

UNITED STATES PATENT OFFICE.

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METHOD OF TREATING COTTON YARN.

1,058,338.

Specification of Letters Patent.

Patented Apr. 8, 1913.

No Drawing.

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To all whom it may concern:

Be it known that I, SHINJIRO SHIMIZU, a subject of the Emperor of Japan, residing at No. 155 Shimo-Osaki, Osaki-Machi, in the county of Ebara and Prefecture of Tokyo, Japan, have invented certain new and useful Improvements in Methods of Treating Cotton Yarn, of which the following is a specification.

10 This invention relates to an improved process of treating cotton yarns or fabrics.

Single cotton yarn not singed which comes from every cotton spinning factory is covered with small heavy projecting fibers, technically known as nap, which cannot be removed even by the ordinary mercerizing process, and which thus prevents the surface of it exhibiting a perfectly smooth silk-like appearance.

20 The essential object of the present invention is to treat the yarns of fabrics in such a manner as to produce a substance which is entirely free from nap and does not become "nappy" when being dried or washed with either hot or cold water.

To carry out the invention a powder is prepared from a substance known in Japan as *konnyaku*, which is an edible root found principally in Japan and designated as *Conophallus Konnsgak* in the *Japanese English Dictionary* by J. C. Hepburn, 3d edition. This powder is essentially composed of 12.5% of proteid 78.5% mannan and 9% water.

35 The yarn operated upon is first scoured and then passed through a thick solution made from the mannan powder, to which has been added a small quantity of water, or a mixture of water and alcohol with a small quantity of glycerin. The yarn is

then immersed in a strong solution of caustic soda which may be hot or cold, and is then subjected to the ordinary mercerizing process, rinsed, and passed through an acid solution to neutralize any remaining alkali and finally washed with water.

The above recited steps remove all the nap from the yarn and increases its tensile strength.

The quantity of glycerin added to the solution varies with different yarns.

Having described my invention what I desire to secure by Letters Patent and claim is:

1. The process of treating yarn to remove the nap therefrom consisting in first scouring it, then passing the yarn through a solution of mannan, treating the yarn with an alkali, neutralizing the yarn in an acid solution and finally washing it with water.

2. The process of treating cotton yarn to remove the nap therefrom by passing it through a solution comprising *Konnsgak* (known as *konnyaku*) water and alcohol, then treating it with a caustic soda, neutralizing the product in an acid solution and finally washing it with water.

3. The process of treating yarn to remove the nap therefrom by passing it through a solution consisting of *Conophallus Konnsgak* (known as *konnyaku*), water, alcohol and glycerin, next treating the yarn with an alkali, then neutralizing the product in an acid solution and finally washing the yarn with water.

In testimony whereof I affix my signature in presence of two witnesses.

SHINJIRO SHIMIZU.

Witnesses:

P. A. JAY,
S. HORIYE.