March 26, 1957 J. VANDEWEGHE 2,786,791

METHOD OF TRANSFERRING CUT FUR TO A BACKING

Filed Dec. 11, 1953 3 Sheets-Sheet 1

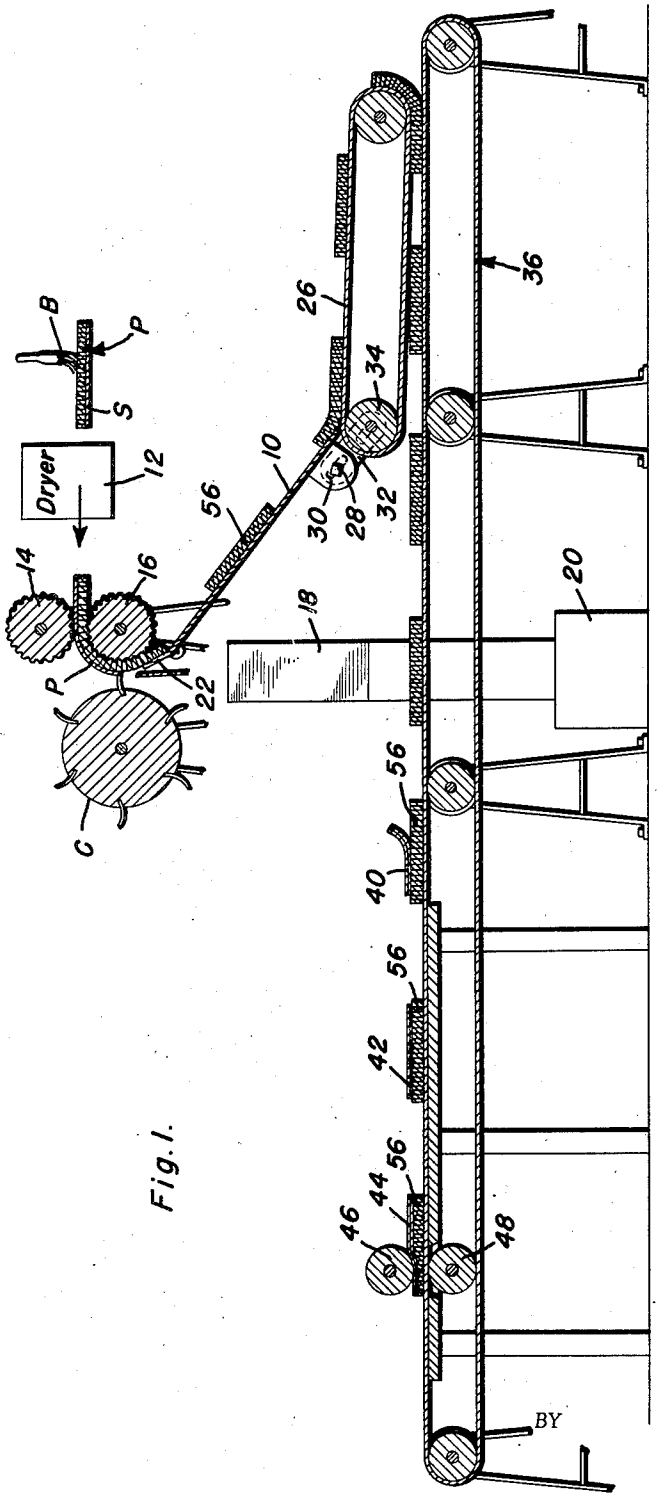


Fig. 1.

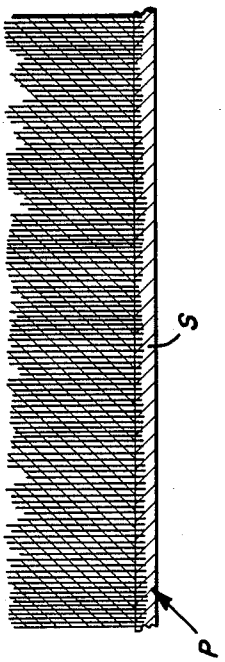


Fig. 2.

INVENTOR
Joseph L. Vandeweghe
Donald Spiro
His ATTORNEY

BY

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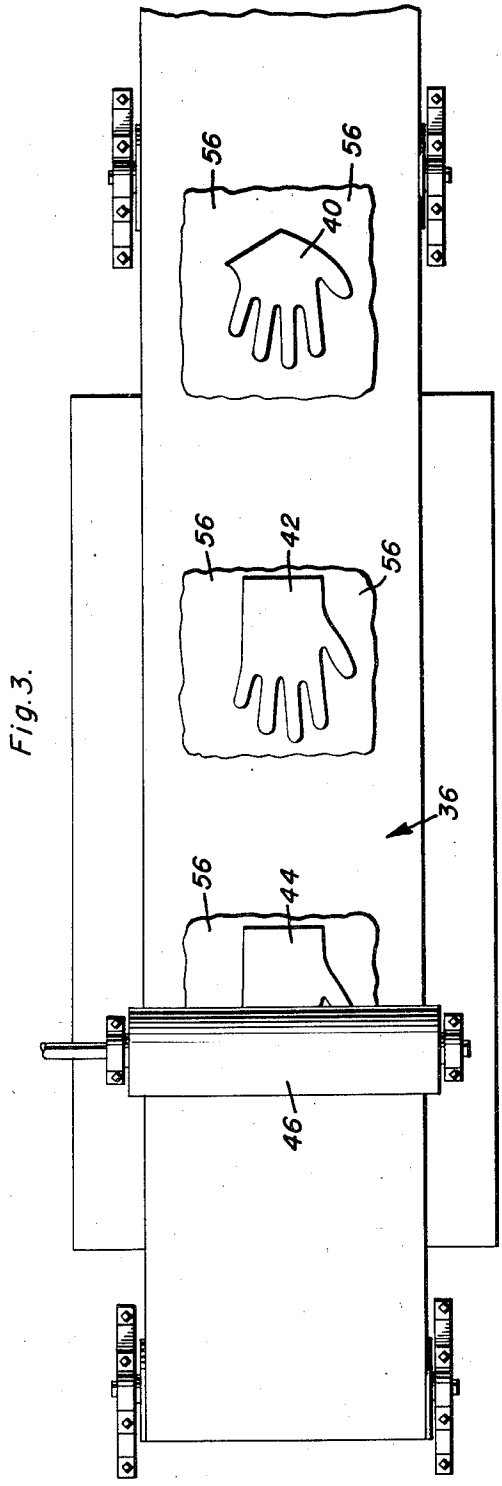


Fig. 3.

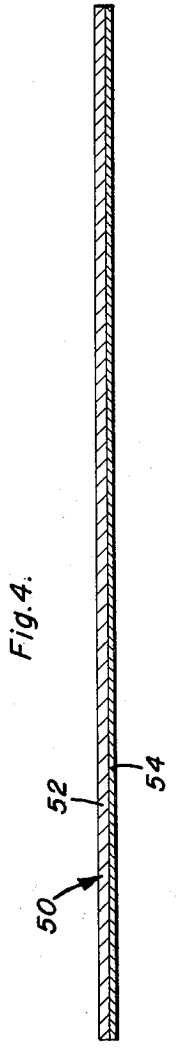


Fig. 4.

INVENTOR
Joseph L. Vandeweghe
Ronald Smith

BY His ATTORNEY

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Fig. 5

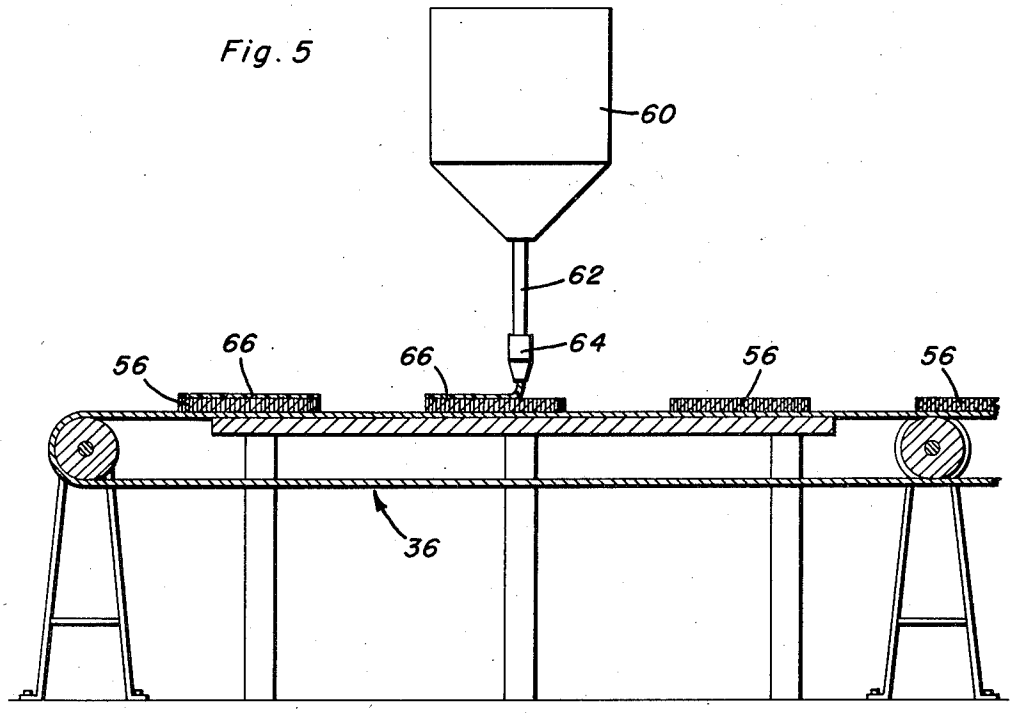


Fig. 6

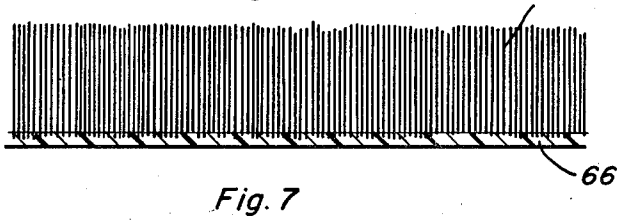
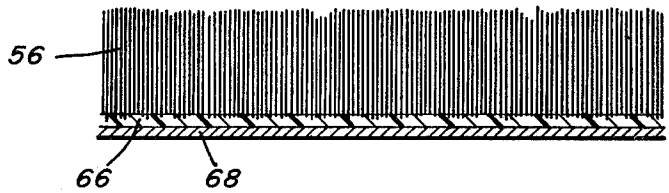


Fig. 7



Joseph L. Vandeweghe
INVENTOR

BY Ronald Smith
His Agent

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2,786,791

METHOD OF TRANSFERRING CUT FUR TO A BACKING

Joseph Vandeweghe, New York, N. Y., assignor of thirty-seven percent to said Joseph Vandeweghe, thirteen percent to Stanley H. Katz, eighteen percent to Robert Vandeweghe, eleven percent to Charles Vandeweghe, eleven percent to Ernest Vandeweghe, and ten percent to Charles A. Ragan

Application December 11, 1953, Serial No. 397,579

15 Claims. (Cl. 154—77)

This is a continuation-in-part of my copending application Serial Number 277,950 filed on March 22, 1952, now abandoned.

This invention relates to a method or process of making semi-artificial fur seamless material or patterned pieces from a natural fur pelt or a number of pelts by using the hair from the pelts, retaining the natural organization and arrangement of animal hair in the finished product.

Those skilled in this art readily appreciate the limitations in the use of fur for garments, trim material and the like. Among many others are the impossibility of washing it, the expense in some instances, incorrect density of hair, and others. It is the object of this invention to teach a method of making semi-artificial fur, that is natural fur but unnatural backing for the hair is used, which can be washed without injury thereto, which is more inexpensive than natural fur but is in appearance much like a natural fur since the same organization of real fur or hair is maintained.

Often a low grade of pelt must be discarded or used in such capacity as to be almost valueless. In those instances where the cause of the low classification is the sparseness of hair, the present method provides a correction making it possible to salvage much material. Accordingly, it is an object of this invention to provide the teaching of a step which increases the density of hair that will be used in the finished product. Conversely, if desired, a very dense pelt may be stretched over a larger area by decreasing the density of hair prior to application of a backing upon it. The above mentioned step with its alternatives make it possible to regulate the quality factor of the finished product depending upon the volition of the person practicing the invention.

A more specific object of the invention is to apply a coagulant to the hair side of a fur pelt, the coagulant being flexible and pliable, remove the leather skin from the pelt, thereafter slide the remaining coagulated hair down a slippery surface, the inclination of which is adjustable to cause the coagulated hair to crowd together or stretch, turn the coagulated hair over so that the roots of the hair are exposed upwardly and at the same time again control the crowding and stretching of the coagulated hair, applying a pre-cut sheet of backing having an adhesive face on the root ends of the coagulated hair, and finally apply heat and/or pressure to the backing to complete bonding between the fur hair and the backing. The crowding or stretching of the coagulated hair may be accomplished by actuating conveyors that successively transport the hair at different relative speeds.

Another object of the invention is to provide the backing of the previously described article and made by the above method, by spraying a suitable plastic directly upon the coagulated assembly of hair, the plastic material being any one of the large number of those commercially available, which are thermoplastic or normally in the liquid state and air dry to a pliable film attached to the hair.

Another object of the invention is to provide a method, the practice of which avoids the necessity of having to cut the fur piece, which operation is difficult and which often reduces the value of the cut fur, by pre-cutting the backing sheet to pattern size and shape prior to applying the backing sheet to the fur.

Ancillary objects and features such as being able to produce the finished product in any degree of pliability by selection of backing, and the production of any length and width of products, will become apparent in the following description of the specifically disclosed form of invention.

In the drawings:

Figure 1 is a schematic flow diagram showing the essential parts of the method in practice.

Figure 2 is a sectional view of a pelt after applying the coagulant to it.

Figure 3 is a fragmentary top view showing the coagulated fur as it is receiving a typical backing.

Figure 4 is a sectional view of one selected backing sheet.

Figure 5 is a fragmentary schematic view of the flow diagram of Figure 1, showing the spraying of a backing on the coagulated hair assembly.

Figure 6 is a fragmentary sectional view of a fur sample with a plastic backing.

Figure 7 is a fragmentary sectional view of another fur sample with a laminated backing consisting of a layer of plastic and a layer of cloth.

Although I have illustrated only two apparatus capable of practicing the method to be described in detail, there are a great number of alternative structures which can be used, and the method may be practiced by hand.

A common, ordinary pelt, for example a rabbit, sheep or lamb, or other fur bearing animal pelt, is to be considered, it being obvious that any pelt may be used. After initial preparation for softening and cleaning, a coagulant is manually or mechanically brushed by brush *b*, on the hair of the pelt *p*. The coagulant may be a solution of glucose or any other pliable, flexible and soluble coagulant, several of which are commercially available at this time. The purpose of this coagulant is to hold the fur hair in place while the leather skin *s* of the pelt is being cut therefrom, and to give added weight which improves the rate of descent down the slide **10**. After applying the coagulant, the pelt *p* is allowed to dry naturally or this step is accelerated by passing the pelt *p* through a dryer **12** or under a bank of heaters such as infrared lamps or heat coils. After drying, if it is determined that the coagulant is heavier than necessary for the type of pelt being treated, the skin may be brushed to remove some of the coagulant.

Next, the coagulated pelt is fed between the juxtaposed fluted rollers **14** and **16** which feeds the pelt *p* to the cutter *c* that removes the skin *s* from the pelt, the coagulated hair being held in place in its natural, original arrangement and organization by the coagulant. The cutter and the feed rollers are of the type known in the art for removing the skin from the pelt. The skin is shredded in this operation and the residue falls in a chute **18** for reception in a container **20**. As the coagulated hair passes around the roller **16**, it is guided by the plate **22** upon the slide **10** having a smooth surface, whence it descends at a rate controlled by the angle of inclination of the slide. This angle may be varied by changing the included angle between the slide **10** and a conveyor **26** at the discharge end of the slide. Such an angle change may be arrived at by a variety of means such as mounting the slide on pivot bolts **28** having nuts carried in slots **30** which are formed in links **32** that hold the lower end of the slide **10**. If the conveyor roller **34** is also carried

by these links, the conveyor 26 may be adjusted to correspond to the adjustment of the slide. Alternatively, the slide angle may be adjusted by the simple expedient of providing vertical screws in it to serve as feet at the lower end thereof.

If the slide is angled steeply, the coagulated fur hair will descend rapidly and compact as it strikes the conveyor 26. But if the slide 10 is angled less steeply, the rate of descent will be lower and assuming constant conveyor speed, the coagulated assembly of hair will be stretched due to the pulling effect of the conveyor on the coagulated hair. This is possible because of the presence of pliable and flexible coagulant, and accordingly, the density of the hair may be selectively regulated, while retaining the original arrangement of hair.

During the above operation, the root ends of the hair are down, that is, the coagulated hair is supported by the root ends of the hair. But to inspect the hair, it is necessary to see the root ends of the hair, and the next procedure is to turn the coagulated hair over so that the root ends thereof are exposed upwardly. This is done by locating a conveyor 36 with its upper flight below the conveyor 26, the confronting and adjacent flight of the conveyors 26 and 36 operating in the same direction. Hence, when the coagulated hair falls from the conveyor 26 upon the conveyor 36, it is reversed with the root ends of the hair facing upward, in lieu of or in addition to the density control step described previously, the relationship of the conveyors 26 and 36 may be used to control the density of fur hairs. If the speeds of the conveyors 26 and 36 are identical there will be no compacting or stretching of the hair assembly and therefore the density will be unchanged as the coagulated hair is transferred from one conveyor to another. However, by increasing the speed of the conveyor 36, the density may be decreased because less hair is fed than is capable of being handled. Selectively, by decreasing the speed of conveyor 36 with respect to the other conveyor, the density will be increased due to the compacting of the hair assembly at the inlet part of the conveyor 36.

Now, the coagulated hair is ready to have a backing sheet applied. Arbitrarily a glove backing sheet 40 has been selected for illustration. One sheet 40 is shown being applied to the fur, the sheet 42 already applied to the fur, and sheet 44 being heated and pressed by the heated roller 46 mounted above the roll 48 of the conveyor 36, by placing the backing sheet upon the coagulated hair manually, several backing sheets may be arranged on a single hair assembly in order that there be as little waste as possible. That hair which is not used may be saved and used for other commercial purposes.

The backing sheet may be selected from a large number of available fabrics, such as, nylon, plastics, hides, and others depending upon the quality and character desired in the finished product. A typical backing sheet 50 is shown in Figure 4. It includes the sheet 52 together with a layer 54 of pressure and/or heat sensitive adhesive of any known type. The adhesive surface of the backing sheet is placed upon the upwardy exposed root ends of the coagulated hair or hair assembly 56 as shown in Figures 1 and 3. If a heat sensitive adhesive is used, the roller 46 will be heated, if a pressure sensitive adhesive is used, the roller 46 will be used only to exact a pressure on the backing.

In Figure 7 the assembly 56 is shown with two backing panels on it. The panel 66 is secured to the fur of the assembly, and on panel 66 there is fixed a fabric panel 68. The purpose of this organization is to show that the backing may be a single material or a plurality of materials used in a laminar fashion.

Instead of machine or manually applying a backing to the assembly 56, a backing may be sprayed on the hair of the assembly 56. In Figure 5 the apparatus of Figure 1 is partially reproduced with a slight structural modification. There is a tank 60 containing a vinyl plastic or some other type of plastic and it is to be conducted through conduit 62 to discharge nozzle 64. The nozzle is directed toward the upper surface of conveyor 36 on which the assemblies 56 are disposed. Thus, as coagulated hair assemblies are conveyed under nozzle 64, they are sprayed with the plastic material which becomes plastic backing 66. Obviously, the use of valves to control the actual flow and/or rate of flow from nozzle 64 may be resorted to.

After the backing has been applied by hand, machine or spraying, the finished product may be treated for finishing purposes, such as dyeing, cleaning out the coagulant, fluffing and other known operations such as stenciling and plucking.

It is apparent that various changes may be made without departing from the scope of the following claims.

What I claim is:

1. The method of applying fur to a backing comprising the steps of applying a coagulant to the hair of a pelt, removing the skin from the pelt thereby leaving the hair of the pelt in an orderly coagulated assembly, selectively controlling the density of the hair while the hair is in the coagulated state, placing the backing upon the hair of said assembly, and securing the backing upon said assembly of hair.

2. The method of applying fur from a pelt to a backing sheet comprising the steps of flexibly binding together the hair of the pelt near the roots thereof, removing the skin from the pelt thereby leaving the hair of the pelt in its orderly original assembly, selectively controlling the density of the hair while the hair is flexibly bound together, reversing the hair of the assembly so that the root ends are upwardly exposed while the entire assembly of hair is supported on its front surface, and then securing the backing sheet to the upwardly exposed root ends of the hair of the assembly.

3. The method of claim 2 wherein the density of hair in the flexibly bound state is varied prior to the securing of the backing sheet to the root ends of the hair so that the hair density factor of the finished product may be altered.

4. Method of removing hair from a fur pelt and applying it to a backing comprising the steps of applying a coagulant to the hair while it is still held rooted in the skin of the pelt for the purpose of holding the hair substantially in its natural arrangement, removing the skin from the hair and coagulant thereby leaving the hair substantially in its original arrangement with the root ends of the hair supporting its weight, controlling the density of hair by selectively compacting or stretching the coagulated hair assembly, turning the assembly of hair so that the root ends of hair are facing in an upward direction, and then fastening the backing the root ends of the hair.

5. The method of making an artificial pelt from the hair of a natural pelt while preserving the general organization and arrangement of hair placement of the natural pelt comprising the steps of flexibly conjoining the hair of the natural pelt and then cutting the natural skin from the hair at the roots thereof in order to leave the hair of the natural pelt remaining in its natural organization, sliding the conjoined hair down an inclined surface, selectively stretching or compacting the hair of the natural pelt by varying the angle of inclination of said surface to control the density of the hair while the hair is in the flexibly conjoined state, and then applying a backing to the root ends of the hair.

6. The method of making an artificial pelt from the hair of a natural pelt while preserving the general organization and arrangement of hair placement of the natural pelt comprising the steps of flexibly conjoining the hair of the natural pelt and then removing the skin from the hair at the roots thereof in order to leave the hair of the natural pelt remaining in its natural organization, selectively stretching or compacting the hair of the na-

ural pelt while the hair is in the flexibly conjoined state to control the density of the hair, placing a pre-cut pattern backing together with a pressure and heat sensitive cementitious product upon the root ends of the hair, and applying pressure and heat to the backing to squeeze it tightly against said hair root ends.

7. In the method of transposing natural fur hair from a pelt to a backing sheet, the steps of flexibly and pliably conjoining the hair of the pelt to form a mass of coagulated hair in its natural arrangement, cutting the leather skin of the pelt from the coagulated hair, and selectively increasing or decreasing the density of the hair in the mass of coagulated hair by respectively compacting or stretching the coagulated mass of hair.

8. In the method of transposing natural fur hair from a pelt to a backing sheet provided with an adhesive layer, the steps of pliably conjoining the hair of the pelt to form a mass of coagulated hair in its natural arrangement, cutting the leather skin of the pelt from the coagulated hair, selectively increasing or decreasing the density of the hair in the mass of coagulated hair after removal of said skin by respectively compacting or stretching the coagulated mass of hair, and applying the adhesive layer of the backing sheet on the root ends of the hair of the coagulated mass of hair.

9. The method of claim 8 and the step of drying the mass of coagulated hair prior to removing the leather skin of the pelt.

10. The method of claim 8 wherein the mass of coagulated hair is turned root ends upwardly to expose the root ends of the hair on which the adhesive layer is placed, whereby the root ends of the hair are arranged for inspection prior to applying the backing sheet upon the mass of coagulated hair.

11. The method of making an artificial pelt from the hair of a natural pelt while retaining the general organization and arrangement of hair placement of the natural pelt, said method comprising the steps of flexibly conjoining the hair of the natural pelt, cutting the skin from the hair at the roots thereof thereby leaving remaining the conjoined hair, sliding the conjoined hair down an inclined surface, adjusting the inclination of said surface to thereby regulate the stretching and compacting of the conjoined hair while the hair is in the flexibly conjoined state, conveying the conjoined hair to a station at which the conjoined hair is reversed thereby turning the root ends of the hair upward, further conveying the conjoined hair in the root end upward position, and providing a backing on the root ends of the conjoined hair.

12. The method of assembling the hair of a fur pelt into an artificial fur panel which includes the natural fur hair in its general natural organization, said method comprising the steps of applying a coagulant to the hair of the pelt, and removing the skin from the pelt thereby leaving the hair of the pelt in an orderly coagulated assembly, controlling the density of the hair while the hair is in the coagulated state, and spraying a backing upon said assembly of hair.

13. The method of claim 12 wherein said assembly is conveyed while it is being sprayed, and the backing which is sprayed on said assembly is a plastic material.

14. The method of assembling the hair of a fur pelt into an artificial fur panel which includes the natural fur hair in its general natural organization, said method comprising the steps of applying a coagulant to the hair of the pelt, and removing the skin from the pelt thereby leaving the hair of the pelt in an orderly coagulated assembly, conveying the assembly on sucessive conveyors, selectively stretching or compacting the hair of said assembly while in the coagulated state by actuating the conveyors at different relative speeds thereby controlling the density of the hair, and applying a backing on the hair of said assembly.

15. The method of claim 14 wherein the step of applying a backing on the assembly comprises the spraying of a liquid plastic material on the hair of said assembly.

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