

# UNITED STATES PATENT OFFICE.

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## PROCESS OF PREPARING FUR FOR FELTING.

SPECIFICATION forming part of Letters Patent No. 339,349, dated April 6, 1886.

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*To all whom it may concern:*

Be it known that we, EDMUND TWEEDY, a resident of the town of Danbury, in the county of Fairfield and State of Connecticut, and HENRY L. BREVOORT and ISAIAH L. ROBERTS, residents of the city of Brooklyn, county of Kings, and State of New York, all citizens of the United States, have invented a new and Improved Process for Preparing Fur for Felting, of which the following is a full, clear, and exact description, which will enable others skilled in the art to which it appertains to practice and use the same.

It has been the custom for many years to prepare fur for felting by treating it while on the skin with a solution of nitrate of mercury.

Our invention dispenses with the use of mercury and overcomes the injurious effects upon the workmen due to the use of this material, while at the same time it puts the fur in an equally good condition for felting.

With our process we proceed as follows: The fur, preferably upon the pelts, is put into a tumbling-barrel or other suitable receptacle. In this tumbling-barrel is also placed powdered pumice-stone, powdered silica, (such as is usually bought in the market,) or any other powdered material which will act to abrade or remove the surface of the fur, or, more strictly speaking, as we understand it, the material which covers the surface of each fiber of the fur. The tumbling-barrel is then set in motion, and the skins, with the fur upon them, are thoroughly tumbled about in the barrel with the finely-powdered material or materials. Sufficient powdered material is put into the barrel, so that preferably at the end of the tumbling operation a substantial quantity will be left free in the barrel. A certain quantity will be mixed with the fur, and it is our object to use preferably more material than the fur can hold or take up in this way. The skins, with the fur upon them, are then taken from the tumbling-barrel, the adhering powdered material mixed with the fur is preferably dusted out, and the fur is cut from the skin or skins, after which it may be felted in the usual manner.

We have found that a slight addition of powdered air-slaked lime or potter's clay to

the silica or pumice-stone is advantageous. We prefer, also, to place in the barrel, with the fur and powdered materials, marbles, or pebbles, or other hard substances—such as small iron balls—say one-quarter of the bulk of the mass put in the tumbling-barrel, exclusive of the fur and skins. This addition gives advantageous results, especially with those furs which would usually require the greatest amount of carroting.

The time of treatment required to bring the fur into the best condition for felting will vary largely with the circumstances of the case, the effect being produced, as we understand it, through the particles of the powdered material (such as silica) rubbing off the coating on the fibers, while the lime, when used, absorbs the grease, and the balls beat the powder against the coating on the fibers. Less time will be required when larger quantities of the powdered material are used in proportion to the mass of the fur than when smaller quantities are used. A rapid movement of the tumbling-receptacle will produce the required effect quicker than a slow one, provided the movement is not so rapid that the articles will be held against the sides of the receptacle by centrifugal force.

Different kinds of fur require different treatment in degree—as, for instance, the fur of the hare requires a longer treatment than the fur of the cony, and the fur of the nutria more than that of the hare. Some lots of fur will require more treatment than other lots of the same kind of fur, it being generally the case that the longer the time that the skins have been removed from the animals the less treatment they will require. Tumbling prolonged beyond the time necessary to remove the coating injures the fur, especially if large masses of the powdered materials are used.

We have found that the best results are produced by practicing our invention in substantially the manner following: One hundred skins of the Scotch cony, weighing, with the fur on, about fourteen pounds, together with ten pounds of powdered silica and one pound of powdered lime and about one quart of marbles or pebbles, are placed in a tight barrel of about forty-five gallons' capacity, which is provided

with trunnions resting in boxes in a supporting-frame, and with a door which is held securely in position; and the joint between the door and the barrel is a tight one, so as to prevent the escape of the powder. The barrel is then caused to rotate by any convenient means for eight hours, rotating at a speed of about twenty-five revolutions per minute. The skins, with the fur upon them, are then removed from the barrel and dusted to remove the adhering powder. The fur is then cut from the skins in the usual manner. The powdered silica and lime remaining in the barrel, and also that which is dusted off may be used again with other skins. The proportion of lime or potter's clay may be varied. Other devices which will bring such powdered materials as we have described, or their equivalents, into intimate moving contact with the fur might be used. Any powdered material—such as chalk—may be used with advantage in place of lime or potter's clay or fuller's earth. By "absorbent material" we mean one that will absorb or unite with the greasy or gummy matter which coats each fiber of the fur.

The fur prepared by our process makes a finer, softer, and better felt than when prepared with nitrate of mercury, and the danger to the workmen from the use of that article is avoided.

Our theory is, that there exists upon the surface of the fur some kind of material which prevents the hot water from penetrating to the fur itself, which is removed wholly or in part by the process described, and that when the material is removed, wholly or in part, the fur will be brought into the proper condition for felting. However, whether this theory is right or wrong, the advantageous results referred to herein will be attained by the practice of our process as described.

We intend to use either the abrading powder alone or mixed with the absorbent material, and either or both in connection with or without the marbles.

If a tumbling barrel or box is used, pegs may be inserted in its interior, which will cause the skins to be tumbled about.

What we claim, and desire to secure by Letters Patent, is—

1. The process of preparing fur for felting, which consists in subjecting the same to the action of finely-powdered materials, substantially in the manner described.

2. The process of preparing fur for felting by subjecting it to the action of finely-powdered materials—such as silica mixed with lime—substantially as described.

3. The process of preparing fur for felting, which consists in treating the same by the use of finely-powdered materials in a tumbling-barrel while the fur is still upon the skins, then subsequently cutting the fur from the skins, and, lastly, felting the same in the usual manner.

4. The process of preparing fur for felting by treating it with a mass of powdered material, which mass is composed of powdered absorbent material, substantially as described.

5. The process of preparing fur for felting, which consists in treating it with powdered materials, substantially as described, when the same is mixed with hard bodies—such as pebbles, marbles, or the like—substantially as described.

6. The process of treating or operating on fur, as herein described, which consists in first tumbling it in a suitable receptacle in the presence of finely-powdered material (in excess of what the fur will take up) adapted to attack or cleanse the surface of the fibers or remove their anti-felting coating, then dusting out the powdered material, and then felting the fur in the usual manner.

7. As a new article of manufacture, fur prepared for felting in the manner herein described.

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Witnesses:

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