

No. 638,140.

Patented Nov. 28, 1899.

A. PRICE.  
DECORTICATING MACHINE.

(Application filed Aug. 2, 1898. Renewed Apr. 10, 1899.)

(No Model.)

3 Sheets—Sheet 1.

Fig. I.

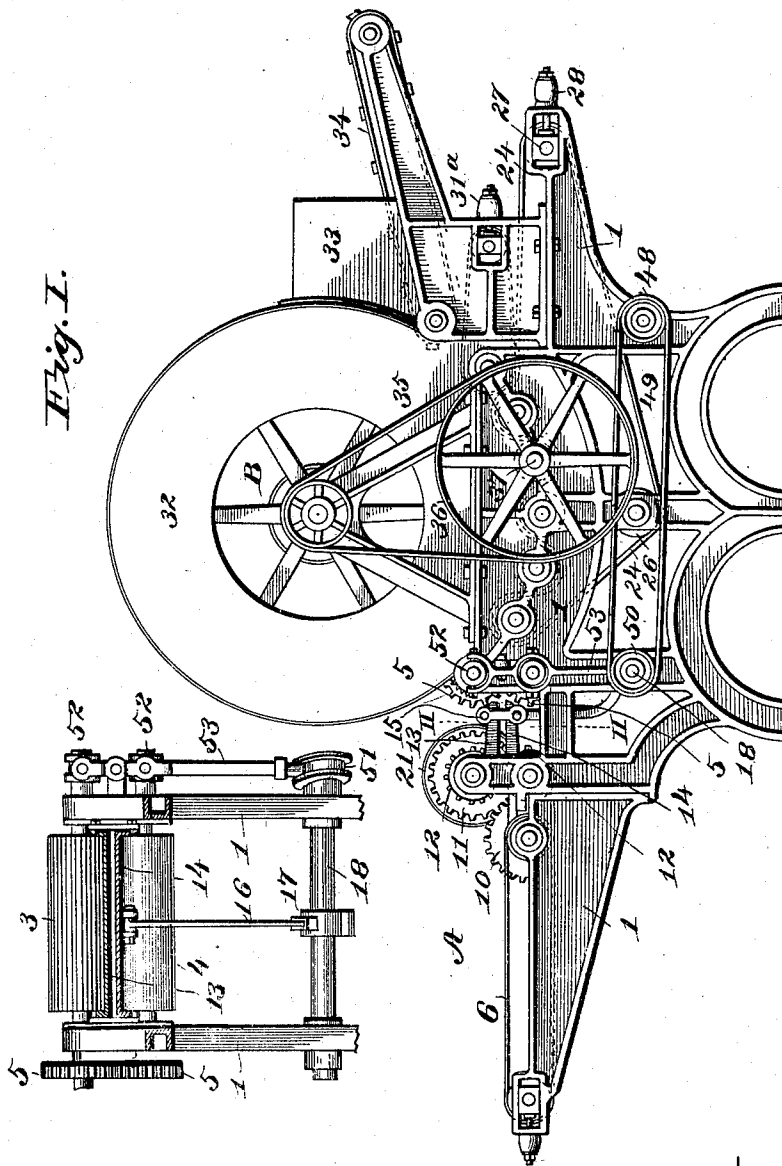
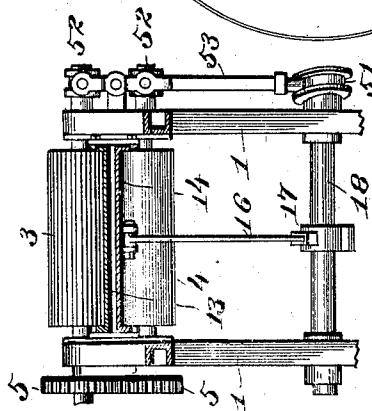


Fig. II.



Witnesses

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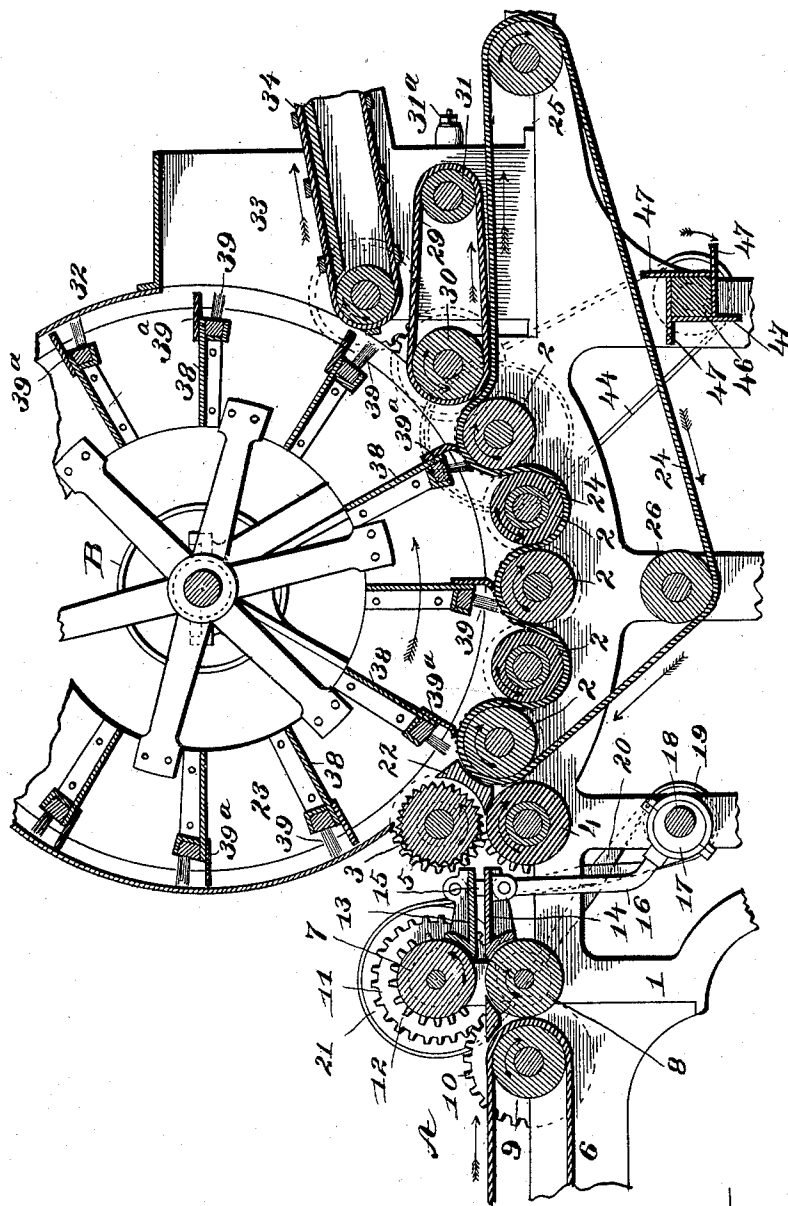
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Fig. III.



WITNESSES

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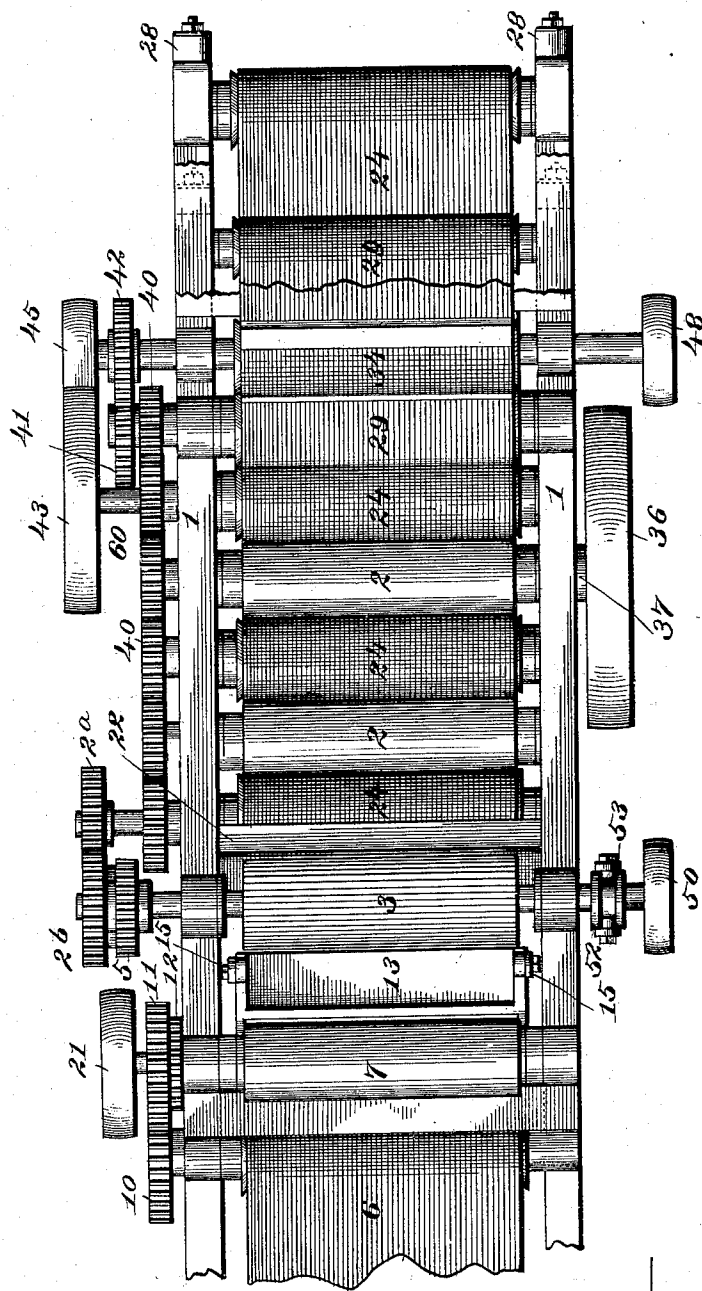
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Fig. IV.



WITNESSES—

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# UNITED STATES PATENT OFFICE.

ALBERT PRICE, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE RAMIE COMPANY,  
OF SAME PLACE.

## DECORTICATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 638,140, dated November 28, 1899.

Application filed August 2, 1898. Renewed April 10, 1899. Serial No. 712,493. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT PRICE, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Decortivating-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a machine for treating ramie; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a side elevation of my machine. Fig. II is an enlarged detail vertical section taken on line II II, Fig. I. Fig. III is a detail vertical section. Fig. IV is a top or plan view with the beater removed.

1 represents a frame supporting a series of rollers 2. The rollers are preferably arranged in an arc of a circle, so that circularly-arranged beaters, hereinafter referred to, operate in conjunction with them all.

A represents the receiving end of the machine, and at this end of the machine there is an upper feed-roller 3 and a lower feed-roller 4, the roller 3 being longitudinally corrugated. These rollers are connected at one side of the machine by means of gear-wheels 5, so that they will revolve in the direction of their arrows, Fig. III.

6 represents a belt upon which the ramie-stalks are placed and fed to the machine, first passing between a pair of feed-rollers 7 and 8, preferably butt-end first, that are located in front of the feed-rollers 3 and 4. The shaft of the roller 9, around which the feed-belt 6 passes, is provided with a gear-wheel 10, that meshes into a similar wheel 11 on the shaft of the feed-roller 7, so that the roller 9 is operated from the roller 7. The roller 7 is connected to the roller 8 by means of gear wheels or pinions 12. Located between the two pairs of feed-rollers are a pair of jaws 13 14 with "flat" faces, by which is meant faces the general direction of which is straight with the line of feed. These jaws are arranged one over the other, with their working or adjacent faces parallel or substantially so, and they are pivoted on separate centers, the upper jaw being preferably pivoted on the journals of

the roller 7 and the lower jaw being preferably pivoted on the journals of the roller 8. As the ramie leaves the rollers 7 and 8, partly crushed, it passes between these jaws to the rollers 3 and 4. The jaws are connected together by a link 15, and the lower jaw is connected by a pitman 16 to an eccentric 17 on a shaft 18, by which the jaws are operated. The link 15 is preferably shorter than the distance apart of the pivots of the jaws, so that a shorter movement of the jaws for a given amount of pressure on the stalks is required than would otherwise be necessary. When the machine is in operation, the jaws have a vertical oscillatory movement imparted to them, and combined with this movement there is a sliding lengthwise movement of the jaws with relation to each other, (due to their being pivoted on separate centers,) so that the ramie-stalks are being bent back and forth as they pass between the jaws, and the jaws rub the stalks in the direction of their lengths, thus breaking and loosening the bark. As the jaws move in either direction from a horizontal position it will be observed that they will approach each other or become closer together at their outer ends, thus producing also a squeezing action on the stalks, as well as the rubbing and bending action. The action of the jaws upon the stalks is much the same as is obtained by taking a stalk in the hands and working it back and forth between the fingers, a common hand method of treating ramie or china-grass. The rollers 3 and 4 take the ramie as it leaves the jaws, and the ramie passes between the roller 3 and a stationary concave block 22, and it is then brushed over the sharp edge of the block in a downward direction by means of beaters and brushes carried by a fan 23. The fan-shaft carries a drive-pulley B, that receives a belt from a suitable motor.

24 represents a belt approximately as wide as the rollers 2 are long; and which passes around a roller 25 and beneath a roller 26. This belt also passes back and forth over and under the rollers 2, first passing over the roller 2 that is next to the feed end of the machine, then beneath the next roller, then over the third roller, and so on, as shown. The roller 4 and the rollers 2, that the belt 24 passes un-

der, are preferably rubber-faced, so as to provide against danger of injuring the fiber. The roller 25 is journaled in sliding boxes 27, provided with tightening-bolts 28, by which the

5 belt may be kept taut.  
29 represents a belt supported on rollers 30 and 31, the roller 31 having a tightening device 31<sup>a</sup> like that provided for the roller 25.

The casing 32 of the fan has an air-dis-  
10 charge spout 33, so arranged that the bark and refuse matter will be deposited upon a carrier-belt 34.

35 is a belt that passes around a pulley on the fan-shaft and around a pulley 36 on an  
15 extension 37 of the axle or shaft of one of the rollers 2, and the rollers are thus driven from the fan-shaft.

At the outer edges of the radial blades 38 of the fan are arranged the beaters 39<sup>a</sup> and  
20 brushes 39, that sweep over the surface of the rollers 2. The beaters are preferably flexible strips that are secured to the blades, as shown. The air enters the eye of the fan, which produces a forced current of air over the rollers  
25 2 and through the air-discharge spout 33 of the fan. The fan is made to revolve in the direction of the arrow, Fig. III, and the beaters and brushes act to remove the skin or outer coating and the wood from the ramie  
30 fiber. The ramie passes down between the traveling belt 24 and the second roller 2 from the feed end of the machine and again down between the belt and the fourth roller 2 from the feed end of the machine, and as it passes  
35 between these rollers and the belt it is mashed, and upon coming up its bark is removed by the beaters or brushes. In leaving the machine the ramie fiber passes between the belt 29 and the belt 24, both of which are travel-  
40 ing, and produce a forced delivery of the material.

The rollers 2 and the roller 30 are connected by a train of gearing 40, the shaft of the roller 2 that is nearest the feed end of  
45 the machine being extended and provided with a pinion 2<sup>a</sup>, that engages a pinion 2<sup>b</sup> on the shaft of roller 3, whereby the roller 3 is turned. The shaft or axle of the roller 30 is provided with a gear-wheel 41, that meshes  
50 with a gear-wheel 42 upon the shaft or axle of the roller by which the carrier-belt 34 is driven. On the shaft 60 of the last of the series of rollers 2 is a pulley 43, that receives a belt 44, passing thence over a pulley 45 upon  
55 a shaft 46. On the shaft 46 is a wiper composed of flexible blades 47, that clean themselves by centrifugal action, said wiper being arranged to travel in the direction indicated by the arrow, Fig. III, to clean the belt 24 of  
60 the gum, &c., that has been smeared upon it while passing between the rollers 2.

48 indicates a pulley on the shaft 46, which receives a belt 49, (see Fig. I,) that leads to and travels upon a pulley 50 on the shaft 18.  
65 The shaft 18 is thus driven from the shaft 46, and movement from the shaft 18 is imparted to the feed-roller 7 through means of a belt

20, passing over a pulley 19 on the shaft 18 and over a pulley 21 on the shaft of roller 7. On the shaft 18 is a cam 51, located outside  
70 of the machine-frame. The shafts or axles of the feed-rollers 3 and 4 are provided with grooved extensions 52.

53 is a rocking arm having pivotal support intermediate of the rollers 3 and 4 and pro-  
75 vided with jaws arranged to engage in the grooved extensions of said feed-roller shafts 3 and 4. The lower end of the rocking bar 53 depends into the cam 51, and in the travel of the shaft 18 said cam imparts a vibratory  
80 movement to said rocking bar, and the rocking bar in turn imparts a longitudinal movement to the rollers 3 and 4 in opposite directions, thereby causing the ramie, as it travels between the feed-rollers, to be more effect-  
85 ively crushed and rubbed.

It will be understood that the brushes and beaters provide one means and the air-blast  
another or an additional means for removing the bark and other waste matter from the  
90 fiber as the ramie is exposed while being carried over some of the rollers after being carried under other of the rollers 2 by the belt.

While I have described my machine for use in treating ramie, it is of course apparent  
95 that it may be used for treating other like fibrous growths, such as hemp, jute, &c.

I claim as my invention—

1. In a machine for treating ramie, the combination of a series of rollers arranged side by  
100 side, a belt passing and adapted to carry the ramie over one and beneath the next roller of the series of rollers, and beaters or brushes arranged to operate upon the material throughout the series of rollers, substantially as set  
105 forth.

2. In a machine for treating ramie, the combination of a series of rollers, a belt passing and adapted to carry the ramie over one and  
110 beneath the next roller of the series of rollers, and a fan and beaters or brushes arranged to operate upon the material throughout the series of rollers, substantially as set forth.

3. In a machine for treating ramie, the combination of a series of rollers arranged in the  
115 arc of a circle, a belt passing and adapted to carry the ramie over one and beneath the next roller of the series of rollers, and beaters or brushes arranged to operate upon the material throughout the series of rollers, substan-  
120 tially as set forth.

4. In a machine for treating ramie, the combination of a series of rollers, a belt passing and adapted to carry the ramie over one and  
125 beneath the next roller of the series of rollers, and beaters or brushes arranged to act upon the material throughout the series of rollers, and a belt 29 beneath which the first-mentioned belt extends, substantially as set forth.

5. In a machine for treating ramie, the combination of a series of rollers, a belt passing  
130 and adapted to carry the ramie over one and beneath the next roller of the series of rollers, and beaters or brushes arranged to operate upon

the material throughout said series of rollers, and a device for cleaning said belt, substantially as set forth.

6. In a machine for treating ramie, the combination of a series of rollers, a belt passing and adapted to carry the ramie over one and beneath the next roller of the series of rollers, a pair of feed-rollers the upper one of which is corrugated, a concave block arranged between said corrugated roller and the first one of said series of rollers, and beaters or brushes arranged to operate upon the material throughout the series of rollers, substantially as set forth.

7. In a machine for treating ramie, the combination of a series of rollers arranged side by side, a belt passing and adapted to carry the ramie over one and beneath the next roller of the series of rollers, and means for removing bark, &c., from the fiber throughout the series of rollers, substantially as set forth.

8. In a machine for treating ramie, a pair of

rubbing and crushing jaws, independently pivoted, and having flat working faces arranged parallel, or substantially so, in combination with a connection between the jaws, and means for operating the jaws, substantially as and for the purpose set forth.

9. In a machine for treating ramie, a pair of rubbing and crushing jaws, independently pivoted, and having flat working faces arranged parallel, or substantially so, in combination with a connection between the jaws, and means for operating the jaws; said connection being shorter than the distance between the pivot-points of said jaws, substantially as set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

ALBERT PRICE.

In presence of—

A. J. PORTER,

M. S. MCCOY.