UNITED STATES PATENT OFFICE.

FELIX FREMEREY, OF NEWARK, NEW JERSEY.

DECORTICATING, REFINING, AND BLEACHING RAMIE, CHINA-GRASS, &c.

SPECIFICATION forming part of Letters Patent No. 306,476, dated October 14, 1884.

Application filed February 6, 1883. (No specimens.)

To all whom it may concern:

Be it known that I, FELIX FREMEREY, formerly of Aix-la-Chapelle, Germany, but now a resident and about to become a citizen of Newark, New Jersey, have invented certain new and useful Improvements in Decorticating, Refining, and Bleaching Ramie, China-Grass, or other Vegetable Fibers obtained from Plant Stalks; and I declare the following to be a description of my said improvements.

My improvements are applicable to ramie, nettle, and all kinds of stalks usable for furnishing vegetable fiber. I first boil the dried stalks for one or two hours in a solution of the soap described in another application bearing even date with this, (said soap is made of cocoanut-oil, Iceland moss, and alkali,) about four pounds of said soap to one hundred pounds of the stalks. By this means the epidermis is dissolved and the fibers are separated from the woody particles of the plants. The fibers are then dyed or bleached, and afterward rinsed in clear water and dried. After the use of the soap and boiling process I break up and further remove the woody particles by passing the fibers through suitable machinery. This machine may first receive the fibers or stalks between small crushing and feeding rolls having small teeth on their periphery. These feeding rollers deliver the fibers into a series of rollers arranged in sets of three, and provided with cards for carding or separating the fiber. The last series of rollers should be provided with a combing device. The number and fineness of the cards and combs can be increased to any desired extent, so as to make the fibers fine, soft, and well adapted to spinning. When the carding and combing are carried to a high degree, the fiber becomes exceedingly fine, and is adapted to use as an absorbent fiber for surgical purposes in lieu of and better than lint or cotton. After thorough decortication as above described, I submit the fibers to the following bleaching process: The fibers are first treated for from one to two hours in a hot bath of one and a half pound of hypermanganate of potassium to one hundred pounds of water. They are then submitted for the same time to another but cold bath of borax, sulphurous acid, and indigo carmined, in the proportions of about two pounds borax, three or four pounds of sulphurous acid, one to two ounces of indigo carmined, and one hundred pounds of soft water.

I claim as improvements in decorticating and refining ramie and other vegetable fibers—

1. The improved process of decorticating fibrous stalks such as ramie, the same consisting in boiling the same in a saponaceous solution of cocoanut-oil, Iceland moss, and an alkali, as set forth.

2. The process of bleaching vegetable fibers, the same consisting in treating them first in a hot bath of permanganate of potassium, and then in a cold bath of borax, sulphurous acid, indigo carmined, and water, as set forth.

3. The process of obtaining vegetable fibers for useful purposes, the same consisting in first decorticating the stalks with a solution of soap composed of cocoanut-oil, Iceland moss, and alkali, next breaking up the stalks and separating the fibers by suitable machinery, and finally bleaching the fibers with permanganates, and a cold bath of borax, sulphurous acid, indigo carmined, and water, as set forth.

FELIX FREMEREY.

Witnesses:
CHARLES HOLZHAUER,
J. C. CLAYTON.