UNITED STATES PATENT OFFICE.

HERMANN ENDEMANN, OF BROOKLYN, ASSIGNOR TO FRANKLIN D. NEWTON, OF QUEENS, NEW YORK.

TREATING RATTAN.

SPECIFICATION forming part of Letters Patent No. 343,952, dated June 15, 1886.

Application filed May 13, 1886. Serial No. 202,078. (No specimens.)

To all whom it may concern:

Be it known that I, HERMANN ENDEMANN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Treating Rattan, of which the following is a specification.

This invention has for its object the removal from rattan of the silex or enamel covering its outer surface, and to prepare the rattan for subsequent bleaching and coloring.

In an application for a patent filed by me April 15, 1886, No. 198,999, I have described a process for removing the enamel from rattan by the action of a soap containing an excess of alkali, and this process answers the desired purpose perfectly well, provided it is applied to sticks of rattan.

Since the time of filing the above-named application I have found it to be of advantage, particularly on account of economy, to slice the rattan first, and then subject the strands of cane to the process of removing the enamel, and in doing so the wood surface of the strand of cane is exposed to the free alkali contained in the soap described in my application No. 198,999, above named. By this action of the free alkali upon the wood surface the strands of cane become brittle. In order to remedy this defect, I use a soap which is prepared in such a way that no free alkali is present and all the alkali not combined with a fatty acid is combined with a weak acid of the character of an amido acid, whereby the removal of silex from strands of cane can be effected without injuring the pliability of said strands.

The nitrogenous compounds of alkalies and amido acids above named are produced by the action of alkali upon albumen, wood fiber, glue, silk, keratine, (the substance composing the horns and hoofs of animals,) the epidermis of animals, nails, hairs, scales, and feathers.

The compounds which are produced by the action of alkali upon the above-named animal substances are many and of varying composition; but those upon which I rely in the preparation of the soap above named partake of the character of amido acids—that is, acids the acid character of which has been greatly reduced by the presence of one or more amido groups. The reaction of these acid compounds upon litmus-paper is none; but the reaction of their alkaline compounds is strongly alkaline, and if a mineral acid is gradually added to such an alkaline solution it continues to show an alkaline reaction until all the alkali has been saturated by the mineral acid, just as if a pure solution of alkali had been employed. These alkaline compounds yield their alkali to substances of a more acid character, like those composing the so-called "silex" or enamel on cane; but they do not affect neutral substances in the same manner as pure alkali. They do, therefore, not affect the woody fiber of the cane.

The following is an example for preparing a soap of the character above-named: I dissolve one hundred parts of commercial caustic soda, containing about eighty per cent. of sodium hydrate, in three hundred parts of water, heat to boiling, and add thereto fifty parts of horn-turnings, stirring continuously. The horn will speedily dissolve. I then continue the boiling for about one and one-half to two hours, and then add to this solution fifty parts of commercial oleic acid. When all is dissolved, I allow to cool. If the boiling is done in an open vessel, the evaporated water is to be replaced from time to time. The boiling may, however, be done in a closed vessel and under pressure, and in this case the time of contact of the substances may be materially reduced. At a temperature corresponding to a pressure of twenty-five pounds to the square inch the reaction may be finished in from fifteen to twenty minutes. If animal substances other than horn-turnings are taken—as, for instance, meat scraps—allowance must be made for the water and fat which they contain. Of the concentrated soap thus obtained I use twenty-five pounds, and dissolve them in one hundred gallons of water, in order to obtain a liquor of such strength as is found most desirable for the treatment of cane. The cane is introduced into the above-named solution either before or after splitting, and boiled therein until the silex or enamel is removed, which requires from one to two hours, and I have found that the cane, whether

it has been treated in sticks or strands, on being removed from the solution is very pliable, and not liable to crack when bent.

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

The improved process for removing the silex or enamel from rattan, which consists in placing the rattan into a solution of an alkaline amido soap, such as above described, and then heating to the boiling-point for the term of one to two hours, substantially as set forth.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

HERMANN ENDEMANN. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.