

UNITED STATES PATENT OFFICE.

MAX PAUL OSCAR DICKHUTH, OF HARBURG-ON-THE-ELBE, GERMANY,
ASSIGNOR TO THE FIRM OF H. C. MEYER, JR., OF SAME PLACE.

TREATING RATAN.

SPECIFICATION forming part of Letters Patent No. 602,800, dated April 19, 1898.

Application filed July 16, 1895. Serial No. 556,545. (No specimens.) Patented in England April 2, 1895, No. 6,799; in Belgium August 31, 1895, No. 117,026; in France December 10, 1895, No. 249,668; in Hungary November 17, 1896, No. 7,822, and in Austria December 5, 1896, No. 46/4,893.

To all whom it may concern:

Be it known that I, MAX PAUL OSCAR DICKHUTH, doctor of philosophy, a subject of the King of Prussia, German Emperor, and a resident of Harburg-on-the-Elbe, in the Province of Hanover, Germany, have invented certain new and useful Improvements in Treating Ratan, of which the following is a specification.

My invention relates to an improved process of removing the silicious coating or enamel from ratan or Indian cane, for which Letters Patent have been granted in Great Britain, No. 6,799, of April 2, 1895; in France, No. 249,668, of December 10, 1895; in Austria, No. 4,893/46, of December 5, 1896; in Belgium, No. 117,026, of August 31, 1895, and in Hungary, No. 7,822, of November 17, 1896.

The cane material used extensively in the manufacture of chairs and obtained in the tropics from cane-plants is naturally covered by a thick highly-polished crust of silicious material of great hardness. For many purposes in the use of ratan, especially for the production of wicker-chairs, this crust has to be removed, because the ratan cannot be satisfactorily bleached and dyed so long as the crust remains. This removal of the silicious coating of the cane has been accomplished heretofore in most cases manually by the natives in the tropics. Besides this mechanical method of removing the silicious coating only one method has been heretofore followed—namely, one in which the ratan is subjected to a treatment with alkaline lyes of different compositions.

The objection to the mechanical process of removing the silicious coating of ratan is that it is tedious and difficult to accomplish thoroughly. The objections to the use of alkaline lyes for the purpose of removing the silicious coating are several. By this treatment of the ratan the ligneous substance forming the core of the ratan is modified, so that its most valuable properties are lost. The physical change wrought in the wood fiber results in a certain degree of ductility which is very injurious, especially when the ratan is used for the caning of chairs. Cane

chair-bottoms of this kind will gradually bulge out when used and will not return to their original shape. At the same time the surface which is obtained by the alkaline treatment is dark-colored, so that somewhat complicated processes have to be resorted to in order to bleach the ratan after the alkaline treatment to make it capable of receiving a uniform dye. Still another difficulty in the use of the alkaline process heretofore attempted in removing the crust of ratan is that by means of this treatment the surface of the ratan is covered with fine fissures, which obstruct the uniform absorption of dyeing substances and make the cane very liable to retain dust and dirt, and therefore comparatively unsuitable for use in furniture.

It is the object of this invention to obviate the difficulties referred to by a chemical treatment which is thorough and expeditious and which does not in any way injure the fiber of the cane.

My improved process consists in treating the raw cane, preferably before splitting, with an aqueous solution of about one per cent. of hydrofluoric acid with which the cane material is digested for several days until its silicious covering has completely disappeared. Thereafter the ratan or cane is rinsed for several hours in flowing water. It is then treated in an alkaline bath—for example, with a soda solution of about one per cent.—and finally again rinsed in water. I find that by means of this treatment the silicious coating of the cane is completely removed and that the fiber is not injured and the cane is not discolored.

While I have set forth the steps of the process which I prefer to use, I do not wish to be limited to this specific process nor to the exact strength of the solution of hydrofluoric acid which I have mentioned. I believe that it is new with me to use a weak solution of hydrofluoric acid to dissolve and remove the silicious coating of Indian cane without separating or injuring the fiber of the cane and without discoloration thereof.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described process of removing the silicious coating of ratan, which consists in subjecting the cane before splitting to the action of a weak solution of hydrofluoric acid, substantially as described.

2. The herein-described process of removing the silicious coating of ratan, which consists in subjecting the cane before splitting to the action of a weak solution of hydrofluoric acid, washing it in water, subjecting it to the action of a weak aqueous solution of an alkali, and finally washing it in water, substantially as described.

3. The herein-described process of removing the silicious coating of ratan, which consists in subjecting the cane to the action of a weak solution of hydrofluoric acid, substantially as described.

4. The herein-described process of removing the silicious coating from cane or ratan

which consists in subjecting the cane successively to the actions of weakened solutions of hydrofluoric acid and of an alkali, substantially as described.

5. The process of removing the silicious coating from cane or ratan which consists in subjecting the cane successively to an attenuated solution of hydrofluoric acid and a weak solution of an alkali the said chemicals being removed from the cane by washing the same in water, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 2d day of July, 1895.

MAX PAUL OSCAR DICKHUTH.

Witnesses:

ALEXANDER SPECKS,
JULIUS STUCKENBERG.