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UNITED STATES PATENT OFFICE.

W. STAUFEN, OF LONDON, ENGLAND.

IMPROVEMENT IN TREATMENT OF FIBERS OF TAMPICO HEMP.

Specification forming part of Letters Patent No. 20,827, dated July 6, 1858.

To all whom it may concern:

Be it known that I, WERNER STAUFEN, of the Kingdom of Prussia, but at present residing in London, have invented a new Process of Treating the Fiber of the *Agave Americana*—an article known in commerce as “Mexican grass” and as “Tampico hemp,” which process of treatment gives to the said fiber the roundness and elasticity of horse hair and makes it fully equal to that article for some manufacturing purposes and greatly superior to horse-hair for other purposes.

As found for sale in the great marts of business, the individual fibers of the aforesaid fibrous substance are irregular in shape, are quite porous, and they possess but little elasticity. They also readily absorb moisture from the atmosphere, and consequently they will not remain in a curled state for any considerable length of time when put into said state by any of the previously-known methods of accomplishing the same.

The process by which I change the properties of the said fibrous substance is as follows, viz: I prepare an alkaline solution by incorporating two pounds of soda and twelve ounces of slaked lime with every four gallons of water employed in producing the required quantity of said solution. I then immerse the said fibrous substance in said solution and allow it to remain therein for such a length of time as may be necessary to thoroughly saturate each of its individual fibers, which will generally be accomplished in from one to two hours. As soon as this has been accomplished I transfer the said fibrous substance to a drying-chamber and subject it to such a degree of heat as will evaporate the moisture therefrom in the shortest space of time that it can be accomplished without injuring the strength of said fiber. From 150° to 250° of Fahrenheit will be found to be a judicious temperature to employ in the said drying process. When taken from the said drying-chamber the said fibrous substance can be used as a substitute for hair in the manufacture of various woven fabrics,

and it can also be used as a substitute for bristles in the manufacture of various kinds of brushes. To put the said prepared fiber into a permanently-curled state, it must be first twisted, then softened in water, and then dried by the action of a high degree of artificial heat.

Any desired color can be given to the said fibrous substance by adding the proper coloring materials to the aforesaid alkaline solution, or the said fibrous substance may be transferred from said solution directly to the coloring-vat preparatory to subjecting said fibrous substance to the action of a high degree of heat in the drying-chamber.

I wish to have it understood that I do not intend to limit myself to any exact proportion of the individual ingredients employed in the preparation of the alkaline solution made use of in this my improved process of treating the fiber of the plant known as the *Agave Americana*. The strength and character of the said alkaline solution may be varied as circumstances may require or as practical experience may suggest.

What I claim as my invention, and desire to secure by Letters Patent, is—

Changing the properties of the fibers of the plant known as the *Agave Americana* by first saturating said fibers with an alkaline solution and then immediately submitting the same to the action of a high degree of artificial heat, substantially as herein described, and preparatory to using said fibers as a substitute for horse-hair and bristles in the production of various useful articles.

The above specification of my improved method of treating the fiber of the *Agave Americana*, known as “Mexican grass” and “Tampico hemp,” signed and witnessed this 21st day of May, 1858.

WERNER STAUFEN.

Witnesses:

Z. C. ROBBINS,
J. Q. ADAMS.