No. 646,817. Patented Apr. 3, 1900.

F. ESCALANTE.

FIBER CLEANING MACHINE.

(Application filed Sept. 15, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

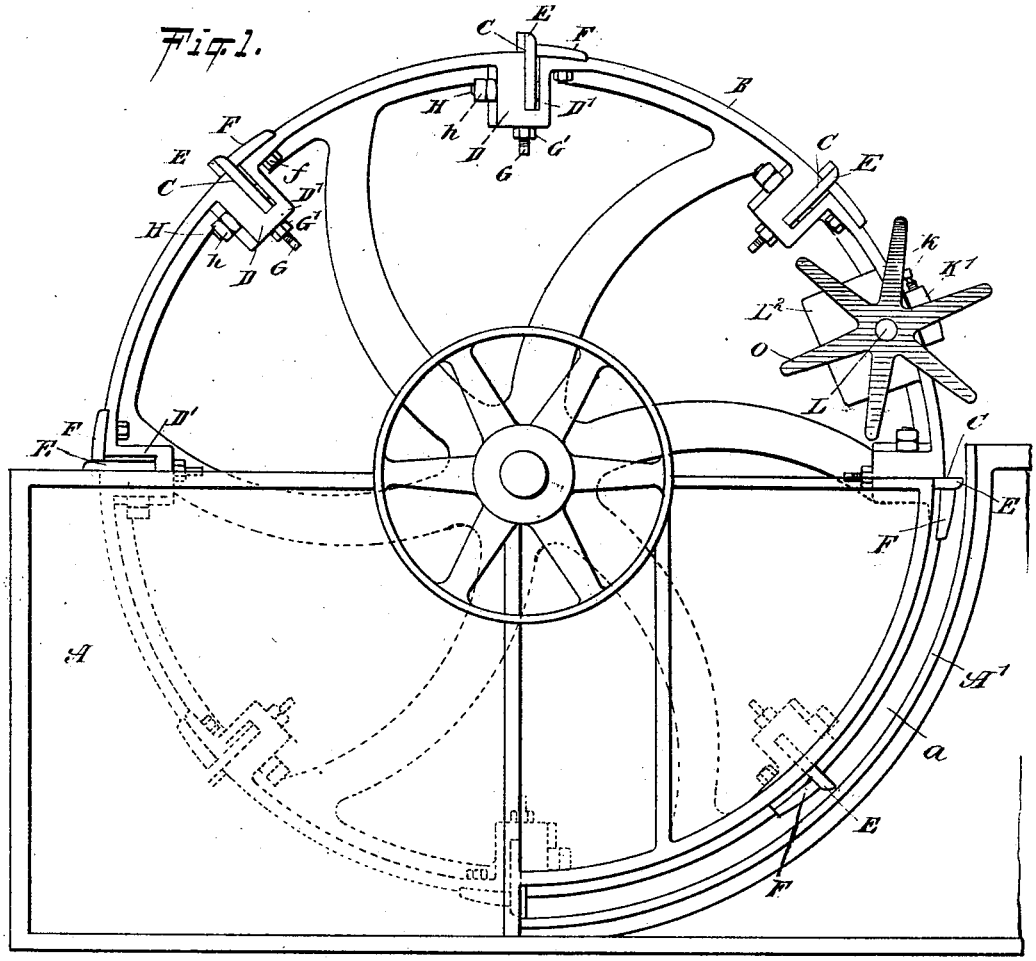
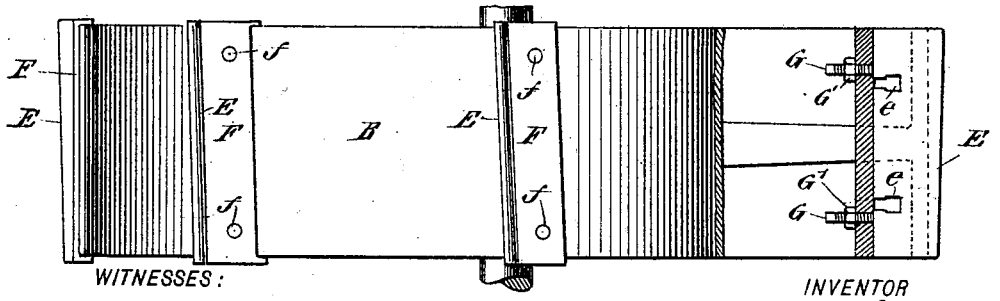


Fig. 2.



WITNESSES:

William P. Goebel.
H. L. Reynolds.

INVENTOR
Faustino Escalante
BY Munn & Co.
ATTORNEYS

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Fig. 3.

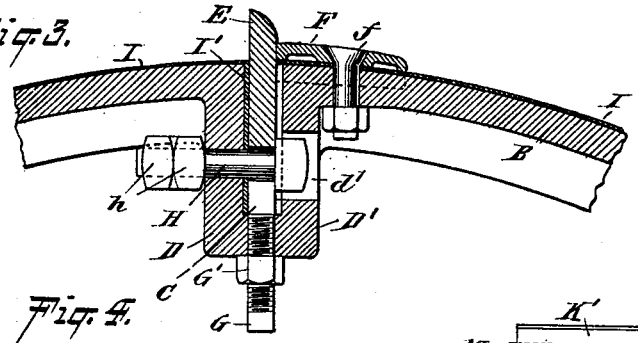


Fig. 4.

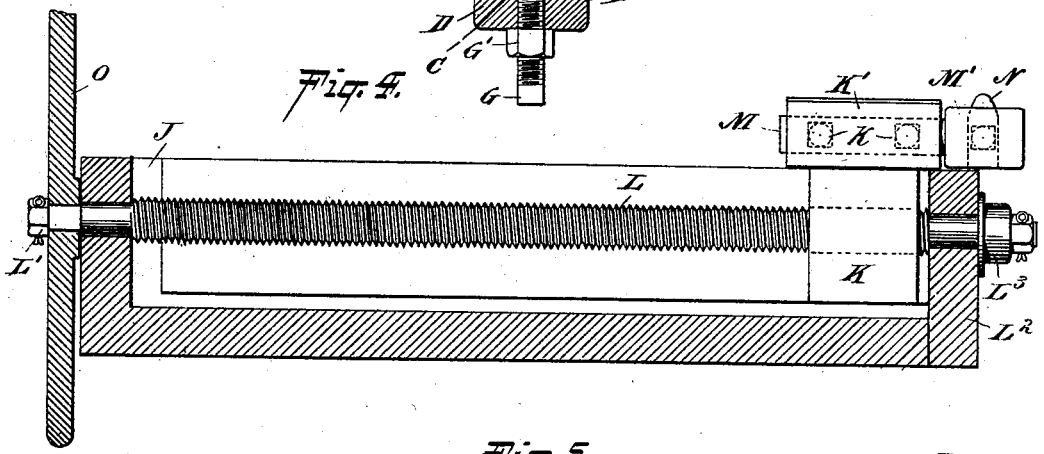


Fig. 5.

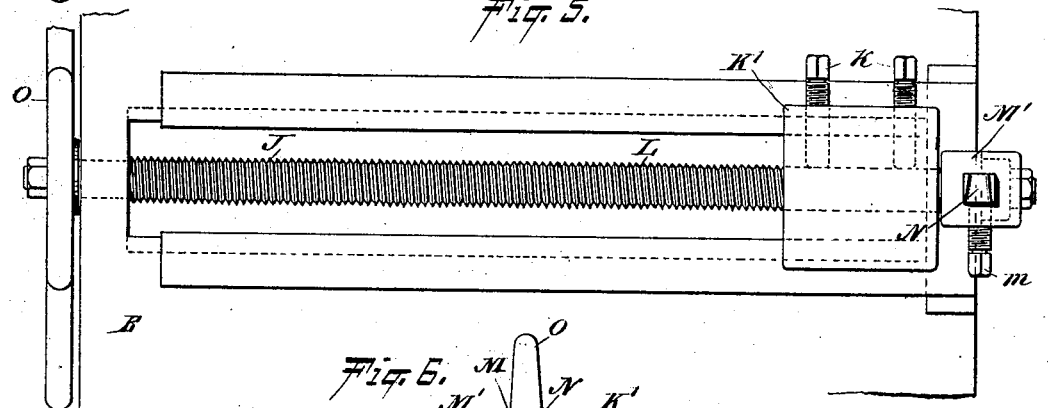
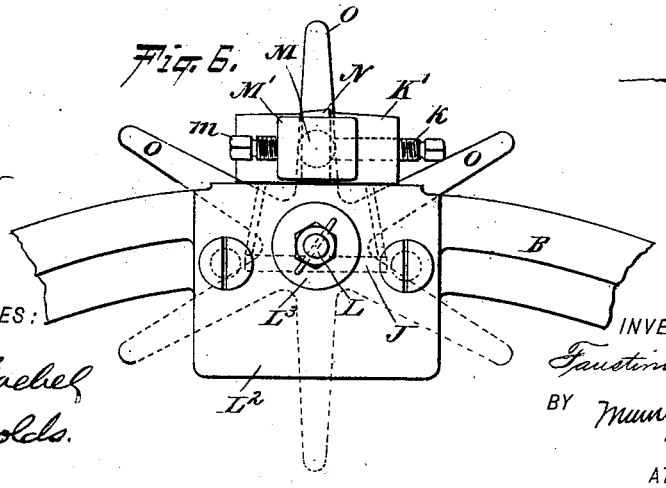


Fig. 6.



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William P. Goebel

H. L. Reynolds.

INVENTOR

Faustino Escalante

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

FAUSTINO ESCALANTE, OF MERIDA, MEXICO.

FIBER-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 646,817, dated April 3, 1900.

Application filed September 15, 1899. Serial No. 730,588. (No model.)

To all whom it may concern:

Be it known that I, FAUSTINO ESCALANTE, of Merida, Yucatan, Mexico, have invented a new and Improved Fiber-Cleaning Machine, of which the following is a full, clear, and exact description.

My invention relates to an improvement in decorticating or fiber-cleaning machines and is especially adapted for use in treating the leaves of manila or hemp.

My invention comprises the novel features which are hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of that portion of the machine which includes my invention. Fig. 2 is a plan view of the wheel, showing a section broken out. Fig. 3 is a sectional detail showing the manner of inserting and holding the scraping bars or plates. Fig. 4 is a section across the wheel-rim, showing the manner of inserting and operating the device for truing the segment-plate. Fig. 5 is a plan view of the same parts as those shown in Fig. 4; and Fig. 6 is a detail view, taken from the side of the machine, of the parts shown in Figs. 4 and 5.

In machines for cleaning fiber of the character of those to which my invention is applicable a wheel B is used, which is mounted upon a central shaft so as to turn and is provided upon its periphery with transversely-projecting bars which coöperate with a segment-plate to crush and scrape the fibers of the manila between them, thus crushing the pulp and rendering the separation of the fiber more easily accomplished. In devices of this character previously constructed transverse scraping bars or plates are attached to the outside of a wheel having a smooth periphery and project at such a distance that the leaves of the plant being treated are whipped over the edge of the plate in such a way as to break the fiber.

One object of my invention is to provide a method of securing the scraping bars or plates to the wheel so that they will project a lesser distance and the whipping of the fiber will be prevented.

Another object of my invention is to construct the wheel in such a manner that a metal turning tool may be mounted thereon and fed across its periphery, so as to engage the concaved surface of the segment-plate and true the same, so that it may be kept at all times in good condition with a smooth surface and accurately centered relative to the wheel.

The wheel B is journaled within a frame A and is turned in any suitable manner. The rim of the wheel is provided with a series of transversely-extending channels C, which extend inwardly from the periphery a sufficient distance to accommodate the greater portion of the scraping bars or plates E. The channels C, which hold the scraping-bars, lie between the two arms D and D′, which form an inward loop of the rim. The plates E are constructed with the advancing outer corner rounded, as clearly shown in Fig. 1, and are a little wider at one end than at the other, so that one end of the plate comes closer to the segment-plate A′, held on the frame A, as shown in Fig. 1, than the other. The leaves of the manila are introduced between the wheel and the segment-plate A′ at that edge of the wheel where the scraper-plates are farthest removed from the segment-plate and are gradually worked across the wheel until they have been operated upon by the opposite edge of the scraper-plates. The channels C, which hold the plates E, do not extend squarely across the rim of the wheel, but are given a slight inclination, as shown in Fig. 2, the object of this being to influence the transverse movement of the manila. The incline of the plate will have a tendency to move the manila transversely of the wheel.

The scraper-plates E are provided with notches *e* in their inner edges, which are adapted to receive the shanks of bolts H, by which the plates are secured in place, said bolts being provided with lock-nuts *h*.

The part D′, which forms one wall of the channel C, has an opening *d*′ of sufficient size to permit the head of the bolt H to freely pass through the same. The other wall D has a hole registering with the hole *d*′ and which is of such size as to snugly receive the shank of the bolt. The plates E are thus held closely against the wall D and may thus be securely clamped in place. Beneath each of the scraper-

plates E are placed two adjusting-bolts G, which are threaded into the material at the bottom of the channel C and are each provided with a lock-nut G′, and by this means the projection of the scraper-plates may be accurately adjusted.

The periphery of the wheel B is preferably covered with a plate of sheet metal I, which is preferably of copper or brass. This plate is made of sheets of such a size as to cover one segment of the wheel lying between two adjacent scraper-plates. One end of the plate I is bent downward, as shown at I′, so as to enter the channel or slot C and be held between the scraper-plate E and the wall D of said channel. This end of the plate is thus held securely by the bolt H, which secures the scraper-plate E. The other end of the plate I is securely held in place by means of a plate F, which extends across the wheel-rim next to the forward edge of the scraper-plate, against which edge one edge of the plate F abuts, the plate F being secured to the rim of the wheel B by means of bolts *f*, which pass through the plate and the rim. This construction of the wheel enables the projection of the scraper-plates to be limited to such an amount that there will be no possibility of any whipping action upon the fibers of the plant. It also provides a ready means for adjustment, so that each of the plates may be adjusted to the position which gives the best results.

The frame A, upon which the wheel is mounted, is provided with a slot *a* in its side to permit the introduction of the leaves of the plant. The device for truing up the segment-plate A′ is shown in detail in Figs. 4, 5, and 6. At one point in the periphery of the wheel the rim is provided with an additional slot or channel J, which is larger in area than the channels provided for the reception of the scraper-plates E and is dovetailed in cross-section, as shown by the dotted lines in Fig. 6. Within this channel is placed a block K, which snugly fits therein and is adapted to slide across the rim of the wheel when power is applied thereto. This block has a head K′, which projects beyond the periphery of the wheel and engages the same, so as to hold the block securely. The head K′ is provided with a hole extending substantially parallel with the direction of the channel J and adapted to receive the stem M of a tool-holder, which is held in adjusted position by means of screws *k*. At one end the tool-holder is provided with a head M′, through which extends a hole adapted to receive the body of the turning tool N, which is also held in place by means of a set-screw *m*.

Through the body of the block K extends a threaded hole, which receives a threaded bar L, which lies within the channel J and has its ends journaled in the edges of the wheel-rim. Upon one end of the threaded bar is secured by a nut L′ a star-wheel O, so that the wheel may be used to turn the bar. This wheel also acts as a thrust-bearing to prevent the longitudinal movement of the bar in one direction. The movement of the bar in the other direction is prevented by means of a collar L^3, which is secured upon the opposite end of the bar and outside of the plate L^2. One end of the channel J is closed by said plate L^2, which plate is made removable, being secured by bolts, whereby the block K may be readily inserted within and removed from the channel J.

This device is used in the following manner: When it is desired to true up the segment-plate A′, the block K and the mechanism which coöperates therewith are put in place. Work is started with the block K at one end of the channel J. The tool N is projected at such a distance as to engage the inner surface of the segment-plate A′ and to take a small cut therefrom. The wheel is then started turning and the block K is fed across the wheel-rim by having the arms of the star-wheel O contact with any fixed object, so that the wheel is turned through a small angle at each revolution of the main wheel B. By this means the block is gradually moved across the wheel and the tool N takes a series of cuts from the face of the segment-plate A′. When the block K has reached the opposite end of the channel J, a small portion of the width of the segment-plate will remain undressed. The tool-holder M is then removed from the block and reversed in position, so that the tool lies inside of the block. In this manner the remainder of the width of the segment-plate may be dressed.

By providing a device of this sort upon the wheel B two valuable results are secured. First, the segment-plate may be dressed after the machine has been set up, and as a consequence it will be more accurately centered relatively to the wheel than could otherwise be readily accomplished. In the second place it makes it possible to do this without taking any part of the machine down or to a machine-shop. In localities where a machine of this character is used it often happens that it is a long way to a machine-shop and a very difficult matter to get any work of this character done which involves taking any part of the machine to the shop. With a wheel provided with the device described this may be done at any time and with very little trouble. It is of course understood that when the machine is in use cleaning fiber the turning device described, and illustrated in Figs. 4, 5, and 6, will be removed.

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

1. A decorticating or fiber-cleaning machine, comprising a wheel having channels extending transversely of the rim, scraping plates or bars adapted to lie in said channels with one edge projecting beyond the outer periphery of the rim, means for securing said plates or bars in place, sheet-metal plates each covering a section of the wheel-periph-

ery between adjacent scraping-bars, one end of said plates extending into the channel and being held beneath the scraping-bar, and clamping-plates provided with means for securing them to the wheel-periphery upon the opposite sides of the scraping-bars and thereby holding down the other ends of the sheet-metal plates, and a fixed segment-plate lying outside of the wheel-periphery and coöperating with the scraping-bars, substantially as described.

2. In a fiber-cleaning machine, the combination with a wheel having transversely-extending channels in its rim, and scraping-bars secured in the channels and projecting beyond the rim of the wheel, of a covering for the wheel formed of sections of a size to extend between the scraping-bars, each section of the covering having one end extending down into a channel between the wall thereof and the scraping-bar, and a clamp for securing the other end of the covering to the rim of the wheel, substantially as described.

3. In a fiber-cleaning machine, the combination with a wheel provided with projecting transversely-extending scraping-bars, of a sliding turning tool mounted upon the rim of the wheel, and means for moving the tool transversely across the same, substantially as and for the purpose set forth.

4. In a fiber-cleaning machine having a wheel journaled on its axis and provided with projecting transversely-extending knives or ribs on its periphery, and a fixed segment-plate embracing a portion of said wheel-rim, a truing attachment comprising a recessed guide extending across the wheel-rim, a turning tool mounted to slide upon said guide, and means for feeding said tool across the wheel-rim, said tool being adapted to engage and true the surface of the segment-plate whereby it may be maintained true and in good condition, substantially as described.

5. The combination in a fiber-cleaning machine, of a wheel provided with projecting scraper-plates, and a fixed segment-plate embracing a portion of the wheel and the scraper-plates, the wheel having a tool-guiding channel extending across its rim, with a block mounted to slide in said channel and provided with means for holding a tool, a threaded bar engaging said block to move it and having bearings in the wheel, and a star-wheel secured to one end of said threaded bar whereby it may be turned, substantially as described.

6. The combination in a fiber-cleaning machine, of a wheel provided with projecting scraper-plates, and a fixed segment-plate embracing a portion of the wheel and the scraper-plates, the wheel having a dovetailed tool-guiding channel extending across its rim, with a block mounted to slide in said channel and provided with a projecting head having a hole therein extending substantially parallel with the channel, a tool-holder having a stem fitting said hole, means for securing a tool to one end thereof, and means for turning the threaded bar whereby the block and tool are fed across the face of the wheel-rim, and the inner surface of the segment-plate may be trued or turned in position, substantially as described.

7. The combination in a fiber-cleaning machine, comprising a wheel having projecting scrapers, and an inclosing segment-plate, of a segment-plate-truing device comprising a tool-holder, means for mounting it to slide across the periphery of the wheel, a threaded bar journaled on the wheel and engaging the tool-holder to move it, and means for turning said bar by the rotation of the wheel, substantially as described.

FAUSTINO ESCALANTE.

Witnesses:
JUSTO ACEVEDO,
JNO. M. RITTER.