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CATION OF TEXTILES & FIBERS,
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UNITED STATES PATENT OFFICE.

EDGAR W. GEISLER, OF BROOKLYN, NEW YORK, ASSIGNOR TO R. H. COMEY BROOKLYN COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

PREPARING STRAW BRAID FOR BLEACHING.

No Drawing. Application filed June 15, 1925. Serial No. 37,326.

To all whom it may concern:

Be it known that I, EDGAR W. GEISLER, a citizen of the United States, and resident of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Preparing Straw Braid for Bleaching, of which the following is a specification.

This invention relates to the preparation of straw braid vegetable fibers while in their original form and having their original general physical properties, that is as straw, and without previous conversion into pulp, by treatment with chlorine, for subsequent bleaching, dyeing, developing, and the like.

Hypochlorites, while they may be useful for the treatment of cotton yarns and fabrics, are totally unsuitable for the preparation of straw fibers in their originally unpulped form which have their original general physical properties, due to the fact that there is insufficient penetration of the fiber in such form by the reagent; and such fiber must be converted into the form of pulp before the hypochlorite can have the desired effect thereon.

I have discovered that unpulped straw fiber, that is, straw fibers having their original form and characteristics, can be suitably treated, with the proper degree of penetration, by first wetting or moistening the fibers and then treating them with a gaseous halogen, preferably chlorine, although other halogens might be used, whereupon such fiber may be bleached or developed. Although considerable bleaching can under certain circumstances be effected prior to the gassing treatment, the steps in the above-mentioned order is preferred.

Wetting or moistening the fiber.

This step may be carried out by subjecting the fibers to the action of water alone or to a somewhat soapy or alkaline water, or to an oxidizing bath which may be acid, alkaline or neutral. I prefer, however, to use for this step a neutral oxidizing bath. Such a neutral oxidizing bath may be about a one per cent solution of potassium permanganate in water, or the solution may even be somewhat weaker; it can also be, and preferably is, a two or less volume hydrogen peroxide bath. As a soapy or alkaline bath, I may use one which is softened, that is to say, one which has a somewhat slippery feel to the hand, though not slimy. The amount of soap may be as low as a few pounds, for example, two or three or four pounds per hundred gallons of water, if the water used is soft tap water. Sodium carbonate or other material adapted to soften water may be used, either alone or together with soap, to produce substantially the same type of bath.

Gassing the fiber with chlorine.

The fiber is subjected to chlorine gas in a sealed chamber, and such chlorine gas may be supplied to the chamber from any suitable chlorine container, and almost any convenient pressure may be made use of, but I prefer and find sufficient a pressure corresponding to a few centimeters of water. Ordinary room temperature is satisfactory for this treatment and the duration of the treatment will, of course, depend upon the specific straw treated, while the treatment should be continued until the proper penetration of the fiber by the chlorine and sufficient reaction have taken place.

Bleaching or developing.

The material is now ready for treating with oxidizing agents or with reducing agents, and for the best results of whiteness hydrogen-peroxide is preferred. The straw may be treated with a dye and, depending on circumstances, perhaps all that may be needed in addition to the dye is an antichlor.

Various types of straws, that is fibers in their natural form, such as Japanese straw, hemp braids, Chinese straw braids, grass fibers and Mexican palm fibers have been effectively treated with sufficient penetration thereof by the chlorine according to my process, but it is, of course, to be understood that my invention is not limited merely to the treatment of the specific straws mentioned, as it may be applied to any others desired.

Under certain circumstances it may be desirable to combine the steps of wetting and gassing, that is straw in its original form and having its original characteristics, may be submerged in the wetting bath and chlorine may be supplied thereto.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. The process of treating straw braid vegetable fibers having their original form

and general physical characteristics, comprising the preliminary step of subjecting them while moist to chlorine gas whereby said fibers may be subsequently readily penetrated by a bleaching agent, and the step of subjecting them to the action of a bleaching agent other than chlorine.

2. The process of treating straw braid vegetable fibers having their original form and general physical characteristics, comprising the preliminary step of subjecting them while moist to chlorine gas under pressure greater than atmospheric, whereby said fibers may be subsequently readily penetrated by a bleaching agent, and the step of subjecting them to the action of a bleaching agent other than chlorine.

3. The process of treating straw braid vegetable fibers having their original form and general physical characteristics, which comprises wetting the fibers, subjecting them while wet to chlorine gas and subjecting them to the action of an oxidizing agent.

4. The process of treating straw braid vegetable fibers having their original form and general physical characteristics, which comprises wetting the fibers, subjecting them while wet to chlorine gas under pressure greater than atmospheric and subjecting them to the action of an oxidizing agent.

5. The process of treating straw braid vegetable fibers having their original form and general physical characteristics, which comprises subjecting the same to an oxidizing and cleansing bath, and then subjecting them to chlorine gas.

6. The process of treating straw braid vegetable fibers having their original form and general physical characteristics, which comprises subjecting the same to a mild oxidizing and cleansing bath, and then subjecting them to chlorine gas under pressure greater than atmospheric.

In testimony whereof I hereunto affix my signature.

EDGAR W. GEISLER.