

(No Model.)

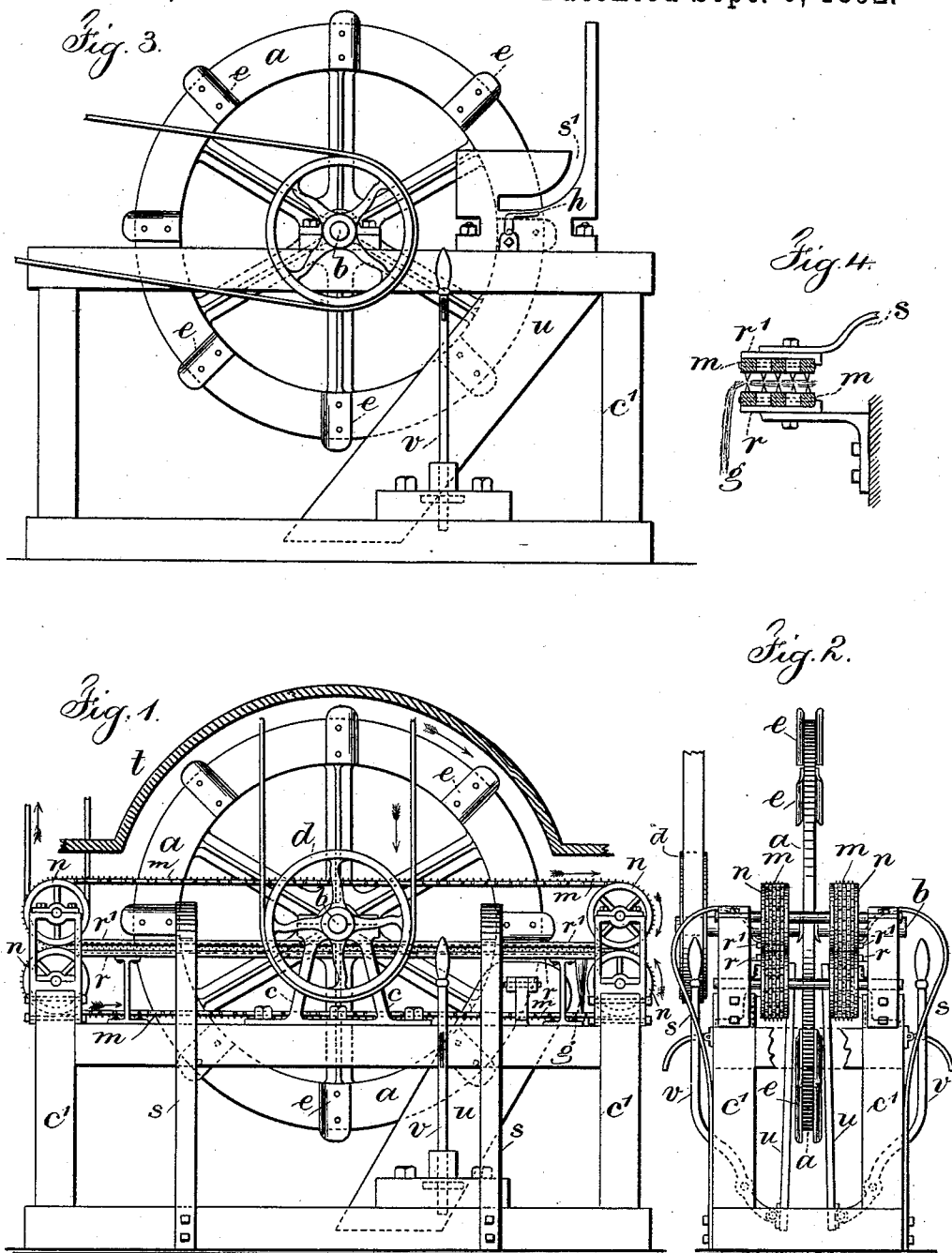
I. VILLAMOR, Dec'd.

H. SERRELL, Administrator.

MACHINE FOR PREPARING FIBER.

No. 482,205.

Patented Sept. 6, 1892.



Witnesses

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UNITED STATES PATENT OFFICE.

HAROLD SERRELL, OF NEW YORK, N. Y., ADMINISTRATOR OF ISIDORO VILLAMOR, DECEASED.

MACHINE FOR PREPARING FIBER.

SPECIFICATION forming part of Letters Patent No. 482,205, dated September 6, 1892.

Application filed January 15, 1892. Serial No. 418,202. (No model.)

To all whom it may concern:

Be it known that ISIDORO VILLAMOR, late of Merida, Yucatan, Republic of Mexico, now deceased, did invent an Improvement in Machines for Preparing Fiber, of which the following is a specification.

Machinery had, before this invention, been made for scraping off the pulpy vegetable material from the fiber in the leaves of such plants as the *Agave Americana*, for the separation of the fiber and its preparation for market. In such machinery the knives or scrapers were placed across the edge or face of a wheel and acted upon the fiber as it lay upon a movable apron or support. In these machines the scraping action of the knives was liable to injure the fiber and only to remove the pulp from the same at one side. Hence the fiber had to be opened out and turned over by hand, and there was risk of the hands or arms of the attendant being pulled into the machine. The improvements of said VILLAMOR are for more effectually scraping off the pulpy material from the fiber and causing the knife to travel partially across the fiber as it draws lengthwise of it, and thereby effect the twofold operation of opening the fiber and of partially revolving each fiber so as to scrape the pulpy material entirely from the fiber, and devices are provided for holding the fiber in such a manner that risk of personal injury is lessened.

In the drawings, Figure 1 is an elevation of the fiber-machine with the case partially removed. Fig. 2 is an end view. Fig. 3 is an elevation of the machine as adapted to hand-feed, and Fig. 4 is a cross-section through the feeding-belts.

The wheel *a* is upon a shaft *b*, that is supported in standards *c* in a suitable frame *c'* and driven by power applied to the drum or pulley *d*. The scrapers or knives *e* are blades of metal placed radially, or nearly so, upon the vertical face of the wheel and at right angles to the axial line of the shaft, or at an inclination to the same, so that in their rotation the said knives or scrapers describe a path similar to a flat or nearly flat ring. Said knives *e* are slightly curved in cross-section

and secured to the face of the wheel, so that their scraping-edge is slightly above the face of the wheel.

The material *g*, that is in the form of long leaves or stems containing the fiber to be cleaned of pulp, is supported by a suitable rest *h* in the hand-feed machine shown in Fig. 3, and the knives scrape the same downwardly; but the knives do not move in a straight line, but travel in the arc of a circle. Hence they draw endwise across the hank of fiber and finally leave the fiber. In this operation there is a tendency to cause the fiber to assume the form of an arc of a circle, and the knives in their movement draw laterally across the fiber and tend to open and spread the same and to roll or revolve each fiber, and in so doing bring to the surface the fibers that would otherwise be covered and scrape all sides of such fibers, and the centrifugal action of the knives is to throw off the pulpy material and at the same time spread the hank of fiber outwardly.

In consequence of the direction in which the knives or scrapers move it is not always necessary to have any backing or support to the fibers, as said fibers hang down loosely from their rest; but to facilitate the scraping and cleaning operations a presser-board *u* is employed for the fibers to rest on. The presser-board *u* is pivotally connected to the frame of the machine at or near its upper end, where the hank of fiber is supplied, and said upper end is about on a horizontal line drawn through the shaft of the scraping-wheel. Said presser-board is inclined at an angle of about forty-five degrees, and its surface is nearly parallel to the plane of rotation of the knives. Hence the upper end of the presser-board, where the hank of fiber is supplied, maintains a fixed relation to the scraping-wheel and there is ample room for the introduction of the leaves to be scraped, and said scraping-board is acted upon by the lever *v* to press the lower part thereof and the fibers toward the scrapers with more or less force, and the knives of the scraping-wheel draw along and partially across the fiber and tend to open and spread the same upon the in-

clined presser-board and to partially revolve and bring all their surfaces into position to be scraped. If the fiber is held by hand across the rest *h* or twisted around it, such fiber is to be turned end for end and to be opened from time to time. Feeding and holding belts *m* are preferred, and they pass around the pulleys *n n*, which are moved gradually, and the leaves are supplied between such belts either singly or in hanks, and their ends hang down at the sides of the belts next to the revolving scrapers, so as to be operated upon by the said scrapers as the belts carry the leaves across the path of the scrapers. After the leaves have been scraped at one end they are reversed and passed in a second time upon the belts for the other ends to be scraped. In this respect the action of the scraping-wheel and presser-board is identically the same as in the hand-fed machine, Fig. 3.

The feeding of the leaves to the belts is done by hand; but in order that the belts may hold the leaves or fiber firmly between them and against the scraping action of the knives, such belts are corrugated or made with roughened surfaces or teeth and such belts pass between the check-pieces *r r'*, that exert a pressure to prevent the belts separating at the places where the fiber is being held. The upper check-piece *r'* is preferably held down by springs *s*.

There is a suitable case to inclose the wheel and scrapers and part of such case is shown at *t*, Fig. 1, and the opening or mouth at *s'*, Fig. 3, is provided for convenience in throwing in the hank to be cleaned, and one end of the hank projects and is held upon the rest *h*, or partially coiled around a projecting metal bar or horn that is provided at such rest. By this construction it is possible to effect a more thorough cleansing of the fiber from the pulp or other foreign matter and to do the work more cheaply and with less waste or injury to the fiber than heretofore.

It will be apparent that the fiber may be entered at both sides of the machine and be attended by two persons. In this instance the scrapers will be provided upon each face of the revolving wheel, as indicated in Fig. 2.

What is claimed as the invention of said VILLAMOR is—

1. The combination, in a fiber-cleaning machine, of a revolving wheel having radial or nearly radial knives or scrapers secured to the face of the same, a presser-board pivoted near the upper end thereof where the hank of fiber is supplied, said board being inclined in the direction of the scraping action, so that the fiber is spread out as scraped by the knives, and a lever for moving the lower end of the presser-board toward the scraping-wheel, substantially as specified.

2. The combination, in a fiber-cleaning machine, with a revolving wheel having knives or scrapers, of a scraping-board over which the fibers are drawn as they are cleaned, the feeding and holding belts that receive the leaves between the straight portions thereof and hold such leaves at one end while the other ends are being cleaned, substantially as specified.

3. The combination, in a fiber-cleaning machine, with a revolving wheel having knives or scrapers, of a scraping-board over which the fibers are drawn as they are cleaned, the feeding and holding belts between which the leaves are supplied and by which they are held at one end while the other ends are being cleaned, and mechanism, substantially as set forth, for applying pressure to the straight portions of said belts to cause them to grip the fiber firmly, substantially as specified.

4. The combination, in a fiber-cleaning machine having a revolving wheel and scrapers, of a scraping-board over which the fibers are drawn as they are cleaned, feeding and holding belts, and yielding supports between which such belts pass for retaining the fibers that are supplied between the chain as they are cleaned, substantially as specified.

Signed by me as ancillary administrator of the estate of said ISIDORO VILLAMOR this 11th day of January, A. D. 1892.

HAROLD SERRELL.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.