UNITED STATES PATENT OFFICE.

CASIMIR MASSE, OF RANTIGNY, FRANCE, ASSIGNOR OF ONE-HALF TO LA SOCIÉTÉ FRANÇAISE DE RAMIE, OF PARIS, FRANCE.

TREATMENT OF RAMIE, CHINA-GRASS, OR OTHER FIBROUS MATERIAL.

SPECIFICATION forming part of Letters Patent No. 711,577, dated October 21, 1902.

Application filed July 2, 1901. Serial No. 66,923. (No specimens.)

To all whom it may concern:

Be it known that I, CASIMIR MASSE, a citizen of the Republic of France, residing at Rantigny, Oise, France, have invented certain new and useful Improvements in or Relating to the Treatment of Ramie, China-Grass, or other Fibrous Material, (for which application for Letters Patent has been made in Great Britain under No. 11,858, dated June 10, 1901; in France, dated May 31, 1901, and in Germany, dated June 4, 1901,) of which the following is a specification.

The present invention relates to the cleansing or preparation of ramie, china-grass, or other fibrous material in either a raw, green, or dried state to bring it into condition.

According to this invention an alkaline bath of potash or soda is prepared, giving by titration from four to five degrees. The dried or green ramie or like stems are then plunged into this bath so that they are quite immersed. An autoclave or other vessel will serve for this operation. This bath must be brought to boiling temperature and maintained at this point for fifteen to twenty minutes. The operation is terminated when on passing the finger over the stems the outer skin or pellicle becomes easily detached. The stems must then be removed from the bath and dried in such a manner that they are freed as much as possible from the alkaline bath. This bath is not exhausted and can serve indefinitely, care being taken, however, to slightly strengthen it after each operation. The stems or material thus freed from excess of liquid are then steeped in a bath which must not be either too liquid or too thick, but of a creamy consistency and consisting, preferably, of: water, six hundred and seventy-five parts; alkaline carbonate, (soda or potash,) fifty parts; ordinary soap, fifty parts; carbonate of calcium, twenty-five parts; silicate of magnesia, fifty parts; feculent or amylaceous substance, one hundred and fifty parts; total, one thousand parts. Preference is given to this bath, which produces excellent results; but in this bath any other powder may be added or substituted in order to effect the separation of the agglutinant mass and to produce more or less perfect the same final result—for instance, all inert powders, (mineral or even vegetable,) crushed sulfur, ocherous, argillaceous, silicious, or lycopodic earths, &c., which do not cause any harmful reaction or any alteration in the fiber. In this second bath the carbonate of soda and the soap can be replaced by either an alkaline silicate or by a solution of chlorid of potassium or of soda in the proportion of about one-tenth part; but this preparation gives a little hardness to the fiber and the pulverulent mixture produced is less easily detached from the fiber.

The products composing the second bath have the object of intimately penetrating the parts rendered gelatinous by the first bath and of forming with them a finely-granulated mixture which prevents them from again adhering together. All new agglutination is thus prevented and the dried fiber is easily detached from this mixture, which takes away all foreign materials, the outer skin included, the fiber alone remaining intact. In the second bath the pectic and other materials leave the fiber and adhere to the powder, forming with it a purverulent mass, which is easily detached, leaving the fiber completely intact and clean. The second bath also acts to facilitate reactions between the alkaline base and the hydrocarbonic and pectic substances. After the stems have been well impregnated with this semiliquid mass they are taken out and dried in a rapid current of air, and in this state they are passed between rollers to remove the excess of powder and the waste. In this manner a material is obtained having the appearance of hemp or macerated flax with pliant fibers completely separated one from the other, retaining their parallelism and free from all residues and only retaining their useful parts.

The essential feature of the process is the succession of the two distinct operations, each having its own particular object and function.

First. The first bath, which leaves the fibers in their entirety and only attacks their outer parts, reducing the pectic and other materials which incase the fiber to a softened gelatinous state.

Second. The second bath causes a powder in a state of very fine division to penetrate the agglutinant and softened mass in which

the fibers are contained, which powder prevents the original pectic mixture from returning to its former cohesive state and again binding the fibers. When the whole is slightly dried, by simply rubbing everything except the fiber is detached in a pulverulent state and the fiber remains entirely free.

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

1. The treatment of raw, green or dried ramie, china-grass or other like fibers, consisting in first immersing the stems or material into a first hot, alkaline bath in order to soften the pellicle, gums, or other substances, which confine the fibers, drying same, and immersing the stems or material into a second bath having an alkaline amylaceous and pulverulent base to facilitate a reaction between the alkaline base and the hydrocarbonic and pectic compounds, and to form a pulverulent mixture which is easily detached from the fiber, drying the material and finally removing the powder and the waste from the fibers, substantially as described.

2. In the process of treating raw, green or dried ramie, china-grass or other like fibers, the herein-described essential steps of first immersing the stems or material in a hot, alkaline bath in order to soften the pellicle, gums or other substances, and then immersing the stems or material in a second bath having an alkaline amylaceous and pulverulent base.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CASIMIR MASSE.

Witnesses:

LOUIS FULLIGER,

EDWARD P. MACLEAN.