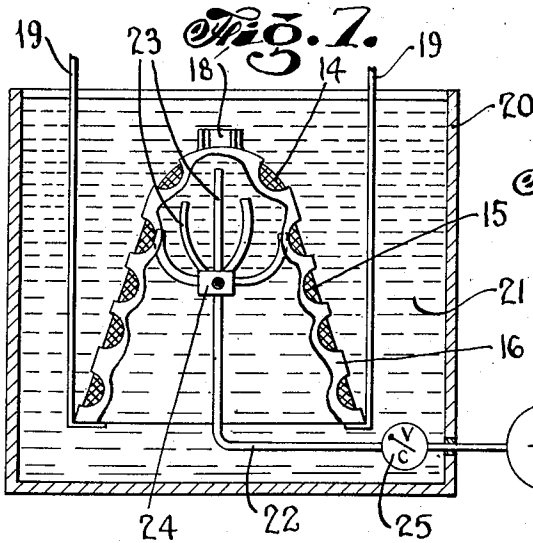
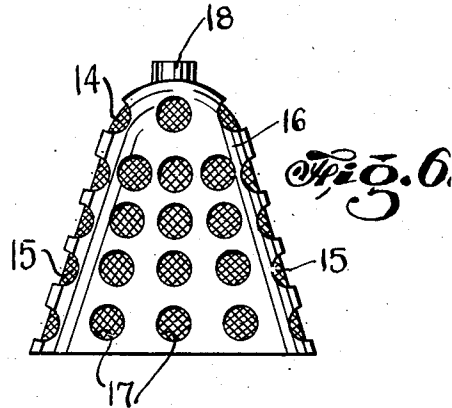
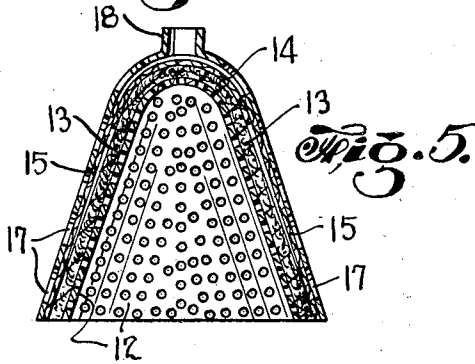


Fig. 4.



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PROCESS FOR THE PRODUCTION OF FELT AND FELT FABRICS

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7 Claims. (Cl. 28-5)

This invention relates to improvements in processes for producing felt and has for its object a novel method of producing a felted fabric such as is customarily made from rabbit hair and the like which will be uniform in quality and of even texture.

A particular object of this invention is the provision of a new method for manufacturing felted materials which will produce a fabric uniform throughout.

Further objects of the invention will be apparent from the specification and drawing in which:—

Fig. 1 is an elevational view of a rabbit skin or the like.

Fig. 2 is an elevational view of a mass of cut hairs. It is understood that for the purpose of this invention I use hairs ordinarily used in producing felt for felt hats and the like and in this particular embodiment the intended views illustrate the use of rabbit hairs though it is evident that other hairs can be made into felt by exactly the same process.

Fig. 3 is a plan view of Fig. 2.

Fig. 4 shows a perforated cone on which the preliminary felting of the hairs shown in Fig. 3 is accomplished.

Fig. 5 is a sectional view showing the assembly of the apparatus used in my improved process.

Fig. 6 is an outside elevation of Fig. 5.

Fig. 7 is a sectional view showing the apparatus shown in Figs. 5 and 6 immersed in a tank of water as a part of the process of producing the felted fabric.

Fig. 8 is an elevational view partly broken away showing the finished fabric.

10 is the skin of the fur used; 11 being the hairs serving as the raw material for the felt; 12 is a metal cone having a plurality of small perforations upon which the hairs 11 are spread in a thin layer and matted together so as to produce a rough fabric. This matting is accomplished by spreading the hairs lightly over the surface of the cone and then withdrawing the air from the inside of the cone so as to cause a gentle pressure upon the outside of the cone which has the effect of forming a loose fabric of the intertwined hairs.

The cone 12 with the rough fabric 13 is then covered with a top piece of wetted burlap 14 and a side piece of wetted burlap 15, thus surrounding the rough fabric 13 with a layer of burlap which has been previously wetted.

Over the entire structure is then projected another metallic cone 16 having the relatively large holes 17 and a spout 18, it being understood that

the cone 16 will fit over the combined structure of the inner cone, fabric, and burlap tightly so as to exert considerable pressure on the fabric and which will tend to force the individual fibres to more thoroughly intermesh with each other. It will be noted that the metal cone 16 is provided with a series of large holes but much smaller in number than the holes shown in the inner cone 12, as I do not require in the improved process hereinafter described the great quantity of holes shown in the cone 12.

The assembly shown in Fig. 6 is put on a cradle 19 which is shown schematically and lowered into a tank 20 filled with water 21. Positioned in the middle of the tank is a pipe 22 having the various outlets 23 emanating from a central head 24, the pipe 22 and outlets being intended to draw off air or air and water in the direction shown by the arrow in Fig. 7. A check valve 25 is inserted on the horizontal portion of the pipe 22 and on the outside of the tank is mounted a pump or blower 26 which will furnish the necessary pressure to force the air or air and water out through the pipe 22.

In the process hereinbefore described I have given merely the normal and usual preliminary process of producing a felt fabric from animal hairs. The process hereinafter described in the treatment of the fabric is novel and constitutes the gist of my invention.

The assembly shown in Fig. 6 is slowly lowered into the tank 20, the period of immersion for the entire assembly being for the base of the assembly about twelve seconds and for the tip of the assembly including the spout, about three seconds, it being therefore understood that the remaining portion of the assembly will be immersed for a period between these two limits.

As soon as the immersion of the cradle supporting the assembly shown in Fig. 6 begins, the blower or pump shown in Fig. 7 is started, the object of this procedure being to withdraw the air trapped on the inside of the cone 12 through the pipe 22 rather than to have this air escape through the meshes of the felted fabric which occurs in the process now customarily used. By withdrawing the air from the inside of the cone 12, the escape and bubbling of air through the perforations in the cone 12 and then through the meshes of the fabric is eliminated, thus avoiding some of the streaking and inequalities in the fabric now produced by the present process.

It is apparent that in exerting pressure to eliminate this air through the pipe 22, a certain amount of water will be withdrawn with the air

but this does not materially affect the process as the water can be readily restored to the tank, my entire object being to withdraw as much of the air as possible rapidly from the inside of the cone instead of having it escape through the perforations and through the fabric as at present.

After the immersion has been completed the cradle is lifted, the outer cone 16 and burlap is removed, and the felted fabric 27 is gently dried and is then ready for further operations.

It is apparent that changes in the method of removing the air and the form of the apparatus shown may be made without departing from the spirit of my invention as the apparatus shown is merely intended to schematically illustrate the process I use.

Having fully described my invention, what I claim is:—

1. A process for producing felt from animal hairs by matting animal hair fibres on a cone under pressure, wetting the mat so produced, superimposing another cone upon the wetted fibres, immersing the assembly of cones containing the fibres into water and removing the occluded air from the inside cone under pressure.

2. In a process of making felt from animal hairs, that step which consists in immersing a matted cone of animal fibres in water and removing the occluded air from the inside of the cone by pressure so as to prevent the escape of air through said fibres.

3. In a process of making felt from animal hairs, assembling and matting said hairs on a cone, wetting the mat so produced, superimposing another cone upon said mat, immersing said cones with the mat between in a tank of water, and

simultaneously removing the occluded air from underneath said cones by pressure.

4. In a process of making felt from animal hairs, assembling and matting said hairs on a cone, wetting the mat so produced, superimposing another cone upon said mat, immersing said cones with the mat between in a tank of water, and simultaneously removing the occluded air from underneath said cones by pressure, so as to prevent the escape of air through the wetted fibres.

5. In a process of making felt from animal hairs, assembling and matting said hairs on a cone, wetting the mat so produced, superimposing another cone upon said mat, immersing said cones with the mat between in a tank of water, and simultaneously removing the occluded air from underneath said cones by pressure, so as to prevent the escape of air through the wetted fibres, and subsequently drying the matted cones so produced.

6. In a process of producing felt, assembling animal fibres under pressure on a form, wetting the matted fibres so produced, superimposing another form of like structure as the first form upon said matted fabric, and then subjecting the fabric so produced to immersion in water, and simultaneously removing the occluded air from the innermost form upon which the matted fabric rests.

7. In a process of producing felt from hair, assembling the hairs upon a form, wetting said form, exerting pressure upon said form, immersing said form with the matted fabric in water, and simultaneously removing the air from underneath said form.

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