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PROCESS FOR FELTING WOOLEN AND LIKE TEXTILE FABRICS HAVING WOOL POWDER INCORPORATED THEREWITH

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The felting of textile fabrics has been hitherto performed by a more or less energetic process effected in fulling apparatus of the roller or the impact type, and the resulting goods will always more or less show the warp or the woof yarn. The losses due to this method vary from 10 to 30 per cent according to the quality and the clean condition of the material employed, and to the duration of the fulling treatment.

The present invention has for its object to obviate such drawbacks.

The invention consists in causing the fabric to pass through a soap bath containing wool powder which adheres to the fabric and to incorporate said wool powder to the fabric by means of pressure for instance by rolling.

A constructional form of machine suitable for the said process is shown in vertical section by way of example in the appended drawings.

As above stated, the fabric is preliminarily subjected to a slight fulling in a fulling machine of the cylinder type so that the fibres will be better adapted for the subsequent felting operation by means of the powdered wool. It is then placed in my said machine and is suitably spread out in width.

The machine comprises a closed vat 1 which may have the form herein represented; in the said vat are disposed two rollers 2 and 3 for drawing the fabric, as well as an actuated cylinder 4 and a pressing cylinder 5 which bears by its own weight upon the cylinder 4.

The forward end of the piece of fabric to be felted is engaged between the cylinders 4 and 5 and is then sewed or otherwise fastened to the rear end of the piece, so as to form a continuous web 6.

After passing through the cylinders 4 and 5, each part of the fabric 6 will bear upon the drawing roller 2, and will then accumulate upon the concave bottom of the vat 1, and upon reaching the lowest point, the strand of the belt 6 which is now to ascend will proceed—while bearing upon the deflecting board 7—upon the roller 3 and passes thence between the cylinders 4 and 5.

The vat 1 contains a soap bath which is preferably obtained by mixing carbonate of soda with oleine. The fabric moves at the proper speed through this bath.

When the saponification is complete, there is added to the bath a certain amount of wool powder, care being taken to add it in small quantities, until the whole amount of the powder which is to be incorporated into the said fabric is absorbed by the latter.

The wool powder forms a homogeneous paste with the soap of the bath, and said paste is uniformly distributed over both surfaces of the fabric. Since it is strongly compressed when passing through the cylinders 4 and 5, the fabric will rapidly absorb the wool powder and will be thus felted.

When the said powder has been entirely removed from the soap bath, the latter is discharged from the vat 1 by removing a plug 8 provided in the bottom of the vat, and the fabric is thoroughly rinsed by means of a sprinkling jet 9 which is provided in the said vat.

The ends of the fabric are then disconnected, and the fabric is removed from the machine; it is then ready for the subsequent operations such as dyeing, roller glazing, sponging and the like.

By my said process, I greatly simplify the felting operation as compared with the known methods, and hence the cost will be much reduced; the weight of the finished cloth is increased relatively to the weight of the original fabric due to the amount of the wool powder incorporated therein, and the resulting cloth is of a most approved quality.

Having thus described my process and apparatus what I claim as new therein and my own invention is:—

1. Felting process for woolen and similar fabrics, consisting in causing a repeated circulation of the fabric to be felted through a soap bath containing in suspension wool powder and in incorporating the said wool powder to the said fabric by means of pressure.

2. Felting process for woolen and similar fabrics consisting in causing a repeated circulation of the fabric to be felted through a bath containing a sodium carbonate solution to which oleine has been added, to roll the said fabric after each passage through the said bath, to add to the said bath wool powder after the saponification of the oleine, the said wool powder being added to the said bath.
in small quantities in proportion as the already added quantities become deposited on the said fabric and to incorporate the said wool powder to the said fabric by means of pressure.

3. Felting process for woolen and similar fabrics consisting in causing a repeated circulation of the fabric to be felted through a soap bath containing in suspension wool powder and in incorporating the said wool powder to the said fabric by means of pressure, the said fabric being rinsed in order to remove the liquid of the bath.

4. Felting process for woolen and similar fabrics consisting in causing a repeated circulation of the fabric to be felted through a soap bath containing in suspension wool powder and to incorporate the said wool powder to the said fabric by means of rolling.

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