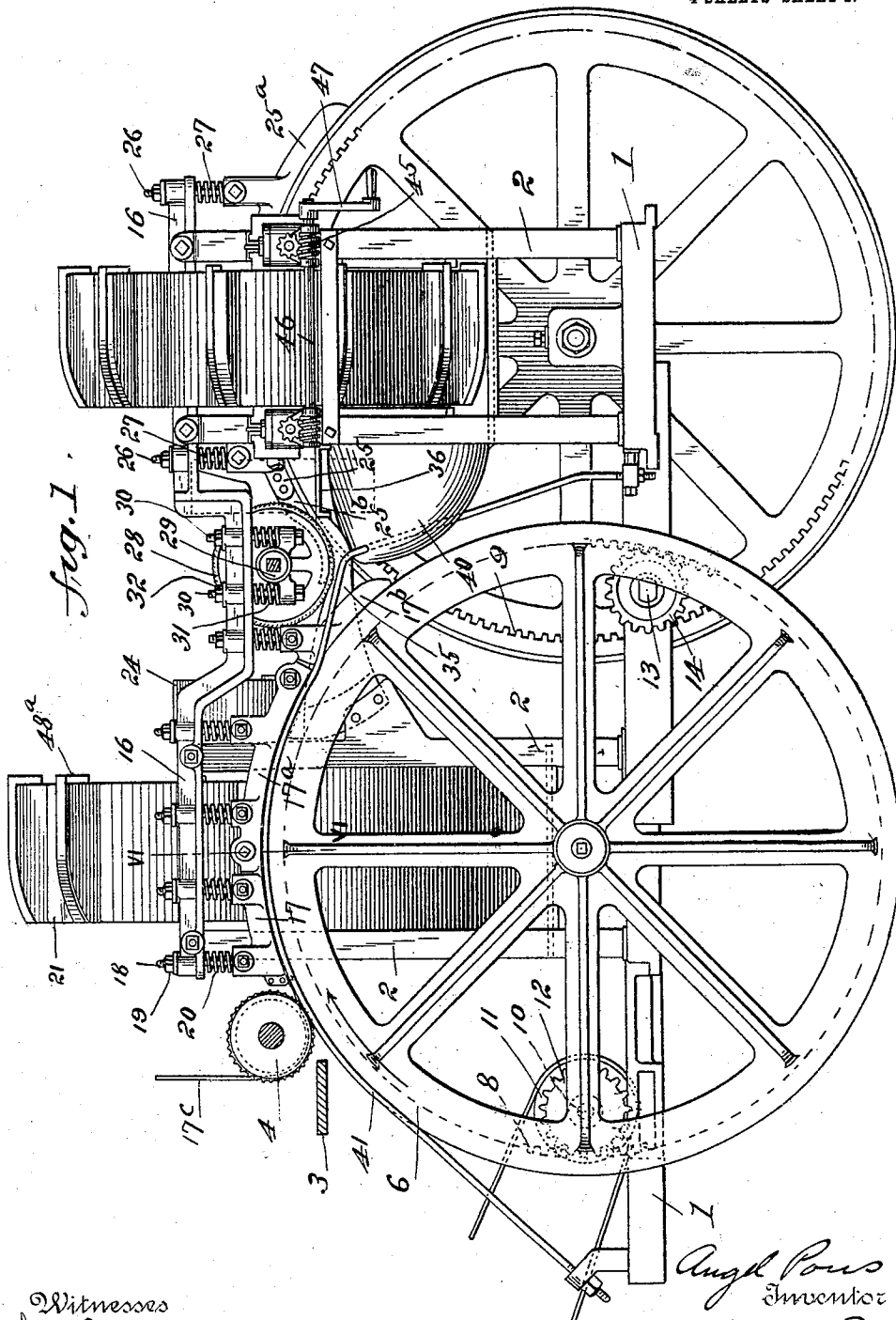


A. PONS.
FIBER CLEANING MACHINE.
APPLICATION FILED NOV. 16, 1906.

1,046,641.

Patented Dec. 10, 1912.

4 SHEETS—SHEET 1.



Witnesses
W. Benjamin
C. H. Kaufmann.

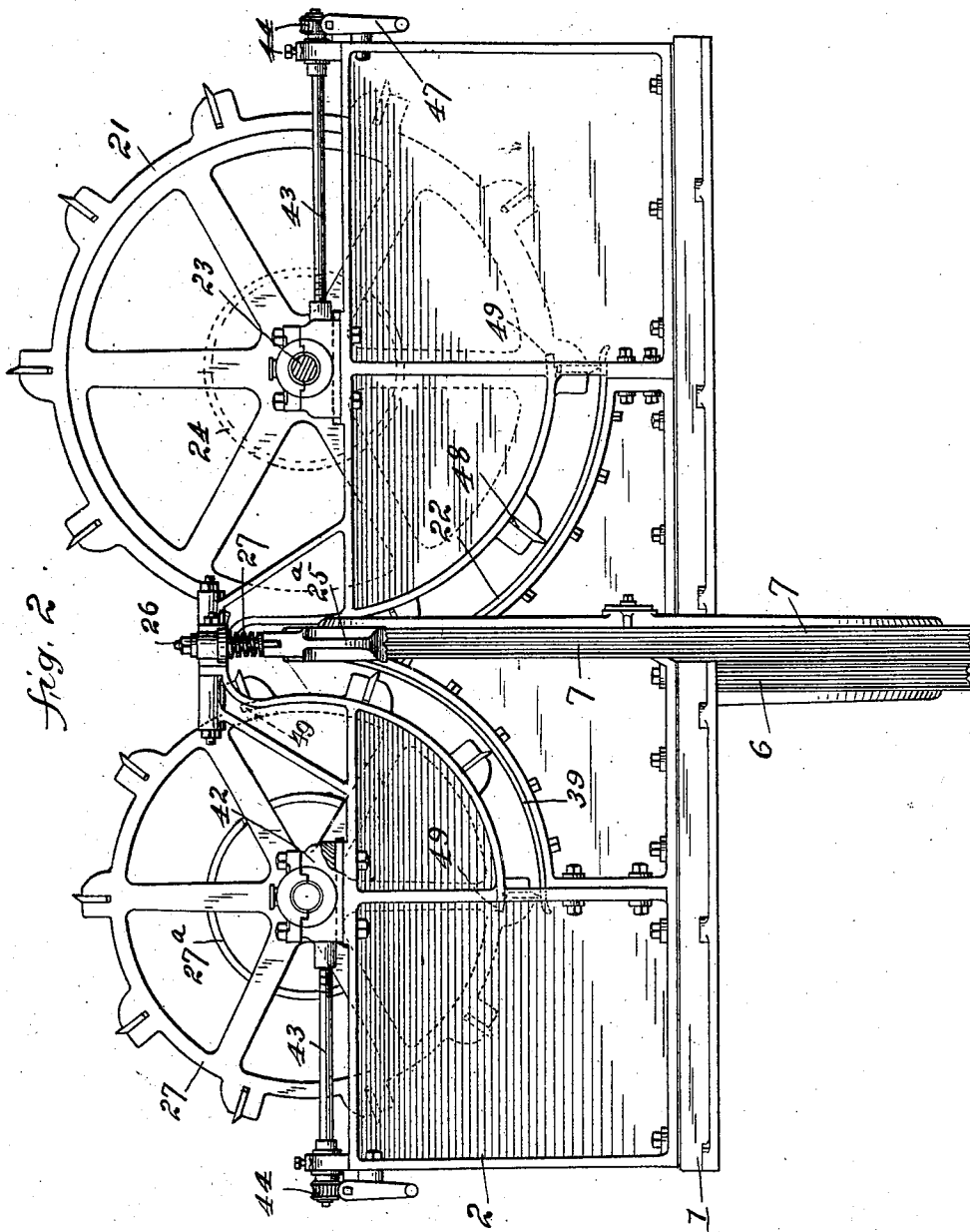
Angl Pons
Inventor
By his attorneys Davis & Davis

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4 SHEETS-SHEET 2.



Witnesses
W. H. Thompson
C. H. Kaufmann

Angel Pons
Inventor

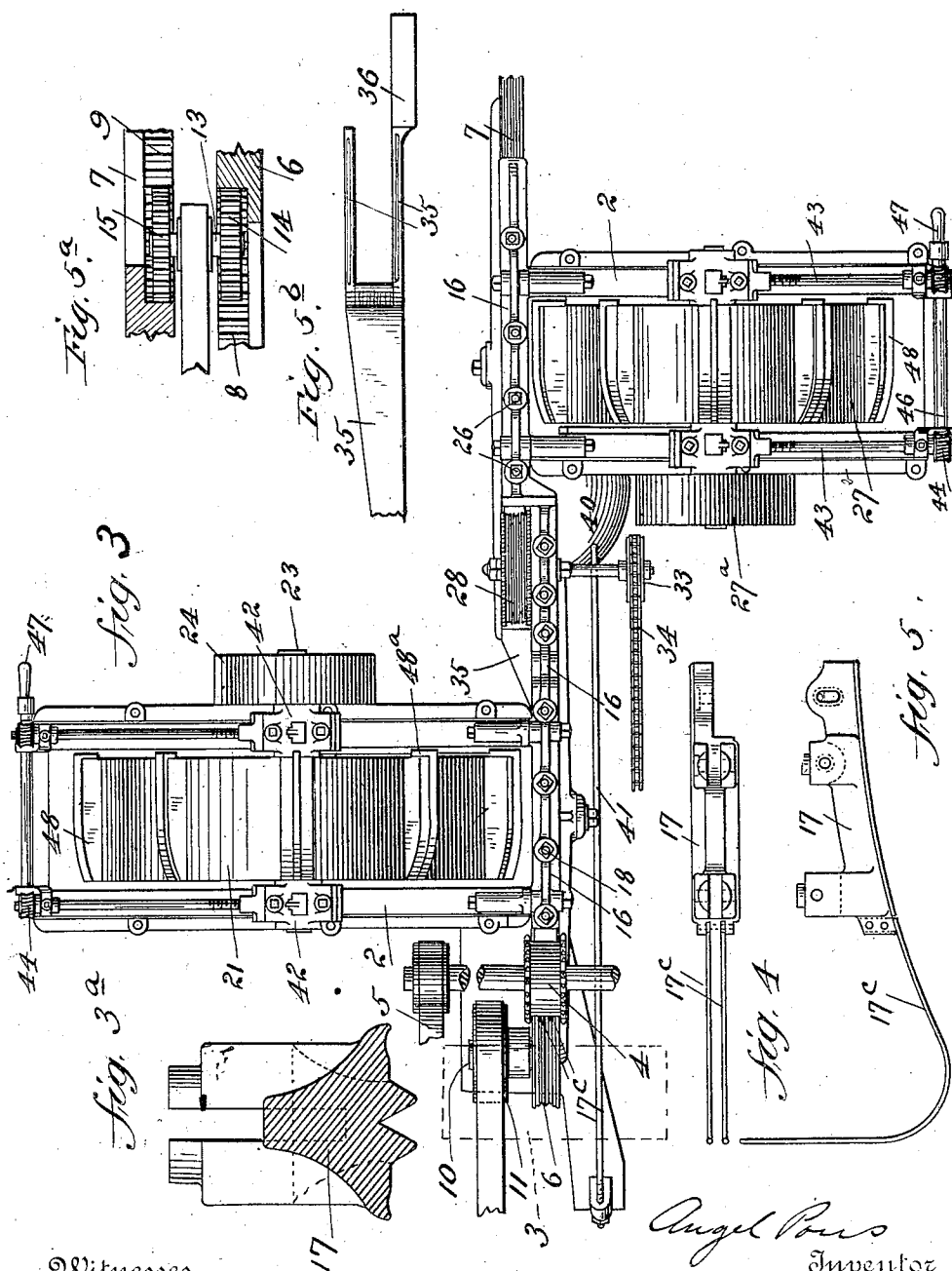
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4 SHEETS-SHEET 3.



Witnesses
W. Benjamin
C. A. Karpman

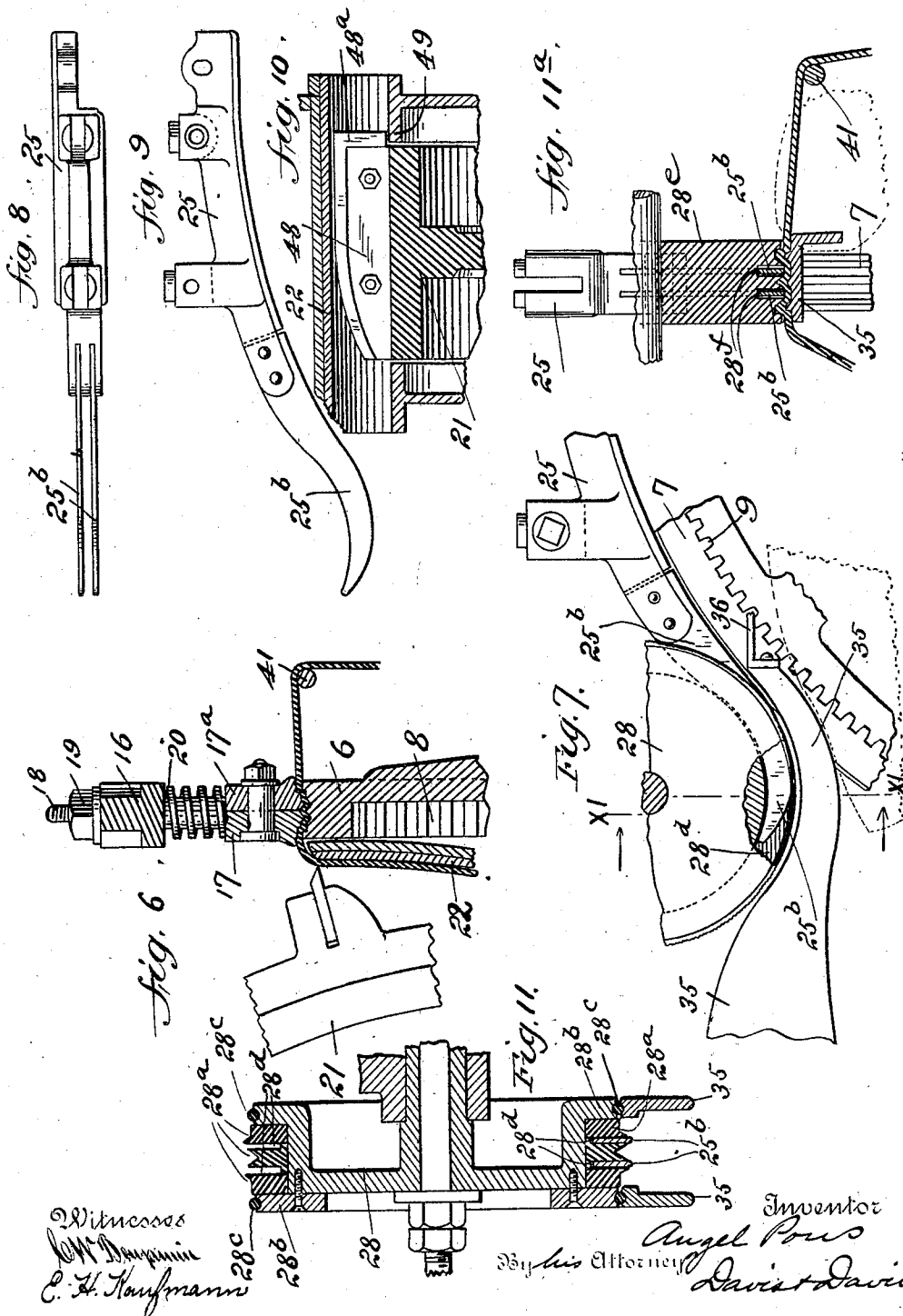
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4 SHEETS—SHEET 4.



Witnesses
C. H. Kaufmann

Inventor
Angel Pons
By his Attorney
Davis & Davis

UNITED STATES PATENT OFFICE.

ANGEL PONS, OF BUFFALO, NEW YORK.

FIBER-CLEANING MACHINE.

1,046,641.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed November 16, 1906. Serial No. 343,654.

To all whom it may concern:

Be it known that I, ANGEL PONS, a subject of the King of Spain, residing in the city of Buffalo, county of Erie, and State of New York, have invented certain new and useful Improvements in Fiber-Cleaning Machines, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a side elevation of the machine, parts being broken away to more clearly show its construction; Fig. 2 a rear end view; Fig. 3 a plan view thereof; Fig. 3^a a detail cross-sectional view of one of the platen segments; Fig. 4 a plan view of the forward platen segment; Fig. 5 a side elevation thereof; Fig. 5^a a detail horizontal sectional view of the overlapping portions of the carrier wheels; Fig. 5^b a detail plan view of the transfer shoe; Fig. 6 a detail sectional view on the line VI—VI of Fig. 1; Fig. 7 an enlarged detail side elevation, partly in section, of the transfer mechanism; Figs. 8 and 9 respectively a plan and side elevation of the forward platen segment of the second carrier wheel; Fig. 10 a detail sectional view showing the cleaning knives and the cleaning bed; and Fig. 11 a vertical sectional view taken on the line XI—XI of Fig. 7; and Fig. 11^a a sectional view of a slightly modified form of the transfer wheel.

My invention relates to machines for cleaning fibers of plants and more particularly to machines for removing the fleshy or pulpy part of leaves (such as American aloe) from the ribs and fibers thereof.

The invention consists of certain improvements in such machines, the object being to simplify and improve the construction thereof.

The invention consists particularly in the improvements in the construction of the type of machine shown in my application for patent filed April 25, 1904, Serial #204678 (patented December 21, 1909, No. 944,106).

Referring to the various parts illustrated in the drawings by reference characters, 1 designates a suitable base or platform on which the apparatus is mounted; and 2 the supporting frame of the machine.

3 designates a support from which the middle portions of the leaves are fed edge-wise to the feed wheel 4. This feed wheel may be driven in any suitable manner, the means shown being a belt 5; and said wheel

is toothed or serrated, or otherwise adapted to engage the leaf to move it to a carrier wheel 6.

Two carrier wheels 6 and 7 are employed. These wheels are vertically arranged in parallel planes, but are out of line with each other; and are so placed that they overlap, as shown in Fig. 1. These wheels are formed with annular grooves in their peripheries and are internally geared as shown at 8 and 9. In the forward part of the machine is mounted a shaft 10 provided with a belt or chain wheel 11 and with a gear 12 which meshes with the internal gear 8 of the carrier wheel 6 and by which said wheel is given a slow rotating movement in the direction indicated by the arrow in Fig. 1.

A shaft 13 is suitably mounted in the frame at the point where the carrier wheels overlap and between said wheels, said shaft being provided with gears 14 and 15, one of which, 14, meshes with the internal gear of the carrier wheels 6; the other one meshing with the internal gear 9 of the carrier wheel 7. By this means the second carrier wheel will be driven by the first one and at the same speed, and the driving gearing will be practically inclosed by the carrier wheels. This is of great advantage in that said gears will be protected, kept clean, and all outside or exposed shafting avoided, except, of course, the shaft at the forward end of the machine.

Suitably mounted on the frame is a supporting bar 16 which is so shaped in plan view as to lie directly over the carrier wheels, as shown clearly in Fig. 3. At the forward portion of the supporting bar directly over the first carrier wheel 6 is secured a series of pressure devices or platens 17, 17^a and 17^b. These devices or platens are curved on their under surfaces to conform to the curvature of the carrier wheel 6, and are longitudinally grooved to receive the ribs on the carrier wheel, the shoes being also provided with ribs which fit within the grooves of the carrier wheel. These pressure devices are connected to the supporting bar by means of bolts 18 which pass through said supporting bar and are provided with nuts 19 on their upper ends by which the distance between the pressure devices or platens and the face of the carrier wheel may be regulated. Between the platens and the supporting bar are arranged pressure coil springs 20, each supporting bolt being sur-

rounded by a spring. The platens 17 and 17^a are each provided with two supporting bolts and pressure springs; and these platens are hinged together at a point directly over the axis of the carrier wheel, as shown clearly in Fig. 1, and to each of these platens or platen segments one of the supporting bolts is connected at a point close to the pivot.

The object of providing the series of pressure platens and to yieldingly force them toward the carrier wheel is to permit leaves of varying thicknesses to be passed under said platens. It will be understood that the platens yield a varying degree depending upon the thickness of the leaves passing under them.

It is the general practice in the operation of machines of this character to crush the fiber bearing leaves by means of rollers, and before they are passed into the machine. In this way all leaves operated upon are crushed to a substantially uniform thickness. The crushing rollers are adjusted from time to time to properly operate upon leaves of different thickness. If, however, the leaves vary in thickness, the platen, or the series of pressure platens, because of its flexibility, will yield sufficiently to receive them.

To the forward end of the pressure platen 17 is secured two guide fingers 17^c. These fingers for a short distance forward of the pressure platens, are in the same arc or curve as the working face of the platen and are then curved upwardly on an arc concentric with the feed wheel 4 and close to the smooth portion of the surface thereof between the serrated portions thereof, the upper ends of said fingers being above the feed wheel on the forward side thereof. The object of these fingers is to direct the in-going leaf under the pressure platen 17 and between said platen and the feed wheel, and to prevent it being carried around by the serrated portion of said feed wheel. These fingers are arranged a suitable distance apart and are in a direct line with the ribs on the working face of the platen section.

At one side of the carrier wheel 6 is arranged a cleaning wheel 21, the axis of said wheel being parallel with the plane of the carrier wheel. This wheel is provided with a curved cleaning bed 22 by which the leaf is supported when being acted upon by the cleaning knives. This cleaning wheel is so placed with respect to the carrier wheel that a vertical plane passing through the axis of the carrier wheel will pass through the transverse center of the cleaning wheel and perpendicular to the axis thereof. This will bring the middle of the cleaning knives directly opposite the joint between the platen sections or segments 17 and 17^a. This is for

a purpose which will be hereinafter set forth. On the shaft 23 of the cleaning wheel is secured a belt wheel 24 by which said cleaning wheel may be driven.

The platen segment 17^b is hinged to the rear end of the segment 17^a and is yieldably held in position by means of a spring and adjustable bolt.

Secured to the support 16, directly over the carrier wheel 7 is a series of pressure devices or platen segments 25 and 25^a which are yieldingly held by means of the adjustable bolts 26 and the coil springs 27 surrounding the bolts and interposed between the support and the platens. These platen segments are hinged together at a point directly over the axis of the carrier wheel 7. Two of the supporting bolts 26 are connected to each platen segment and one of said bolts is connected to each of said segments near the hinge thereof, in a manner similar to the mounting of platen segments 17 and 17^a.

The hinged or pivotal joints between the platen segments are comparatively loose joints so that each segment may have a very slight vertical movement independent of the connected segment. This is accomplished by providing the segments with slightly enlarged bolt holes or very short vertical slots at their pivotal points. The loose joints between the platen segments increase the flexibility of the pressure device and permit of a nice adjustment of the sections through the two supporting bolts.

On the opposite side of the support from the first cleaning wheel is arranged a second cleaning wheel 27^b, the middle of the cleaning blades carried by said wheel being directly in a vertical plane passing through the axis of the carrier wheel 7 and the hinge between the platen segments 25 and 25^a, as shown clearly in Fig. 3 of the drawings, and for a purpose which will appear hereinafter. The periphery of the second carrier wheel and the under surface of the platen segments are grooved in the same manner as the carrier wheel 6 and its co-operating platen segments. The cleaning wheel 27 is provided with a belt wheel 27^a by which it may be driven.

To transfer the leaves from the first carrier wheel to the second carrier wheel I employ a transfer wheel 28. This wheel is supported in bearings 29 suspended from the supporting bar 16 by adjustable bolts 30, springs 31 being interposed between said bar and the bearing 29 so that by adjusting the nuts 32 on said bolts the position of the transfer wheel with respect to the carrier wheels may be varied. The transfer wheel is formed with an annular channel in its face to receive the hard rubber rings 28^a, and these rings are shaped on their peripheries to fit the periphery of the carrier wheel 7; 130

and said transfer wheel is so adjusted that its periphery is brought into proper relation to the periphery of said wheel 7. The flanges 28^b of the transfer wheel are formed with grooves in their peripheries to receive the rubber friction rings 28^c. Between the hard rubber rings 28^a are formed deep, annular grooves 28^d. On the shaft of the transfer wheel is a chain wheel 33 which is driven by a chain 34, said chain receiving its motion from any suitable source of power.

To the forward end of the pressure platen 25 is secured two forwardly extending stripper blades 25^b. The lower edges of these blades for a portion of their length follow the arc or curve of the under surface of the pressure platen 25, and then follow the curve of the transfer wheel to a point beyond the vertical center of said wheel. The grooves 28^d of the transfer wheel are adapted to receive these stripper blades. The object of these blades is to direct the fiber under the pressure platens 25 and to prevent said fiber being carried around by the transfer wheel. The extreme forward ends of the stripper blades lie within the transfer wheel, as shown clearly in the drawings, so that there will be no danger of the fiber being caught thereon. These stripper blades are secured to the platen segment 25 a suitable distance apart and form practically continuations of the ribs on the under side of said pressure platen.

Secured to the machine frame is a guide bar 35, said bar extending rearwardly toward the transfer wheel, the rear end thereof forming a bifurcated segmental shoe which extends under the transfer wheel in close proximity thereto. The rear ends of the members of the bifurcated part of said guide bar extend on opposite sides of the carrier wheel 7, and are connected to the frame of the machine by a bar 36. The upper surfaces of the members of the bifurcated part of the guide bar are grooved as shown in Fig. 11, to receive the friction rings 28^c of the transfer wheel should said friction rings come in contact with said bar. The object of this guide bar is to direct the cleaned fiber under the transfer wheel and between said wheel and the concave part of said bar, from which point the transfer wheel will move said fiber directly into contact with the carrier wheel 7. The forward end of the segment 25 extends close to the surface of the transfer wheel so that the fiber will be delivered by said wheel directly to the carrier wheel and under the forward end of the platen segments.

The second cleaning wheel is provided with a curved concentric cleaning bed 39, and to direct the uncleaned portion of said leaf into said bed I employ a curved sta-

tionary guide 40 secured to the side of the frame, and along which the leaf will move to the bed.

To the frame of the machine is secured a guide rod 41 which is substantially concentric with the carrier wheel 6 and for a portion of its length is parallel with the under surface of the platen segments 17, 17^a and 17^b. This guide rod is on the opposite side of the carrier wheel 6 from the cleaning wheel 21 and serves to support the leaf a short distance from the carrier wheel. By this means the leaf is prevented from becoming entangled in the carrier wheel. This guide rod at its rear end is connected to the guide 40 which directs the leaf to the curved bed of the second cleaning wheel.

The transfer wheel is so located that the cleaned fibers will be delivered to it and by it held against the guide bar 35 before it is released from the platen segments 17^b of the carrier wheel 6. It will also be observed that the transfer wheel will deliver the fiber to the carrier wheel 7 immediately upon its being released from the platen segments 17^b and the carrier wheel 6.

Each cleaning wheel is mounted in adjustable journal boxes 42 which are adapted to be moved by threaded rods 43. These rods are suitably mounted and carry at their outer ends worm gears 44 which are in mesh with worms 45 secured to the transverse rod 46. This rod may be rotated by means of a handle 47. By this means each cleaning wheel may be accurately adjusted toward or from its cleaning bed.

The knives 48 of the cleaning wheels project beyond the rear side of the wheel, that is to say, beyond the side opposite the feed side, as shown at 48^a. The frame of the machine is formed with an inward extending flange 49 concentric with the cleaning bed, the inner edge of said flange lying close to the inner edges of the knives. This flange forms, together with the cleaning bed, a channel through which the projecting portions 48^a of the knives travel. This flange 49 is substantially equal in length to the cleaning bed. The object of the flange 49 is to prevent the fibers when agitated by the air set in motion by the rapidly rotating scraping wheels, from being drawn inward by the scraping wheel and becoming entangled in said wheel or caught between the wheel and the frame.

The operation of the machine may be briefly described as follows:—The leaf to be operated on is delivered to the feed wheel 4 by any suitable means. This feed wheel moves the leaf forward until the middle thereof is engaged by the carrier wheel 6 which carries it under the platen segments. As the carrier moves the leaf across the face of the first cleaning wheel the leaf is cleaned for about one-half its length. As the leaves

of varying thicknesses. move under the platen segments said segments move vertically away from the carrier wheel. The guide rod supports the uncleaned end of the leaf a short distance away from the carrier wheel 6, said leaf moving along said bar under the influence of the carrier wheel until it is delivered to the transfer wheel.

As the cleaned portion of the leaf leaves the bed of the first cleaning wheel the fibers come in contact with the guide bar 35 by which they are guided into engagement with the transfer wheel. When the fibers are gripped by the transfer wheel they are moved over the curved part of the guide bar and delivered to the second carrier wheel, the uncleaned portion of the leaf being directed by the guide 40 onto the bed of the second cleaning wheel. The carrier wheel 7 moves the leaf across the face of this second cleaning wheel, the platens 25 and 25^a gripping the cleaned fibers. By this means the entire leaf will be cleaned from end to end, the cleaned fiber being delivered at the rear of the machine.

The platen segments are hinged together at points directly over the centers of the carrier wheels, and the cleaning wheels are so arranged that the middle of their knives will engage that portion of the leaf in line with the pivot of the platen segments. The platen segments are held on each side of this pivotal point in order that the portion of the leaf directly under said hinge will be firmly held.

It will be readily understood that unless the platen segments are firmly held at their pivotal points and within the vertical plane of the face of the cleaning wheel, there will be a tendency for the cleaning wheel to drag the leaf from between the segments and the carrier wheel. This would be so, particularly at the pivotal point, unless the segments be firmly held. For this reason I arrange the pivot and the holding springs and bolts as described.

In Fig. 11^a a slight modification of the transfer wheel is shown. In this view the wheel 28^a is shown as formed in one piece and provided with the grooves 28^t to receive the stripper blades 25^b.

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

1. A fiber cleaning machine comprising a carrier wheel, a series of pressure devices to hold the plant to be treated against the carrier wheel, said devices being hinged together at their adjoining ends and held against movement in the direction of rotation of the carrier wheel, means for yieldingly holding said pressure devices to permit them to move bodily away from the carrier wheel during the passage of a plant between said devices and the carrier wheel,

a cleaning wheel adapted to engage and clean a portion of a leaf while it is being moved by the carrier wheel, a second carrier wheel, a second pressure device for said carrier wheel, a second cleaning wheel to clean the other portion of the leaf, internal gears formed on the carrier wheels, and intermediate gears carried by the frame and engaging the gears on the carrier wheels, whereby one of said carrier wheels will be driven directly from the other one, and means for driving one of said carrier wheels.

2. A fiber cleaning machine comprising a carrier wheel for moving the plant to be cleaned, a cleaning wheel whose axis is parallel with the vertical plane of the carrier wheel, of a series of non-rotatable platens yieldingly pressed toward said carrier wheel, said platens being held against movement in the direction of movement of the carrier and being hinged together directly over the axis of the carrier wheel, and means for yieldingly forcing said segments toward the carrier wheel, said hinge and said yielding forcing means being within the vertical plane of the face of the cleaning wheel.

3. In a fiber cleaning machine the combination with a movable carrier for moving the plant, of a series of platen segments loosely hinged together so that each may have a slight movement away from the carrier wheel independent of the connected segments.

4. In a fiber cleaning machine the combination with a movable carrier for moving the plant to be treated, of a series of platen segments loosely hinged together at their adjoining ends so that each may have a slight movement away from the movable carrier independent of the connected segments, means for holding said segments against movement in the direction of movement of the carrier and a plurality of adjusting devices connected to each platen segment for yieldingly forcing said segment toward the carrier wheel.

5. A fiber cleaning machine comprising a carrier wheel, pressure means co-acting with said wheel, a cleaning wheel, a second carrier wheel arranged in a plane parallel with the first carrier wheel and out of alinement therewith, said carrier wheels overlapping, a pressure means co-acting with the said carrier wheel, a yieldingly mounted transfer wheel, a rigid shoe coöperating with said transfer wheel and means for directing the cleaned fiber from the first cleaning wheel to the transfer wheel and its coöperating shoe, said transfer wheel delivering it to the second carrier wheel.

6. A fiber cleaning machine comprising a carrier wheel, pressure means co-acting with said wheel, a cleaning wheel, a second carrier wheel arranged in a plane parallel with the first carrier wheel and out of alinement

therewith, said carrier wheels overlapping, pressure means co-acting with the said carrier wheels, a yieldably mounted transfer wheel, a rigid shoe below said transfer wheel and coöperating therewith, means for directing the cleaned fiber from the first carrier wheel to the transfer wheel and its coöperating shoe, said transfer wheel delivering it to the second carrier wheel, said transfer wheel being so located that it will engage the fiber before the leaf is released from the first carrier wheel.

7. A fiber cleaning machine comprising a carrier wheel, pressure means co-acting with said wheel, a cleaning wheel, a second carrier wheel arranged in a plane parallel with the first carrier wheel and out of alinement therewith, said carrier wheels overlapping, a pressure means co-acting with the said carrier wheels, a yieldably mounted transfer wheel, a rigid guide bar to direct the fiber to the transfer wheel, a rigid shoe carried by said guide bar directly under the transfer wheel said shoe being curved on its upper surface to correspond with the circumference of the transfer wheel, said guide bar and shoe forming a support for said fiber, said transfer wheel delivering the fiber from the guide bar and shoe to the second carrier wheel.

8. A fiber cleaning machine comprising a carrier wheel a series of platen segments loosely hinged together so that each may have a slight movement away from the carrier wheel independent of the connected segments and adapted to hold the plants to be treated against the carrier wheel, a feed wheel and guide fingers carried by the forward pressure platen and adapted to extend under the feed wheel, said fingers being curved in close relation with the feed wheel whereby the leaves to be treated will be delivered under said fingers and thence under the forward end of platen.

9. In a fiber cleaning machine the combination with a movable carrier for moving the plant to be treated, of a series of platen segments loosely hinged together at their adjoining ends so that each may have a slight movement away from the movable carrier independently of the connected segments, means for holding said segments against movement in the direction of movement of the carrier, a plurality of adjusting devices connected to each platen segment for yieldingly forcing said segment toward the carrier wheel, a feed wheel adapted to deliver the plant to be treated to the first carrier wheel, forwardly extending guard fingers connected to the forward end of the platen segment adjacent to the feed wheel and in the rear thereof, said guard fingers extending around under the said feed wheel and up in front thereof and acting to strip the plant to be treated from the feed wheel

and direct it under the forward end of said platen segment.

10. A fiber cleaning machine comprising a carrier wheel, a pressure platen co-acting with said wheel, a cleaning wheel adjacent said carrier wheel, a second carrier wheel arranged in a plane parallel with the first carrier wheel and out of alinement therewith, pressure platens co-acting with said second carrier wheel, a transfer wheel, a shoe under said transfer wheel and coöperating therewith, means for directing cleaned fiber from the first cleaning wheel to the transfer wheel, said transfer wheel being adapted to deliver it to the second carrier wheel, and forwardly extending stripper fingers connected to the forward end of the pressure platen over the second cleaning wheel, and under the transfer wheel so that the fiber will be moved by said transfer wheel between the shoe and the fingers and said stripper fingers being adapted to direct the fiber from the transfer wheel under the pressure platen of the second carrier wheel.

11. A fiber cleaning machine comprising a carrier wheel, a pressure platen co-acting with said wheel, a cleaning wheel adjacent said carrier wheel, a second carrier wheel arranged in a plane parallel with the first carrier wheel and out of alinement therewith, pressure platens co-acting with said second carrier wheel, a transfer wheel, means for directing cleaned fiber from the first cleaning wheel to the transfer wheel, said transfer wheel being adapted to deliver it to the second carrier wheel, said transfer wheel being formed with two annular grooves, and forwardly extending stripper fingers connected to the forward end of the pressure platen over the second cleaning wheel, said stripper fingers fitting within the annular grooves in the transfer wheel and being adapted to direct the fiber from the transfer wheel under the pressure platen of the second carrier wheel.

12. A fiber cleaning machine comprising a movable carrier, a series of platen segments loosely hinged together at their ends, a series of adjustable supporting devices connected to each of said platen segments, springs for forcing said platen segments toward the carrier wheel, a plurality of said supporting devices and springs being connected to each of said platens, and one of said connecting devices and springs being arranged on each platen segment near the hinge thereof, the platen segments being formed with radial slots at their hinge points, whereby each may have a slight movement away from the carrier wheel independent of the connected segment.

13. In a fiber cleaning machine the combination with a movable carrier for moving the plant to be treated, and a cleaning wheel, of a series of platen segments loosely hinged

together at their adjoining ends so that each may have a slight movement away from the movable carrier independently of the connecting segments, means for holding said segments against movement in the direction of movement of the carrier, a plurality of adjusting devices connected to each platen segment for yieldingly forcing said segment toward the carrier wheel, and a substantially concentric guide rod supported adjacent to the carrier wheel on the opposite side thereof from the cleaning wheel and adapted to support the unengaged part of the leaf a short distance away from the carrier wheel.

14. A fiber cleaning machine comprising a carrier wheel, a pressure platen co-acting with said wheel, a cleaning wheel adjacent said carrier wheel, a second carrier wheel arranged in a plane parallel with the first carrier wheel and out of alignment therewith, pressure platens co-acting with said second carrier wheel, a transfer wheel, means for directing cleaned fiber from the first cleaning wheel to the transfer wheel, said transfer wheel being adapted to deliver it to the second carrier wheel, and forwardly extending stripper means connected to the forward end of the pressure platen over the second cleaning wheel, said stripper means being adapted to direct the fiber from the transfer wheel under the pressure platen of the second carrier wheel.

15. A fiber cleaning machine comprising a carrier wheel, pressure means co-acting with said wheel, a cleaning wheel, a second carrier wheel arranged in a plane parallel with the first carrier wheel and out of alignment therewith, said carrier wheels overlapping, a pressure means co-acting with the said second carrier wheel, a yieldably mounted transfer wheel, means for varying the position of the transfer wheel with respect to the second carrier wheel, and means for directing the cleaned fiber from the first cleaning wheel to the transfer wheel, said transfer wheel delivering it to the second carrier wheel.

16. A fiber cleaning machine comprising a carrier wheel, a pressure means co-acting with said carrier wheel to hold the leaves while they are being cleaned, a cleaning wheel, knives secured to said cleaning wheel and projecting beyond the rear side thereof, a frame supporting said cleaning wheel, a cleaning bed supported by said frame, and an inwardly extending flange concentric with the cleaning wheel and carried by said frame and extending along the inner edges of the projecting portions of the knives, said flange being substantially equal in length to the cleaning bed, for the purpose set forth.

17. A fiber cleaning machine comprising a carrier wheel, pressure means co-acting with said wheel to hold the leaves in engagement therewith, a cleaning wheel, a second

carrier wheel, a pressure means co-acting with the said second carrier wheel, a yieldably mounted transfer wheel, a rigid shoe co-acting with said transfer wheel, the wheel and the shoe being correspondingly grooved and ribbed whereby they will co-act in gripping the fiber and transferring it from one carrier wheel to the other.

18. A fiber cleaning machine comprising a carrier wheel formed with peripheral grooves and ribs, a series of platen sections arranged above the carrier wheel, each section being formed on an arc of a circle struck from the center of the carrier wheel, the face of said platen being ribbed and grooved to receive the correspondingly grooved periphery of the carrier wheel, a second carrier wheel, a second set of platen sections arranged above said second carrier wheel, the said second carrier wheel and its co-acting platens being correspondingly ribbed and grooved, a transfer wheel arranged between the two carrier wheels and formed with peripheral ribs and grooved, means for yieldingly mounting said transfer wheel, and a co-acting shoe below said transfer wheel, said shoe being grooved and ribbed to receive the face of the transfer wheel.

19. A fiber cleaning machine comprising a carrier wheel, a non-rotative holding device arranged above said carrier wheel and co-acting therewith, a second carrier wheel, a second non-rotative holding device arranged above said second carrier wheel and co-acting therewith, and a transfer wheel arranged between said carrier wheels and a co-acting shoe arranged below the transfer wheel, and means for yieldably supporting the transfer wheel.

20. A fiber cleaning machine comprising a carrier wheel, a series of yieldably mounted vertically-movable platen sections arranged above said carrier wheel, a series of peripheral grooves and ribs formed on the face of the carrier wheel, a series of grooves and ribs formed on the working face of the platen sections and intermeshing with the corresponding grooves and ribs on the carrier wheel, a second peripherally grooved and ribbed carrier wheel, a second series of platen sections grooved and ribbed to co-act with the second carrier wheel, a peripherally grooved and ribbed transfer wheel arranged between the two carrier wheels, a correspondingly grooved and ribbed shoe co-acting with said transfer wheel, and means for yieldably mounting the transfer wheel.

21. A fiber cleaning machine comprising a carrier wheel, a series of yieldably mounted vertically movable platen sections arranged above said carrier wheel, a series of peripheral grooves and ribs formed on the face of the carrier wheel, a series of grooves and ribs formed on the working face of the

platen sections and intermeshing with the
corresponding grooves and ribs on the car-
rier wheel, a second peripherally grooved
and ribbed carrier wheel, a second series of
5 platen sections grooved and ribbed to coact
with the second carrier wheel, a transfer
wheel peripherally grooved and ribbed on
its face, a co-acting shoe located below said
transfer wheel and correspondingly grooved

and ribbed on its working face, and means 10
for yieldably mounting the transfer wheel.

In testimony whereof I hereunto affix my
signature in the presence of two witnesses
this 13 day of Nov. 1906.

ANGEL PONS.

Witnesses:

WM. L. FOX,

HOWARD C. RICE.