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FINISHING PROCESS FOR FELT AND FELT HAT BODIES

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Fig. 1

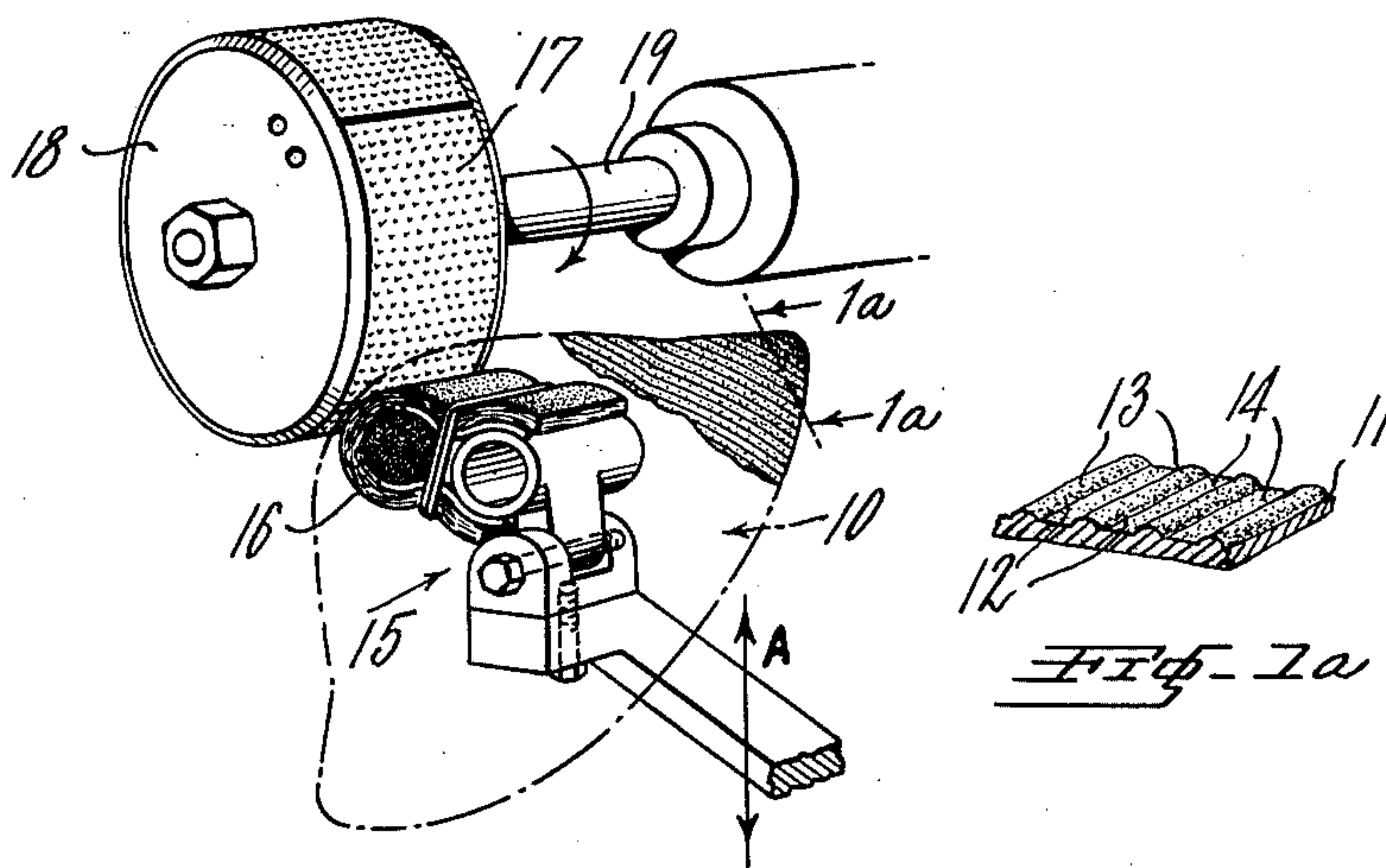


Fig. 1a

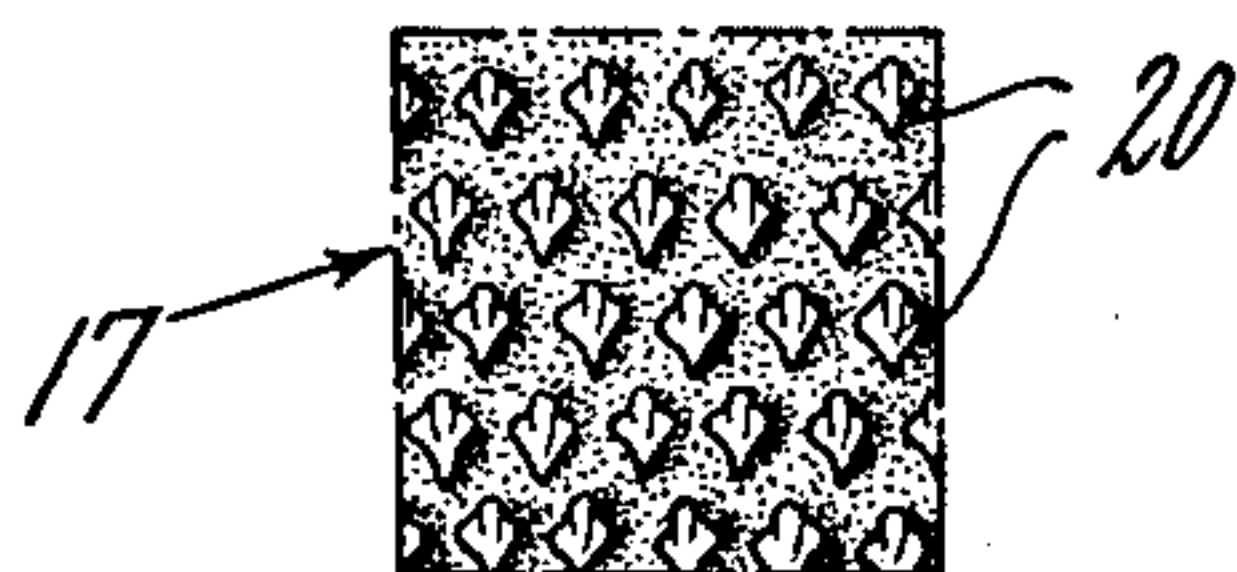


Fig. 2

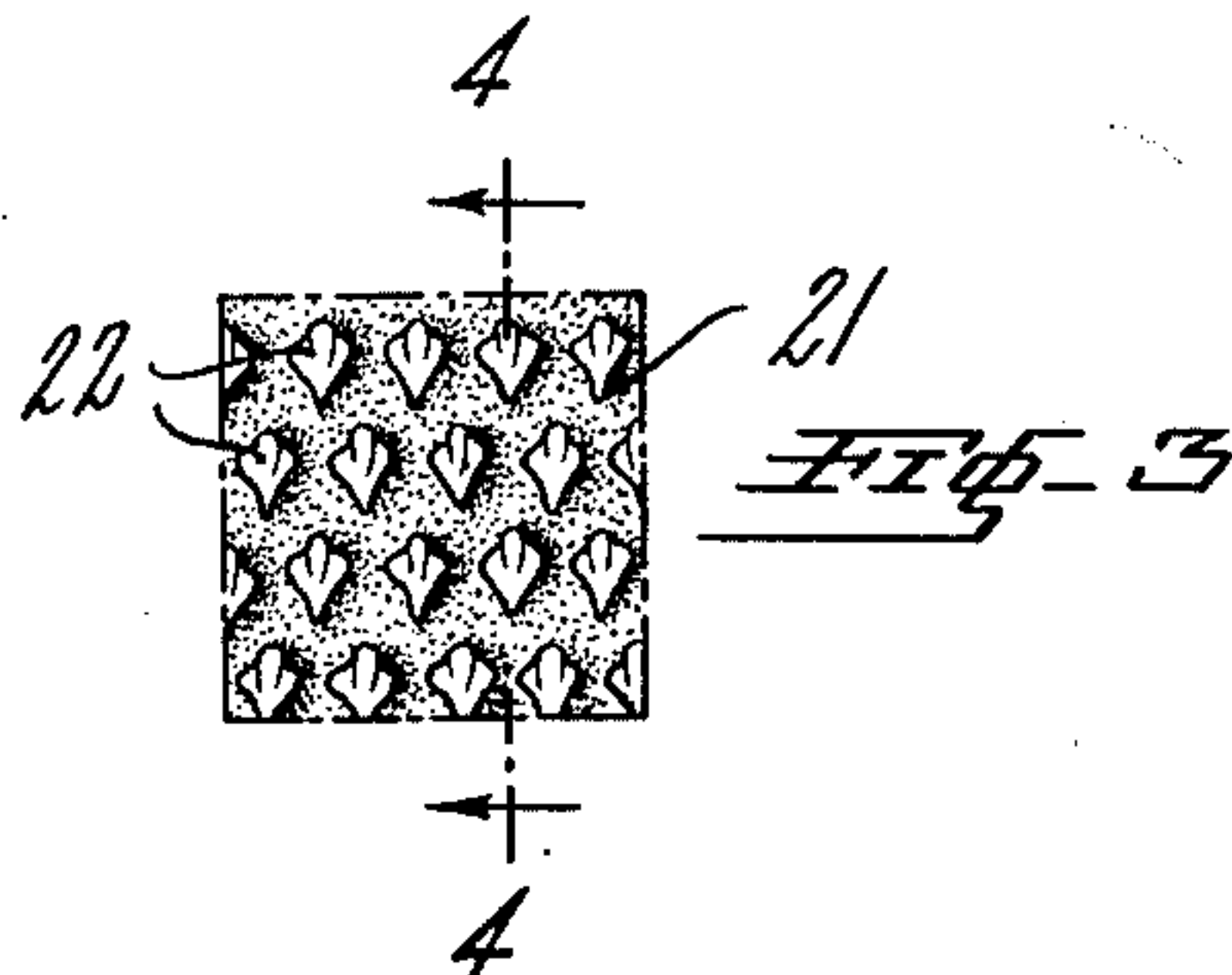


Fig. 3



Fig. 4

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## UNITED STATES PATENT OFFICE

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FINISHING PROCESS FOR FELT AND FELT  
HAT BODIES

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1 Claim. (Cl. 223—20)

1

This invention relates to a finishing process for felt or felt hat bodies, and in particular to a velour finishing process of embossed hat bodies.

It is one of the objects of the invention to provide a process for facilitating penetration of working tools into the interstices appearing on embossed hat bodies, so as to obtain a uniform and smooth surface finish.

It is another object of the present invention to provide a process for ensuring a high lustre and silky finish on hat bodies and like articles whereby the treatment of the same may be effectuated within a relatively short time of operation.

Still another object of the present invention is the provision of a process for permitting the obtainment of a product having a perfect velour finish notwithstanding the fact that the product does not have a continuous and uninterrupted surface.

Yet a further object of the present invention is to provide a process for ensuring the working of the felt hat body during finishing operations in a predetermined manner and without injury to the felt hat body or similar article so that the thickness thereof will always be maintained uniformly.

With the above and other objects in view, the invention will be hereinafter more particularly described and the combination and arrangement of parts will be shown in the accompanying drawing and pointed out in the claim which forms part of the specification.

In the drawing:

Fig. 1 shows schematically and somewhat in perspective a portion of a hat working machine with a support for the hat body;

Fig. 1a is a fragmentary, sectional view taken along line 1a—1a of Fig. 1 and illustrating in perspective the particular hat body profile;

Figs. 2 and 3 show two different naps of sharkskin covering used in connection with the working of the hat body during the processing steps;

Fig. 4 is a sectional view taken along line 4—4 of Fig. 3.

Referring now more particularly to the drawing and the operational steps applied to felt hat bodies, it will be well understood that the felt hat body is first placed into a pressing machine in which the hairs or fibers of the hat body are subjected between male and female dies to a pressure of about 200 to 250 lbs., whereby through the action of said dies a pattern on the surface 11 of the felt hat body 10 is attained having interstices 12 between relieved and pref-

2

erably strip-shaped portions 13, as may be visualized from Fig. 1a, showing on an enlarged scale a piece of hat body 10.

After the felt hat body has received its pattern with strip-shaped relieved portions 13, the body is then first subjected to a pouncing operation whereby the body is held on a swingable and up- and downwardly movable support 15 (see arrow A) having a yieldable, rounded rubber or like holder surface 16 on which the hat body 10 is guided and pressed against a fine sharkskin working surface 17 placed on a sheave or wheel 18 which is driven from a suitable shaft 19 at 500 to 700 R. P. M. The teeth 20 of the fine sharkskin surface 17 are so arranged that they penetrate, when moved contrary to the nap of the sharkskin surface, the surface of the felt hat body 10 to a certain depth whereby preliminary opening of the fibers and preparing of the body surface for the velour finishing step takes place. It is preferred to employ a sharkskin surface having approximately 400 to 500 teeth per square-inch and which surface is substantially rigid or somewhat yieldably affixed whereby damage to the embossed pattern will be effectively avoided.

The hat body surface is then subjected to the treatment by a coarser sharkskin surface 21 with teeth 22 of approximately 300 to 350 teeth per square-inch. This sharkskin surface is attached to a similar sheave as that described with respect to wheel 18.

This sharkskin surface is rotated at 1500 to 2000 R. P. M. and penetrates deeply into the hat surface pattern whereby the strip-like portions 13 thereof as well as the areas 14 of the recesses or interstices 12 are pounced and sufficiently opened for the ensuing operational steps.

Thereafter the hat surface is subjected to application of steam to thereby obtain a swelling and raising of the fibers whereby the design of the embossed pattern becomes more clear and distinct. Subsequently to this step, the surface of the felt hat body is treated with compressed air to produce a nap thereon and to blow out those fibers which become loose during the pouncing with the fine sharkskin surface.

The felt hat body is then clipped by suitable shears which are employed to equal the rough nap and to cut the fibers or hairs to uniform level.

After this clipping operation it is optional to subject the hat body to a buffing or brushing operation, preferably in both directions (in the direction of the nap and contrary thereto) in



3

order to get the fibers or hairs in upright position, a stiff bristle brush or preferably a brush effectuating an electrostatic effect on the fibers being employed whereby the same are raised.

The hat body is thereafter subjected to a polishing and buffing operation by permitting the fine teeth sharkskin surface to act against the nap of the latter from the brim to the crown of the hat body and in reverse from left to right and from right to left. Thereafter, the hat body is again treated with compressed air and finally a fine clipping or shearing operation is performed on the surface of the prepared hat body to bring about a perfect and uniform velour finish.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the process and article derived therefrom will be readily understood by those skilled in the art to which the invention pertains; and while there have been described the principles of the process which may be considered to be the best embodiment of the invention, it is to be understood that the process described is merely illustrative and that such changes may be made as are within the scope of the appended claim.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent is:

The process of treating embossed felt hat bodies having interrupted surface portions with

4

relieved and recessed areas; comprising the subsequent operational steps of first subjecting the hat body to a pouncing treatment against the nap of sharkskin surface having approximately 400 to 500 teeth per square inch and rotating approximately at 500 to 700 revolutions per minute to thereby preliminarily penetrate and open the fibrous surface of said hat body, thereafter exposing the hat surface to the action of a sharkskin surface and against the nap of the same having approximately 300 to 350 teeth per square inch and rotating at approximately 1500 to 2000 revolutions per minute, whereby the fibrous hat surface is more readily and sufficiently opened for the ensuing step of steaming the hat surface, thereafter treating the latter with compressed air, clipping and equalizing the raised fibers of the hat surface, and finally buffing and polishing said hat body surface by subjecting the same to the action of the first-named sharkskin surface and in the direction of the nap thereof.

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The following references are of record in the file of this patent:

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