

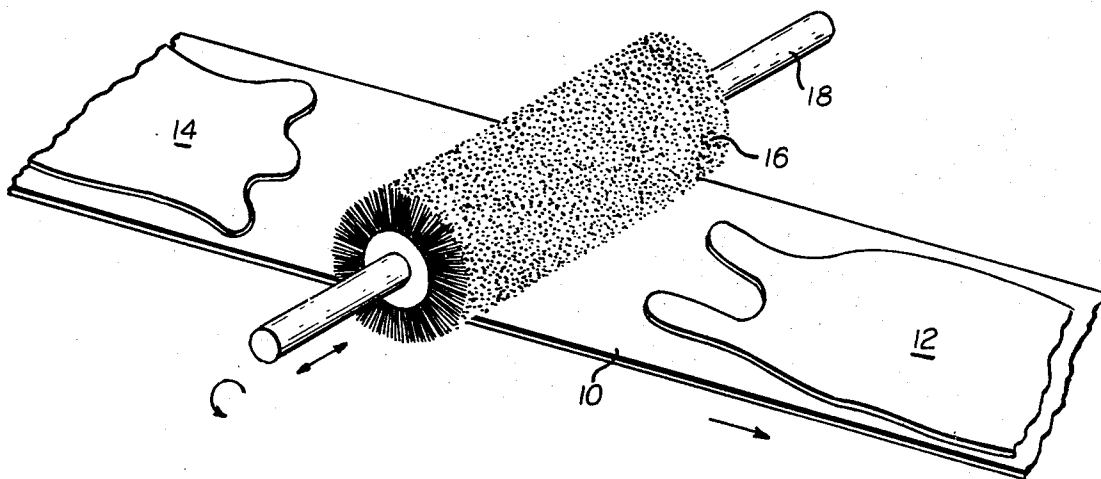
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PROCESS FOR RUBBING DRESSINGS ON NATURAL LEATHER

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1

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## PROCESS FOR RUBBING DRESSING ON NATURAL LEATHER

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3 Claims

### ABSTRACT OF THE DISCLOSURE

Process for rubbing liquids, dressings or waxes on the surface of flat objects, such as pieces or strips of leather and linoleum, characterized in that these strips or pieces are carried on a conveyor belt over which a cylindrical brush, rotating and simultaneously vibrating in the transverse direction, is disposed at right angles in such a manner that the bristles of the brush contact the surface of the flat object. For leather, the brush frequency of vibration is about 12 to 16 vibrations per second and the amplitude about 1 to 25 mm., and the belt speed is about half the brush peripheral speed, the bristles moving in the same direction as the belt when they contact the leather.

The present invention relates to a process and apparatus for continuously buffing or brushing a dressing on the surface of a moving flat object.

In the manufacture of leather, after the hides have been tanned they are sprayed with a dressing. This dressing is then rubbed in and buffed to a luster and/or uniform thickness by hand with rags or brushes. This manual procedure is very expensive and time-consuming, and so it has previously been proposed to do the rubbing with the aid of cylindrical brushes.

It has been found that rotating cylindrical brushes do not perform the rubbing adequately. By arrangement of a plurality of revolving cylindrical brushes over a conveyor belt on which the tanned hides are carried the rubbing action can be improved, yet the results are not as good as can be achieved by hand rubbing. Moreover, frequently the individual hides are crumpled up and rolled on the conveyor belt as a result of the brushing action.

It is accordingly an object of the invention to provide a process and apparatus whereby dressed flat objects such as hides or sheets, moved along on a conveyor, can be buffed to form a layer of uniform thickness and/or of high luster rapidly and continuously without interruption or frequent assistance by an operator.

This and other objects and advantages are realized in accordance with the present invention which couples a conventional rotating cylindrical brush, disposed above and transversely to, i.e. at a right angle to, the direction of movement of a conveyor belt, with a shaking or vibrating mechanism which vibrates the brush in axial direction about 12 to 16 times per second at an amplitude of about 1 to 25 mm. In this manner, two components of movement cooperate, one the regular rotation of the brush and the other the transverse vibration just described.

The invention will be further described with reference to the accompanying drawing wherein the sole figure is a schematic perspective view of the process and apparatus.

In the figure there is shown a continuous conveyor belt 10 moving downwardly to the right in the direction shown by the arrow. As shown, the belt carries hides 12, 14 thereon to which a dressing such as wax has been applied (not shown). Positioned above the belt 10 is a cylindrical brush 16 carried on a shaft 18. The shaft is parallel to the conveyor belt and spaced above it just so far that the

2

bristles contact the top of the belt or the sides carried thereon. The shaft 18 extends transversely of, in this case at a right angle to, the direction of advance of the belt. The shaft is rotated in the direction indicated and simultaneously is vibrated in axial direction, as shown. The apparatus for setting the brush in transverse vibration can be the same as is used in vibrating sieves. Vibrating apparatus commercially available also permits a greater variation of the number of vibrations per second and of the amplitude. For the rubbing of dressing on leather a frequency of about 12 or 16 vibrations per second and an amplitude of about 10 to 15 mm. are generally suitable. It is also possible, however, by means of the vibrating cylindrical brushes to treat other flat products, such as linoleum, which are provided with a dressing or other finish. In this case it may be preferable to use a different frequency and amplitude.

The optimum in each case can be determined for the product in question by simple preliminary tests. In the treatment of leather surfaces, the cylindrical brush advantageously is provided with nylon bristles, for example, of a length of about 10 to 20 mm. and a thickness of about 0.10 to 0.15 mm. The surface of the cylinder is preferably uniformly and densely covered with bristles, e.g. about 200 to 1000 and preferably about 500 per square centimeter.

The direction of rotation of the cylindrical brush in the treatment of tanned hides should be the same as the direction of movement of the conveyor belt, i.e. at the instant in which they contact the surface of the belt or of the broad workpiece lying thereon, the bristles of the brush are moving in the same direction as the belt. Of necessity the cylindrical brush must run substantially faster than the conveyor belt, because if the conveyor belt and brush speed were the same at the amount of contact, the rubbing action would be too slight, since then only the transverse movement of the cylindrical brush would be effective.

For the buffing effect it is basically immaterial whether the cylindrical brush rotates in the same direction as the conveyor belt or contrary thereto. In the treatment of leather, however, the pieces of leather tend to be lifted up at the edges or marginal areas if the directions of movement of the belt and brush are opposed. In this case, therefore, movement in the same direction is preferred, but at different speeds, the brush preferably moving at a higher peripheral speed. In the treatment of continuous bands of material such as continuous linoleum material, however, the direction of movement of belt and brush can be as desired.

Only through the additional cross-movement or axial movement of the cylindrical brush in conjunction with its peripheral speed does it become possible to treat tanned hides in such a manner that the dye or dressing that is sprayed on, or the paste, is uniformly rubbed out over the leather surface, without rub-offs or pile-ups or streaks. The leathers furthermore stay down flat on the conveyor belt, i.e., they are no longer crumpled up by the rotating cylindrical brush or lifted up from the belt. The speed of the conveyor belt advantageously is about 5 to 30 meters per minute and preferably about 20 or 25 meters per minute. The peripheral speed of the cylindrical brush can be from about 15 to 90 meters/minute, advantageously about 25 to 50 and preferably about 40 meters per minute, i.e. about twice the conveyor speed.

The invention is further described in the following illustrative example.

### EXAMPLE

Tanned hides are sprayed with wax, the wax allowed to dry, and placed on a conveyor as shown in the drawing.

3

The conveyor moves at 22 meters per minute beneath a brush provided with 500 nylon bristles per square centimeter of 15 mm. length and 0.1 mm. diameter. The brush moves at a peripheral speed of 40 meters per minute and is simultaneously vibrated at a frequency of 15 vibrations per second and an amplitude of 14 mm. The process runs smoothly without interruption or displacement of the hides and the wax is formed into a streak-free layer of uniform thickness and higher luster.

It will be appreciated that the instant specification and examples are set forth by way of illustration and not limitation, and that various modifications and changes may be made without departing from the spirit and scope of the present invention.

What is claimed is:

1. The process for providing a polished surface on natural leather which comprises applying thereto a liquid, dressing or wax, thereafter conveying the leather at a speed of about 5 to 30 meters per minute below a cylindrical brush whose bristles contact the leather, the bristles having a length of about 10 to 20 mm. and a thickness of about 0.10 to 0.15 mm., rotating said cylindrical brush at a peripheral speed about twice that of the leather in the same direction as the leather so as to brush the leather and vibrating said brush in transverse direction at a frequency at least sufficient to provide a polished sur-

4

face and at most about 16 vibrations per second and an amplitude of about 10 to 15 mm.

2. Process according to claim 1, wherein the brush surface is made up of about 200 to 1000 bristles per square centimeter.

3. Process according to claim 1, wherein the brush surface is made up of about 500 nylon bristles per square centimeter.

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