

MACHINE FOR DECORTICATING AND BREAKING UP THE FIBERS OF RAMIE, CARAGUATA,
SANSEVIERIA, AND OTHER SIMILAR TEXTILE PLANTS.

APPLICATION FILED OCT. 11, 1909.

3 SHEETS--SHEET 1.

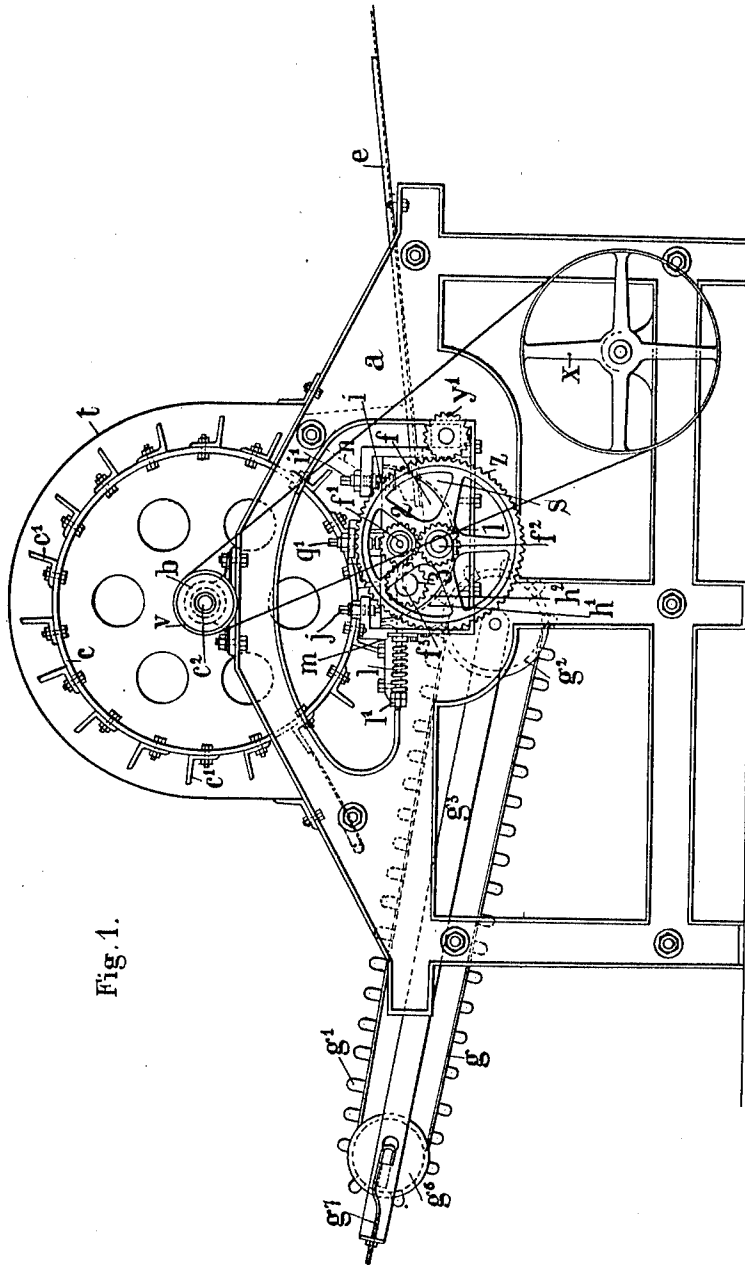


Fig. 1.

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1,001,357.

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3 SHEETS—SHEET 2.

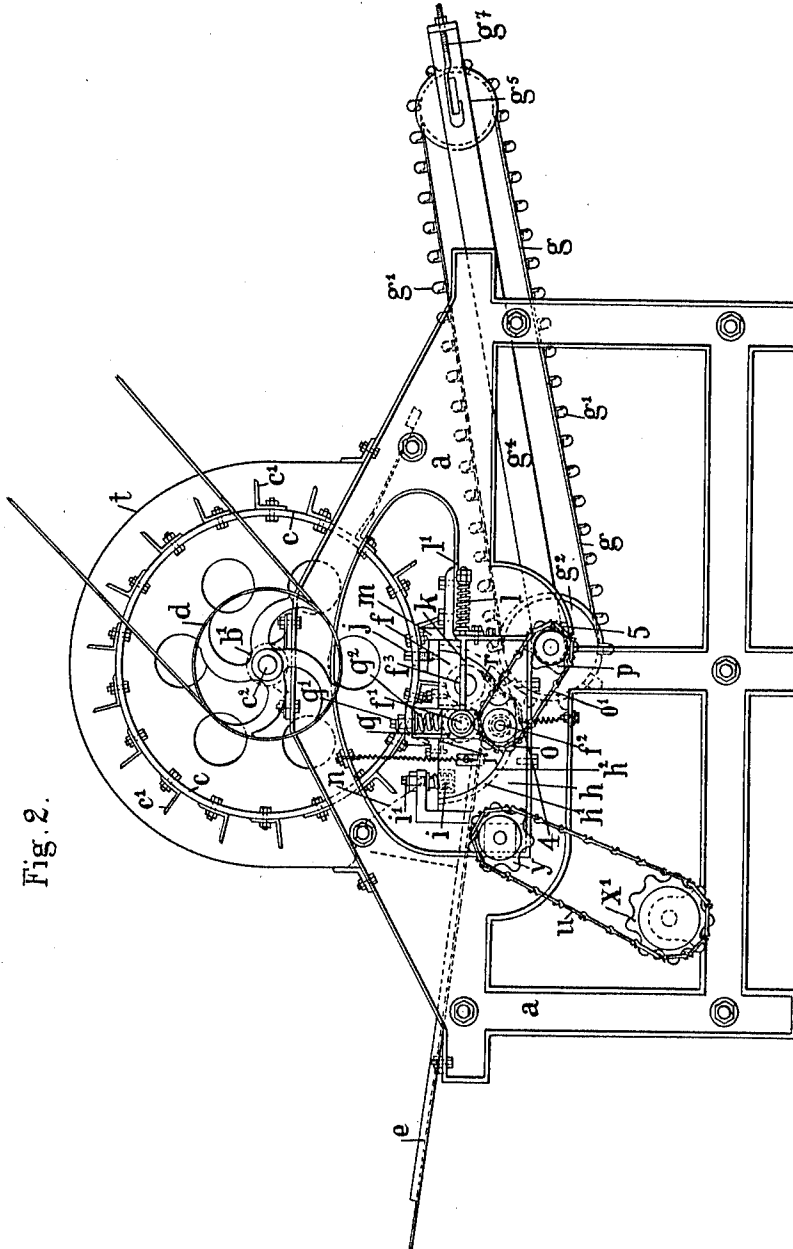


Fig. 2.

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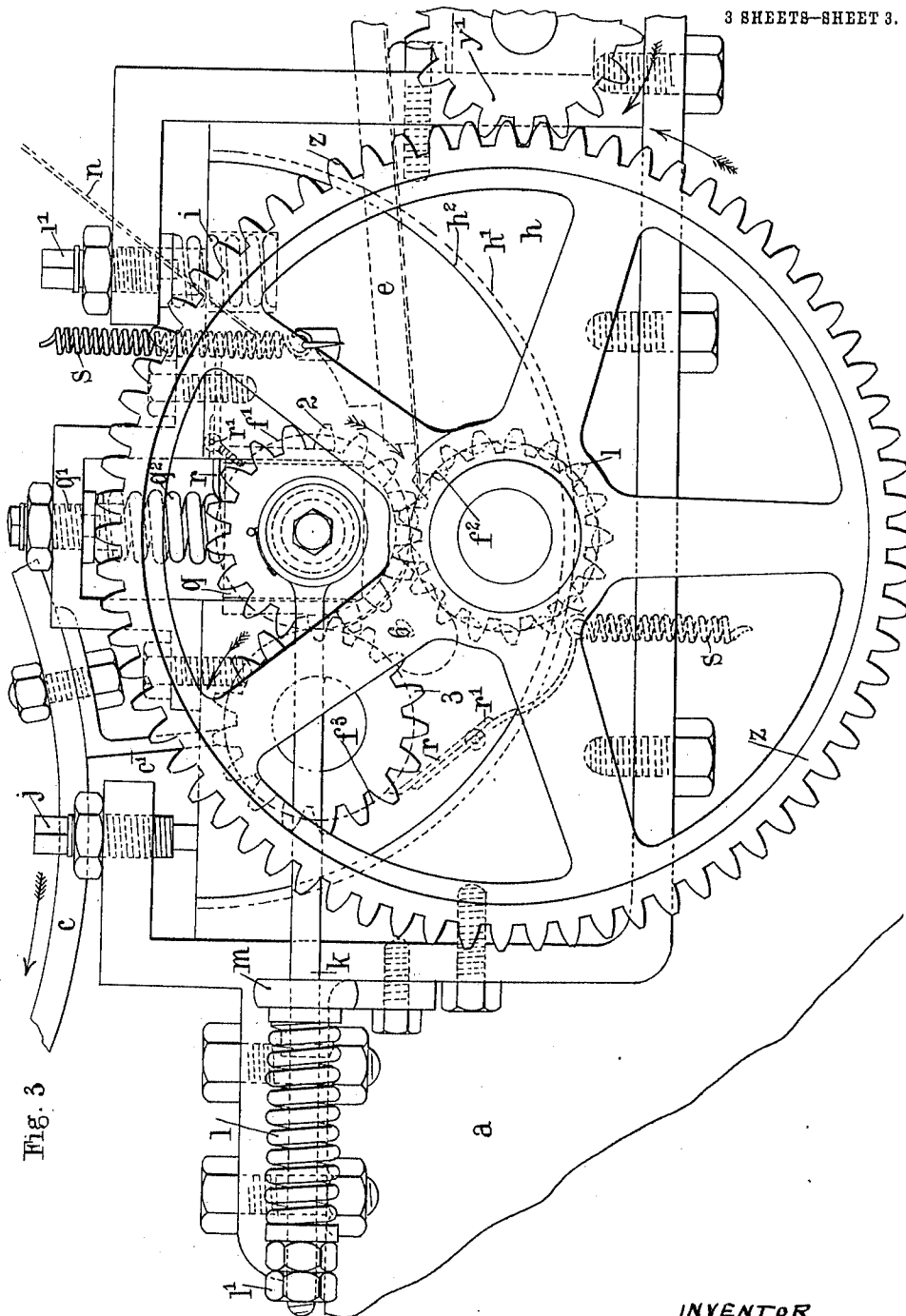


Fig. 3

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UNITED STATES PATENT OFFICE.

LOUIS ERNEST CONORE, OF PARIS, FRANCE.

MACHINE FOR DECORTICATING AND BREAKING UP THE FIBERS OF RAMIE, CARAGUATA, SANSEVIERIA, AND OTHER SIMILAR TEXTILE PLANTS.

1,001,357.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed October 11, 1909. Serial No. 522,187.

To all whom it may concern:

Be it known that I, LOUIS ERNEST CONORE, a citizen of the Republic of France, residing at 17 Rue Chaptal, Paris, France, have invented certain improvements in machines for decorticating and breaking up the fibers of ramie, caraguata, sansevieria, and other similar textile plants, of which the following is a specification.

10 This invention relates to a machine for decorticating and breaking up the fibers of ramie, sansevieria, caraguata and other similar textile plants and the object of my invention is to provide an improved formation, arrangement and mounting of the treating rolls and other features of construction as will hereafter be pointed out.

15 In the accompanying drawings, Figures 1 and 2 are opposite side elevations of a machine embodying my invention in one form; Fig. 3 is a partial side elevation corresponding to Fig. 1 and drawn to a larger scale.

20 Referring to the drawings, the frame *a* of the machine carries at the top the bearings *b*, *b*¹ in which is journaled the shaft *c*² of the drum *c*. The latter carries beating blades *c*¹ and is driven from the pulley *d* fast upon the shaft *c*².

25 Beneath the drum *c* are arranged three crushing cylinders *f*¹, *f*², *f*³ (Fig. 3) to which the ramie or other fibrous material is fed from the platform *e*. Passing between the rollers *f*¹, *f*² the fibrous material is guided by the curved face of the transverse bar *6* 30 to the rollers *f*², *f*³, and while still in contact with the roller *f*³ is subjected to the action of the beater blades *c*¹ on the drum *c*. The rotation of the treating elements feeds the crushed and beaten fibrous material to the 40 endless discharge apron *g* which conveys the same from the machine.

Upon the main frame *a* is mounted a supporting block *h* (Fig. 3) with concaved upper face in which is formed a groove *h*¹. 45 An oscillable bearing block *f* in which the three cylinders *f*¹, *f*², *f*³ are journaled, is mounted upon said bearing block and is formed with a convex lower bearing surface having a flange *h*² which engages in the 50 groove *h*¹. A spring *i* mounted on the screw *i*¹ bears against the upper edge of said block *f* to one side of its center and thus not only limits the oscillation of said block but also serves to press the cylinder *f*³

into contact with the blades *c*¹ of the drum *c*. 55 A stop *j* bearing against the upper edge of said block *f* on the opposite side of the center, limits its oscillation in that direction and also, in conjunction with the spring *i*, serves as means for regulating the approach 60 of the cylinder *f*³ to the blades of the drum *c*. Thus not only is the spacing of the cylinder *f*³ from the drum blades *c*¹ adjustable, but the engagement between the same is assumed a certain resiliency by reason of 65 the spring *i*, and injuries to either through the presence of interposed foreign bodies or an excessive feed of fibrous material, is avoided.

A rod *k* (Fig. 3) mounted at one end upon 70 the spindle of the cylinder *f*¹ and subjected at the other end to the pressure of a spring *l*, presses the cylinder *f*¹ into close contact with the cylinder *f*³. Lock nuts *l*¹ regulate the tension of the spring *l*, and a lug *m* 75 guides the rod *k* and serves as an abutment for one end of the spring *l*. The bearing block *q* of cylinder *f*¹ is mounted in the oscillating block *f* with some slight freedom of horizontal displacement to accommodate 80 varying thickness or toughness of the material passing between this cylinder *f*¹ and cylinder *f*³, and to permit of spacing adjustment through the rod *k*. The bearing block *q* is also vertically slidable to take up various unevennesses in the fibrous material, etc., 85 and its pressure upon the latter may be regulated through the spring *q*² and adjusting nut *q*¹.

While cylinders *f*¹ and *f*³ are smooth it is 90 preferred to groove the surface of *f*². The three cylinders are arranged triangularly and in series being geared together through pinions 1, 2 and 3 fast on their respective 95 shafts. These pinions it will be noted are in series, pinion 2 taking its motion from pinion 1 and pinion 3 taking its motion from pinion 2. Pinion 1 is fast with the gear wheel *z*, driven by pinion *y*¹ fast with the sprocket *y* (Fig. 1) which in turn, through 100 chain *u* is driven from sprocket *x*¹, the latter being fast on the shaft of the belt pulley *x* which receives its motion from the pulley *v* on the opposite end of the drum spindle *c*² from the pulley *d* which receives the initial 105 drive.

The conveyer *g* is driven from a sprocket wheel *o* on one end of the spindle of cylinder

f^2 , the motion of which is transmitted through chain o^1 , to sprocket p fast on the shaft of the pulley g^2 over which the conveyer g travels. The conveyer belt is kept at desired tension by the pulleys g^5 , g^6 at the opposite end of the carrier bars g^4 , tensioning bolts g^7 being provided for this purpose. Cross pieces of angle iron g^1 may be fastened on the conveyer belt to more securely hold the broken and beaten fibrous material.

An inclosing casing t covers the drum c . The apron n (Fig. 3) serves not only to protect the attendant from the swiftly rotating drum, but also to deflect the air currents caused thereby and to facilitate the feed of the fibrous material to the crushing cylinders f^1 , f^2 . Knives r pivoted on brackets r^1 are forced against the cylinders f^2 and f^3 by springs s and scrape off any adhering fibers or fibrous material.

The operation of the machine is obvious. The material is fed to the crushing cylinders at e and if of unusual thickness or toughness, lifts the cylinder f^1 vertically against the action of the spring g^2 , as it passes over cylinder f^2 ; or forces cylinder f^2 back horizontally as it passes between the same and cylinder f^3 , to which it is guided by the curved face of the bar 6 which extends across from side to side of the machine. While still gripped at one end between the cylinders f^2 , f^3 , the free ends of the fibrous ramie leaves, now lying over the upper face of cylinder f^3 , are subjected to the action of the beating knives c^1 of the drum c . As they are gradually fed forward by the rotation of the cylinders, they fall upon the conveyer g or are scraped off the cylinder f^3 by the knife r and fall upon the conveyer g which carries the thus treated material from the machine.

Various modifications which do not depart from the scope of my invention will readily suggest themselves, and I do not limit myself to the details shown.

I claim as my invention:

1. A machine for treating fibrous material of the character described, comprising three crushing cylinders arranged triangularly in series, two of said cylinders being rigid with relation to each other, and the third and interposed cylinder having limited freedom

of vertical and horizontal displacement, substantially as described.

2. A machine for treating fibrous material of the character described, comprising three crushing cylinders arranged triangularly in series, two of said cylinders being rigid with relation to each other, and the third and interposed cylinder having limited freedom of vertical and horizontal displacement under tension, substantially as described.

3. A machine for treating fibrous material of the character described, comprising three crushing cylinders arranged triangularly in series, two of said cylinders being rigid with relation to each other, and the third and interposed cylinder having limited freedom of vertical and horizontal displacement, in combination with a beating drum provided with knives approaching one of said cylinders and serving to decorticate the material as it passes over said cylinder, substantially as described.

4. A machine for treating fibrous material of the character described, comprising three crushing cylinders arranged triangularly in series, two of said cylinders being rigid with relation to each other, and the third interposed cylinder having limited freedom of vertical and horizontal displacement, in combination with a bearing piece carrying all of said cylinders and having limited freedom of oscillation, substantially as described.

5. A machine for treating fibrous material of the character described, comprising three crushing cylinders arranged triangularly in series, two of said cylinders being rigid with relation to each other, and the third and interposed cylinder having limited freedom of vertical and horizontal displacement, in combination with a bearing piece carrying said cylinders and resilient means for limiting the oscillation of said bearing piece, substantially as described.

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

LOUIS ERNEST CONORE.

Witnesses:

GUSTAVE DUMONT,
CHARLES DRUN.