(No Model.) 3 Sheets—Sheet 1.

O. PAGAN.

MACHINE FOR BREAKING AND SCUTCHING VEGETABLE FIBER, &c.

No. 264,960. Patented Sept. 26, 1882.

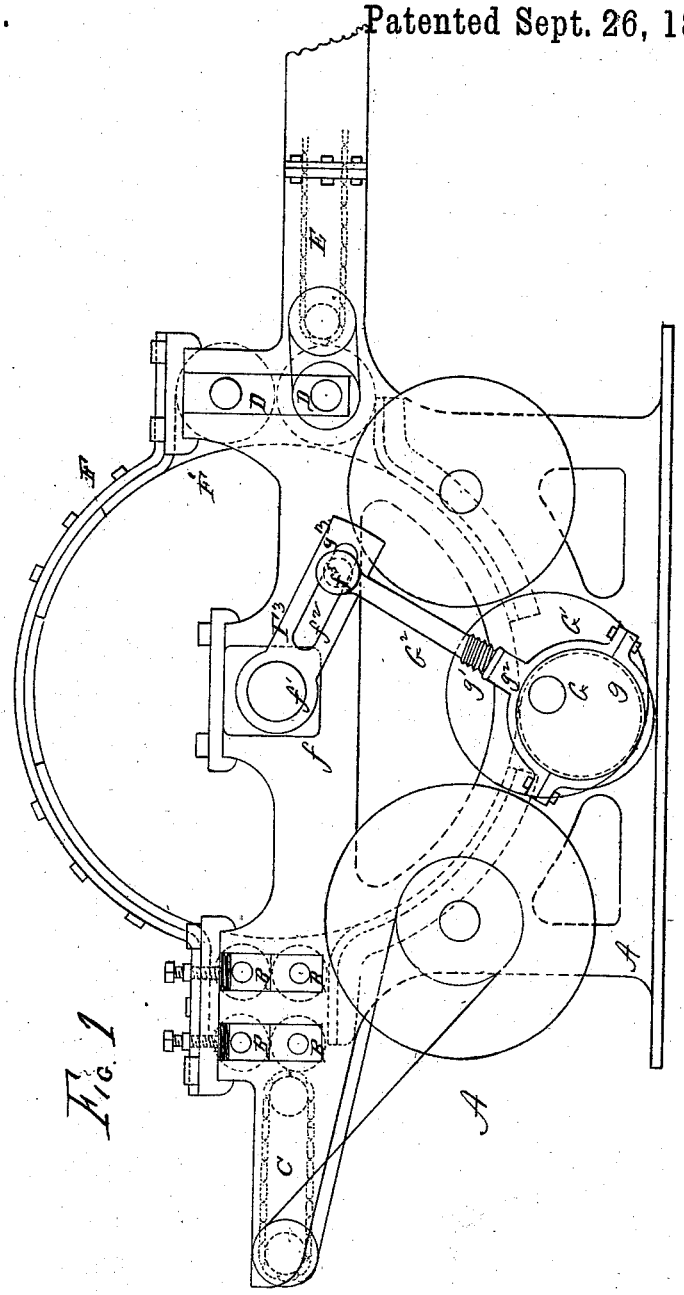

FIG. 1

Witnesses:
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(No Model.)

3 Sheets—Sheet 2.

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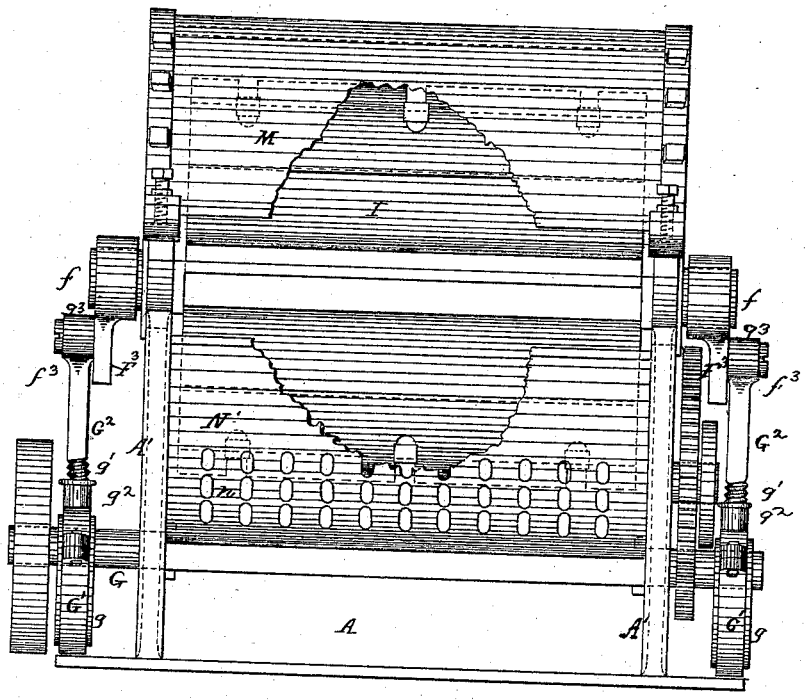

Fig. 2.

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INVENTOR

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(No Model.)

3 Sheets—Sheet 3.

O. PAGAN.

MACHINE FOR BREAKING AND SCUTCHING VEGETABLE FIBER, &c.

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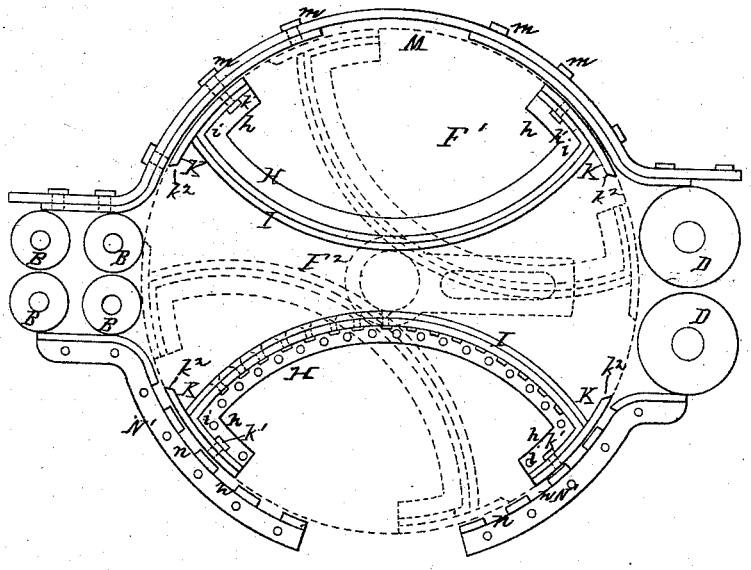

Fig. 3

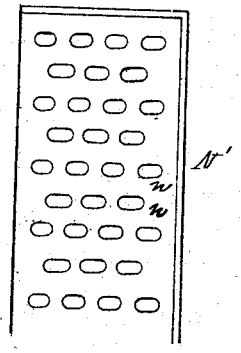

Fig. 4

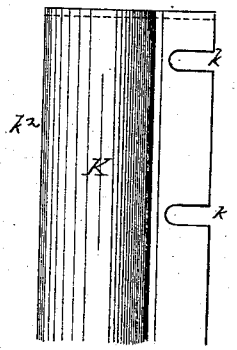

Fig. 5

WITNESSES:

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UNITED STATES PATENT OFFICE.

ORESTES PAGAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO DIONYSIUS M. MARTINEZ, OF SAME PLACE.

MACHINE FOR BREAKING AND SCUTCHING VEGETABLE FIBER, &c.

SPECIFICATION forming part of Letters Patent No. 264,960, dated September 26, 1882.

Application filed May 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, ORESTES PAGAN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Breaking and Scutching Vegetable Fiber; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figure 1 is a longitudinal side elevation. Fig. 2 is a front view, partly broken away, the breaking-rollers being removed. Fig. 3 is a transverse vertical section of scutching-cylinder. Fig. 4 is a plan of open bottom, partly broken away. Fig. 5 is a plan, partly broken away, of scutching-blade.

My invention has for its object to provide a machine whereby flax, hemp, ramie, and other vegetable fibers of a like nature may be broken and scutched more rapidly and effectually than heretofore, making a continuous work of the same.

My improvements consist in the peculiar construction and combination of parts hereinafter fully set forth, having reference principally to an oscillating cylinder provided with adjustable blades, as hereinafter fully described.

Referring to the accompanying drawings, A represents the frame of the machine, consisting of two sides or housings, A′ A′.

B B represent the feeding breaking-rolls, which are of ordinary or any suitable construction, and are preferably made in two pairs and corrugated. In advance of these rollers is a feeding-apron or endless traveling band, C.

D D represent the discharging-rollers, which also may be either plain or corrugated, and E is a bearing-off table, consisting of an endless apron.

F is a cylinder located between the feeding-rolls B B and the discharging-rolls D D, and its journals have bearings *f f* in the sides A′ A′.

F^3 is a rock-arm, fastened securely on one of the journals *f′*, and formed with a longitudinal slot, f^2.

G is a shaft provided with eccentrics, and having bearings in the sides A′ A′, and G′ is an eccentric-strap in two sections, encircling a collar, *g*, fast on said shaft.

G^2 is a rod having a threaded end, *g′*, which enters a screw-thimble, g^2, on the strap G′, the opposite end of said rod having an eye or opening, g^3, which receives a wrist-pin or screw, f^3, which is made fast in any desired position in the slot f^2. By adjusting this pin or screw in said slot the throw of the arm F^3 and the extent of oscillation of the cylinder F may be varied. The journal *f* on the other end of the cylinder F and the other end of the shaft G are provided with rock-arm and eccentric connections of the same construction as the above, and designated by similar letters of reference in the drawings; but one of the rock-shafts and one eccentric may be dispensed with, if desired.

The cylinder F is composed of two ends or heads, F′ F′, to which are bolted or otherwise secured segmental ribs H, formed of angle-iron or made L-shaped in cross-section and having flanged ends *h h*. To these ribs are riveted curved plates I I, which extend from end to end of the cylinder, or between the heads F′ F′. These plates are nearest together at the middle of the cylinder, and flare or recede toward the periphery of said cylinder. The space between these plates forms an opening, F^2, for the passage of the fiber fed in by the rolls B B and drawn out or discharged by the rolls D D. This passage is directly through the middle of the cylinder, extends the full length of the same, and is deep enough at all parts to permit the free passage of the fiber through it. The object of the flaring passage F^2 in the cylinder F is to allow the knives or blades K K to have a sufficient amount of movement or stroke to and from the fiber without drawing the same out from between the feeding-rollers B B or the discharging-rolls D D.

K K represent curved blades, having slots *k k* on one edge, through which pass screws *k′ k′*, whereby said blades are fastened to the flanges *i i* of the plates I I. The blades K have beveled edges k^2 k^2, which face each other, as shown. By means of the slots and screws

the blades may be adjusted so as to bring their edges nearer to each other or farther apart, as may be desired.

M represents a plate, which forms a cover for the cylinder, being bolted or otherwise secured to the frame, as shown at *m m*, and N is a bottom, formed in two sections, N′ N′, each having orifices *n n*. This bottom is also rigidly secured to the sides A′ A′, so that the cylinder oscillates between it and the cover M.

The operation is as follows: Rotary motion being imparted to shaft G, it communicates an oscillating movement to the cylinder F, causing the blades to vibrate therewith in arcs of circles, the edge of each blade reciprocating across a horizontal line in the plane of the axis of said cylinder. The material to be broken and scutched is fed in between the rollers B B and passes thence through the opening F^2 in the cylinder and between the plates I I. In its passage said material is subjected to the action of the blades K K, by the edges of which it is struck on its upper and lower sides. This action of the blades effectually scutches the material and cleans the fibers, the dust and waste dropping onto the bottom plate, N, and passing out through the orifices *n n*.

The precise means of communicating motion to the cylinder F may be varied from the one shown. For example, the rotating shaft G may be located above instead of below said cylinder, and the eccentric-shaft may have two collars, one at either end, connected by links with both journals *f′* of the cylinder, as shown in the drawings; or it may have but one such collar and link.

The machine operates to break and scutch by a continuous operation. The fiber fed in and to the rollers B B is by said rollers effectually broken and forwarded to the scutcher F. Entering the latter it is struck on its upper and lower sides by the first pair of blades. Passing thence through the middle of the cylinder it comes between the other pair of blades and is by these subjected to a second scutching action, which effectually removes any shives which may have escaped separation from the fiber by the first pair of blades. From the second pair of blades the fiber is taken by the discharging-rolls D D, these latter taking hold of the fiber as soon as it reaches them and drawing the same out of the scutcher.

I have called the device F a "cylinder;" but I do not limit myself to making it of a true cylindrical form, as the mere shape or outline of this part is not an essential feature of my invention and may be varied at will.

What I claim as my invention is—

1. In a machine for scutching vegetable fibers, a cylindrical scutcher having a double-flaring opening through its middle for the passage of fiber, substantially as shown and described.

2. The cylinder F, having an opening through its middle, in combination with the oscillating blades K K at both sides of said cylinder and both ends of said opening, substantially as shown and described.

3. The combination of heads F′ F′, curved plates I I, and blades K K, substantially as shown and described.

4. The combination of heads F′ F′, ribs H H, flanged curved plates I I, and blades K K, secured to the flanges of said plates, substantially as shown and described.

5. In combination with cylinder F, having a median opening, F^2, blades K K, having slots *k k*, and means whereby they may be fastened and adjusted in position on said cylinder, substantially as shown and described.

6. In a machine for breaking and scutching vegetable fibers, a cylinder comprising two heads or ends, F′ F′, and connecting-plates I I, having two sets of blades arranged in pairs on opposite sides of said cylinder, the edges of the blades of each pair facing or opposing each other, said cylinder having an opening through its middle for the passage of the fiber from one pair of blades to the other pair, substantially as shown and described.

7. In a machine for breaking and scutching vegetable fiber, a cylinder comprising two heads or ends, F′ F′, and connecting-plates I I, arranged to form an opening for the passage of such fiber, and having blades adapted and designed to strike the same in its travel through said opening, in combination with means, substantially as described, for oscillating said cylinder and causing said blades to be reciprocated, substantially as specified.

8. The combination, with an oscillating cylinder, F, comprising two heads or ends, F′ F′, connecting-plates I I, and blades K, of feeding-rolls B B, and discharging-rolls D D, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of May, 1882.

ORESTES PAGAN.

Witnesses:
M. D. CONNOLLY,
JOS. B. CONNOLLY.