

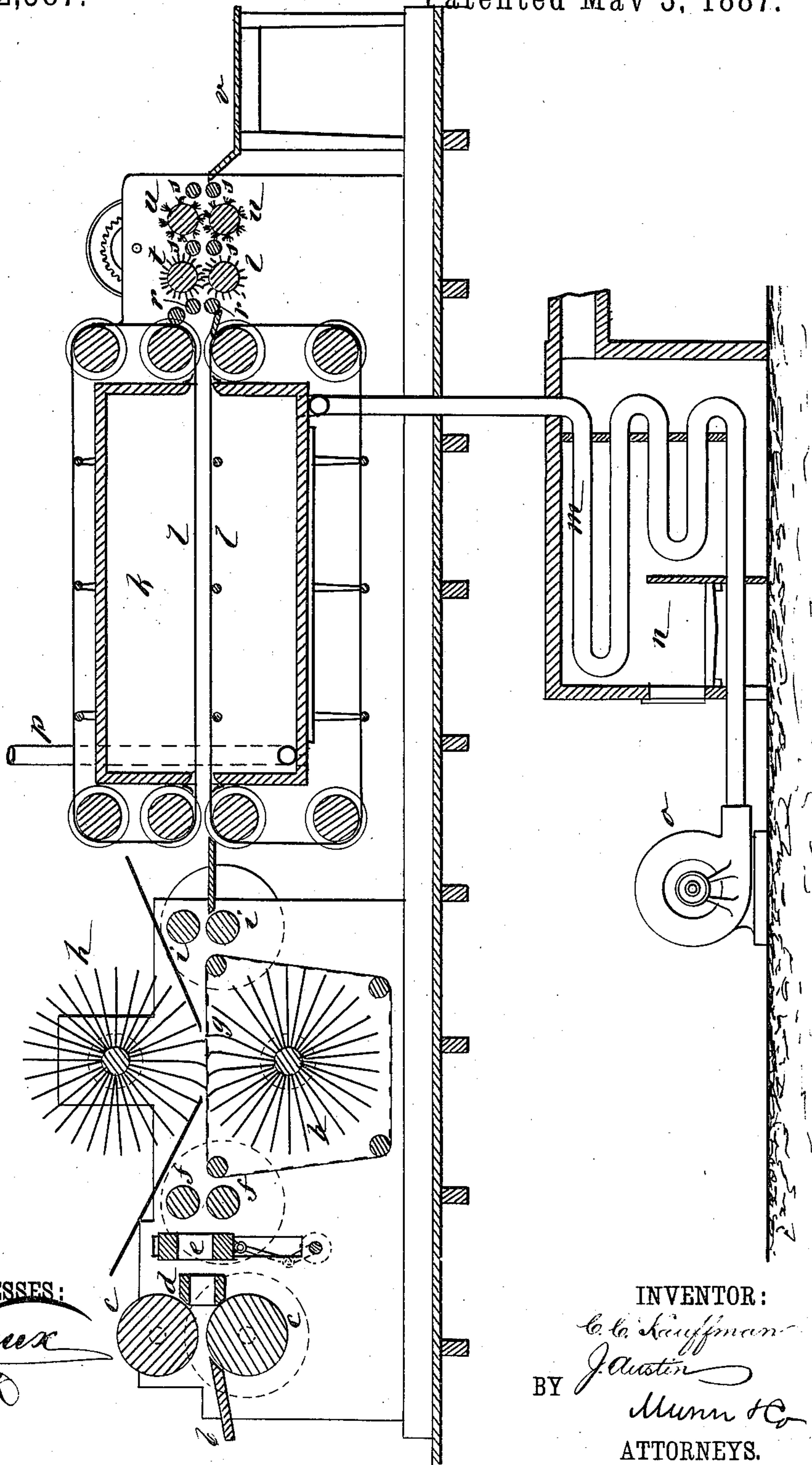
(No Model.)

C. C. KAUFFMAN & J. AUSTIN.

TREATING RAMIE AND OTHER FIBERS.

No. 362,387.

Patented May 3, 1887.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHRISTIAN C. KAUFFMAN AND JOHN AUSTIN, OF NEW ORLEANS, LA.

## TREATING RAMIE AND OTHER FIBERS.

SPECIFICATION forming part of Letters Patent No. 362,387, dated May 3, 1887.

Application filed August 31, 1886. Serial No. 212,308. (No specimens.)

*To all whom it may concern:*

Be it known that we, CHRISTIAN C. KAUFFMAN and JOHN AUSTIN, both of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and Improved Process of Treating Ramie and other Fibers, of which the following is a full, clear, and exact description.

This invention relates to the treatment of ramie, jute, hemp, and other fibers to prepare the same ready for market or use; but for convenience of explanation it will here be described more particularly with reference to the treatment of ramie.

Heretofore it has been customary to first decorticate the ramie, &c., and afterward by a separate process to remove the gum or sap by subjecting the fiber to the action of hot water, soaps, and chemicals, which treatment is not only detrimental to the fiber, especially where certain chemicals are used, but much time and labor is consumed in washing and subsequently drying the fiber. This makes the preparation of the fiber not only tedious and expensive, but often results in more or less injuring the fiber.

Our invention removes these objections; and it consists, mainly, in subjecting the fiber after decortication to the action of hot air or to a blast of air heated to a temperature which will drive off the moisture and solidify the gum or sap, so that said solidified matter can readily be afterward removed by mechanical means, such as beaters and brushers.

The invention furthermore consists in treating the fiber in a continuous manner, first, to a decortivating operation, then to a drying one by artificially-heated air, and afterward to a mechanical cleaning operation for removing the dried or solidified substances from the fiber, these several operations all being performed while the fiber is in motion, and whereby all rehandling of the fiber after each operation is avoided, and much time and labor are saved.

The invention likewise consists in certain detailed modes of carrying out the process, substantially as hereinafter described.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which similar letters of reference indicate corresponding parts.

The drawing represents a longitudinal sectional elevation of an apparatus which will serve as well as any other to illustrate how our improved process is or may be carried into effect. No claim, however, is here made to the apparatus, and any other combination of mechanism or devices that will answer the purpose may be used.

The apparatus shown in the drawing virtually includes a decortivating-machine and a drying and cleaning apparatus substantially similar to those which are made the subjects of separate now-pending applications by Christian C. Kauffman, one of the subscribers of this specification.

The ramie, &c., stalks to be treated are first passed onto a feed-table, *b*, and from thence to and through feed-rollers *c c*, to one or both of which suitable driving-motion is communicated, then through a slotted frame, *d*, and reciprocating slotted breaker *e* to and through feed and guide rolls *f f*, and over a net-like carrier, *g*, to and between whippers *h h*, made to simultaneously revolve alternately in reverse directions, and from thence to and through delivery-rolls *i i*. This completes the decortivating action, the means for doing which, whether as above described or different, may pass or travel the material being treated at the rate of twenty-five feet per minute, more or less. The fiber leaving the decortivating devices then passes, without arresting its onward movement or travel, at the same uniform velocity to and through a suitable drier and cleaning devices—that is, first through the drier, and then through the cleaning devices. In this way the ramie or material is decorticated, its gum or sap dried and solidified, and such solidified matter removed, and the fiber cleaned ready for the market or use without any rehandling.

The means here shown for drying and cleaning the fiber, and which are arranged immediately in rear of the decortivating devices to make the several operations continuous, as described, consist in part of a close hot-air drying-chamber, *k*, having two endless belt-like carriers, *l l*, passing through it, and carrying the fiber as it leaves the decorticator between them. This chamber is supplied with a blast of hot air, at a temperature preferably varying from 160° to 175° Fahrenheit, by or from



a coil, *m*, in a furnace, *n*, through the action of a blower, *o*, the coil *m* communicating with the chamber *k* at or near its one end to dry and solidify the gummy, &c., matter in the fiber, and the expelled moisture passing off by another pipe or pipes, *p*. The exposure of the fiber within the drying-chamber need not exceed a few minutes, and said chamber may be made of any desired length to secure the necessary length of exposure, or the fiber may, by any suitable means, be made to travel forward and backward through the drying-chamber before leaving the same for the cleaning devices. The cleaning devices here shown—that is, the devices for mechanically removing the dried and solidified matter from the fiber, and which are arranged immediately in rear of the drying-chamber—consist of feed and delivery rollers *r s*, made to move in concert with the contiguous parallel portions of the carrier *l l*, holding and passing the fiber in between them, and a pair of rotary whippers or beaters, *t t*, and a pair of rotary brushes, *u u*, which beaters and brushes, that preferably alternately rotate simultaneously in reverse directions, remove the dried and solidified gummy, &c., matters from the fiber, which then passes cleaned and ready for use or market onto a table, *v*.

In some cases the stalks, &c., of the fibrous plants to be disintegrated may be stripped or decorticated by means wholly disconnected from the means used to solidify and remove the gummy, &c., matter in the fiber, and the stripped fiber afterward be separately conveyed, otherwise than in a continuous manner, to the drying or drying and cleaning devices; but it is preferred to make these several operations continuous and successive, as described, so as to avoid rehandling of the fiber.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In the process herein described of treating or preparing ramie, jute, hemp, and other fibers, exposing the fiber under cover, after decortication, to the action of a body or current of artificially-heated air, and afterward exposing it to a mechanical cleaning action, whereby the gummy and other matter in the fibers are first solidified and subsequently mechanically removed, essentially as specified.

2. In the process herein described of treating or preparing ramie, jute, hemp, and other fibers after decortication, exposing the fiber, while in motion, first to the action of a body or current of artificially-heated air, and afterward to a mechanical cleaning action, substantially as and for the purposes specified.

3. The within described process of treating or preparing ramie, jute, hemp, and other fibers, which consists in subjecting the material, while in continuous and uniform motion, first to the action of decortication devices, then to a drying action by artificially-heated air, and subsequently to a beating and brushing or mechanical cleaning action, essentially as described.

CHRISTIAN C. KAUFFMAN.  
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