

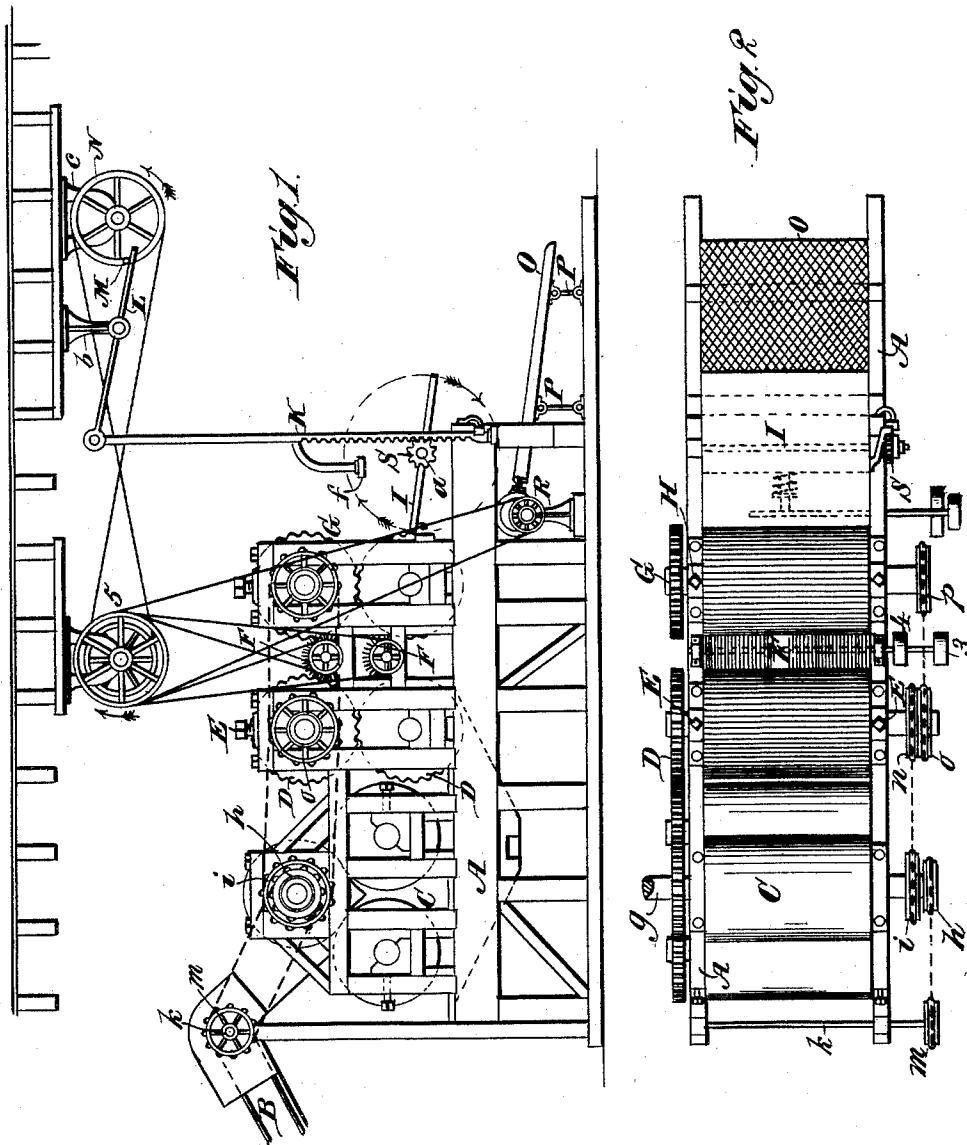
(No Model.)

2 Sheets—Sheet 1.

C. LANAUX & M. E. RENDON.
MACHINE FOR DECORTICATING FIBROUS PLANTS.

No. 468,249.

Patented Feb. 2, 1892.



Witnesses.
Robert Everett.
J. A. Ruttenford.

Inventors.
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By *James L. Norris.*
Atty.

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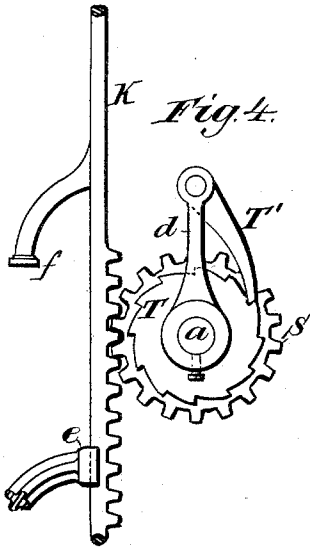


Fig. 4.

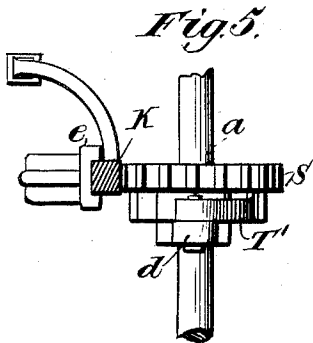


Fig. 5.

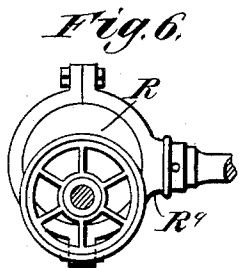


Fig. 6.

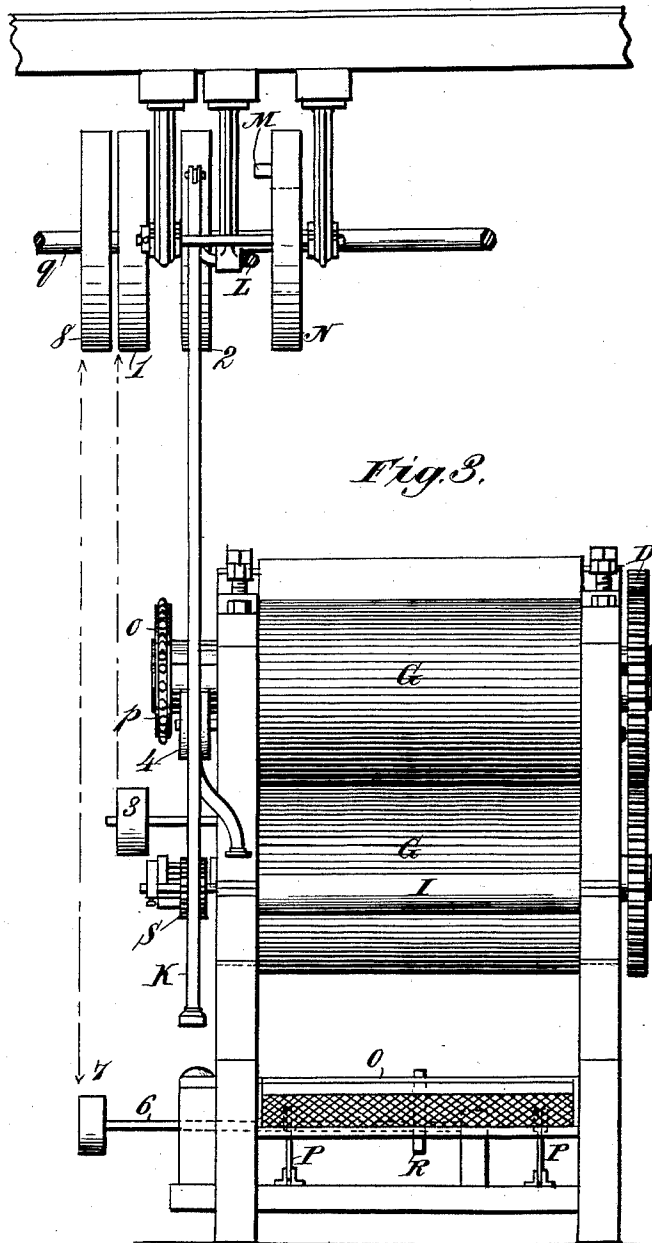


Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES LANAUX AND MANUEL ESPINOSA RENDON, OF MERIDA, MEXICO.

MACHINE FOR DECORTICATING FIBROUS PLANTS.

SPECIFICATION forming part of Letters Patent No. 468,249, dated February 2, 1892.

Application filed June 23, 1890. Serial No. 356,504. (No model.)

To all whom it may concern:

Be it known that we, CHARLES LANAUX, a citizen of the United States, residing at Merida, State of Yucatan, Republic of Mexico, and MANUEL ESPINOSA RENDON, a citizen of the Republic of Mexico, residing, also, at Merida, State of Yucatan, Mexico, have invented new and useful Improvements in Machines for Decorticating Fibrous Plants, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to decorticating-machines for crushing the stalks and separating the fibers from various fibrous plants.

The invention consists in the improved construction and combination of parts in a decorticating-machine, as hereinafter described and claimed.

In the annexed drawings, illustrating the invention, Figure 1 is a side elevation of a decorticating-machine embodying our improvements. Fig. 2 is a plan of the same. Fig. 3 is an end elevation of the machine. Fig. 4 is an enlarged side view of the rack-and-pinion mechanism, illustrating a modification in which the pinion is connected with the pivot of a rocking delivery-table by means of an intermediate pawl and ratchet, whereby while the pinion is actuated by the rack in both directions it will act upon the table in one direction only. Fig. 5 is a plan of the pawl-and-ratchet mechanism. Fig. 6 is an enlarged side view of eccentric mechanism for actuating a shaking screen.

Referring to the drawings, the letter A designates a frame of suitable construction to support the various parts of the machine. At one end of the machine-frame is supported an endless carrier B to convey the fibrous plants to be decorticated, said carrier or conveyor being so arranged as to deliver the stalks to a three-roller mill C, in which each roller is provided with a smooth surface for crushing the stalks. These rollers are supported in one end of the machine and are arranged two below and one above in a manner similar to that of the rollers in a cane-mill.

Adjacent to the mill C is a two-roller mill D, composed of two longitudinally corrugated or fluted rollers arranged one above the other, for the purpose of further crushing the stalks and partly removing their outer covering.

The top roller of the mill D may be made adjustable, so as to be raised or lowered by means of screws E, as usual. The corrugated or fluted surfaces of the rollers in the mill D are cleansed by means of two cylindrical brushes F, placed one above the other and suitably arranged to revolve in reverse directions, whereby they will also assist in feeding and cleaning the fibrous material passed through the machine. After passing between the brushes F the fibrous material is received between the upper and lower longitudinally corrugated or fluted rollers of a two-roller mill G, which is similar to the mill D, except that the corrugations of the rollers may be somewhat finer to more perfectly remove the stalk-covering and separate the fiber. The revolving brushes F are so arranged as to act on the rollers of both mills D and G and keep their surfaces free from matter that might otherwise adhere thereto. The top roller of the mill G should be made vertically adjustable by means of screws H, as shown.

At the exit end of the machine-frame is a rocking delivery-table I, on which is received the material that has been acted on by the decorticating-rollers. The table I is centrally mounted on a shaft or pivot *a*, on which is a pinion S, that is actuated by a vertically-reciprocating rack K, suspended from one end of an oscillatory lever L, which is fulcrumed to a hanger *b*, attached to the ceiling or other support above the machine. In an adjacent hanger *c* is journaled a wheel or pulley N, having a laterally-projecting pin M, adapted to bear down on one end of the lever L at intervals during the revolutions of said pulley, and thereby raise the rack K, attached to the other end of said lever. When the pin M becomes disengaged from the lever L by the continued rotation of the pulley N, the rack K will descend by gravity. These reciprocations of the rack K will actuate the pinion S, which may be fast on the shaft or pivot *a* of the table I, to which a rocking movement is thus imparted. Instead of being fast on the shaft or pivot *a* the pinion S may be loose thereon and have secured to one side a ratchet-wheel T, adapted to engage with a pawl T', mounted on a lug or projection *d*, that is secured to the shaft or pivot *a* of the rocking table, as shown in Figs. 4 and 5, the pawl and

ratchet being so arranged that, though the pinion S is moved in both directions by the reciprocations of the rack K, it will act on the table-shaft or pivot *a* in one direction only.

5 The rack K moves in a guide *e* and carries an arm *f*, that projects above the table I to serve as a stop to limit the tilting movement of the table. By the rocking or tilting movement of the table I the material received thereon

10 is discharged at intervals onto an inclined shaking screen or sifter O, that is supported on flexible jointed standards P at the exit end of the machine. The screen or sifter O is vibrated from an eccentric R through a

15 suitable connection R⁹, Fig. 6, so as to agitate the fiber and complete its separation from the dust and the remains of the disintegrated stalks.

A trough V may be arranged under the

20 mills C and D to receive the fragments of stalks that drop therefrom.

The power for driving the endless carrier B and the mills C, D, and G is applied to the shaft *g* of the top roller in the three-roller

25 mill C, which shaft *g* is provided with sprocket-wheels *h* and *i* at one end.

The endless carrier B is provided with a shaft *k*, having a sprocket-wheel *m*, through which it is driven by a belt or chain from the

30 wheel *h*, while a belt or chain from the wheel *i* drives a sprocket-wheel on the shaft of the top roller in the two-roller mill D and another chain or belt from a sprocket-wheel *o* on the last-named shaft drives a sprocket-wheel *p*

35 on the shaft of the top roller in the two-roller mill G. By this means the endless carrier and the top rollers of all the mills are driven from the same point, and the lower rollers of the several mills are driven from their re-

40 spective top rollers by means of suitably-arranged spur-gears, as shown in Figs. 2 and 3.

At a suitable point above the machine-frame is supported a counter-shaft *q*, having pulleys 1 and 2, from which the pulleys 3 and

45 4 on the shafts of the revolving brushes F are

driven, one of the said belts being crossed, as shown in Fig. 1, so that said brushes will be made to rotate in reverse directions, as required. The pulley N, that actuates the rack K, is driven by means of a crossed belt from

50 a pulley 5 on the counter-shaft *q*, as shown in Fig. 1, and on the shaft 6, that carries the eccentric R for actuating the shaking screen O, is a pulley 7, that is driven by suitable belting from a pulley 8, Fig. 3, on said coun-

55 ter-shaft.

What we claim as our invention is—

1. The combination, with rollers for crushing and breaking the stalks of fibrous plants and a vibratory screen for separating and

60 cleansing the fibers, of an intermittingly-actuated rocking table located intermediate the rollers and screen to receive the crushed material and discharge it onto the screen, substantially as described.

65

2. The combination of a series of mills, each composed of upper and lower rollers, revolving brushes for cleansing said rollers, an intermittingly-rocking table to receive the

70 crushed material, and a vibratory screen onto which the crushed material is discharged by said table, substantially as described.

3. The combination of a series of mills for crushing and breaking the stalks of fibrous plants, a conveyer for feeding the stalks to

75 the first mill of the series, revolving brushes for cleaning the mill-rollers, an intermittingly-rocking table that receives the crushed material from the last mill of the series, and a

80 vibratory screen onto which the crushed material is discharged by said table, substantially as described.

In testimony whereof we have hereto affixed our signatures in presence of two witnesses.

CHAS. LANAUX.

MANUEL ESPINOSA RENDON.

Witnesses:

JOSE DOMINGO, Sr.,

EMILIO MACKINNEY.