

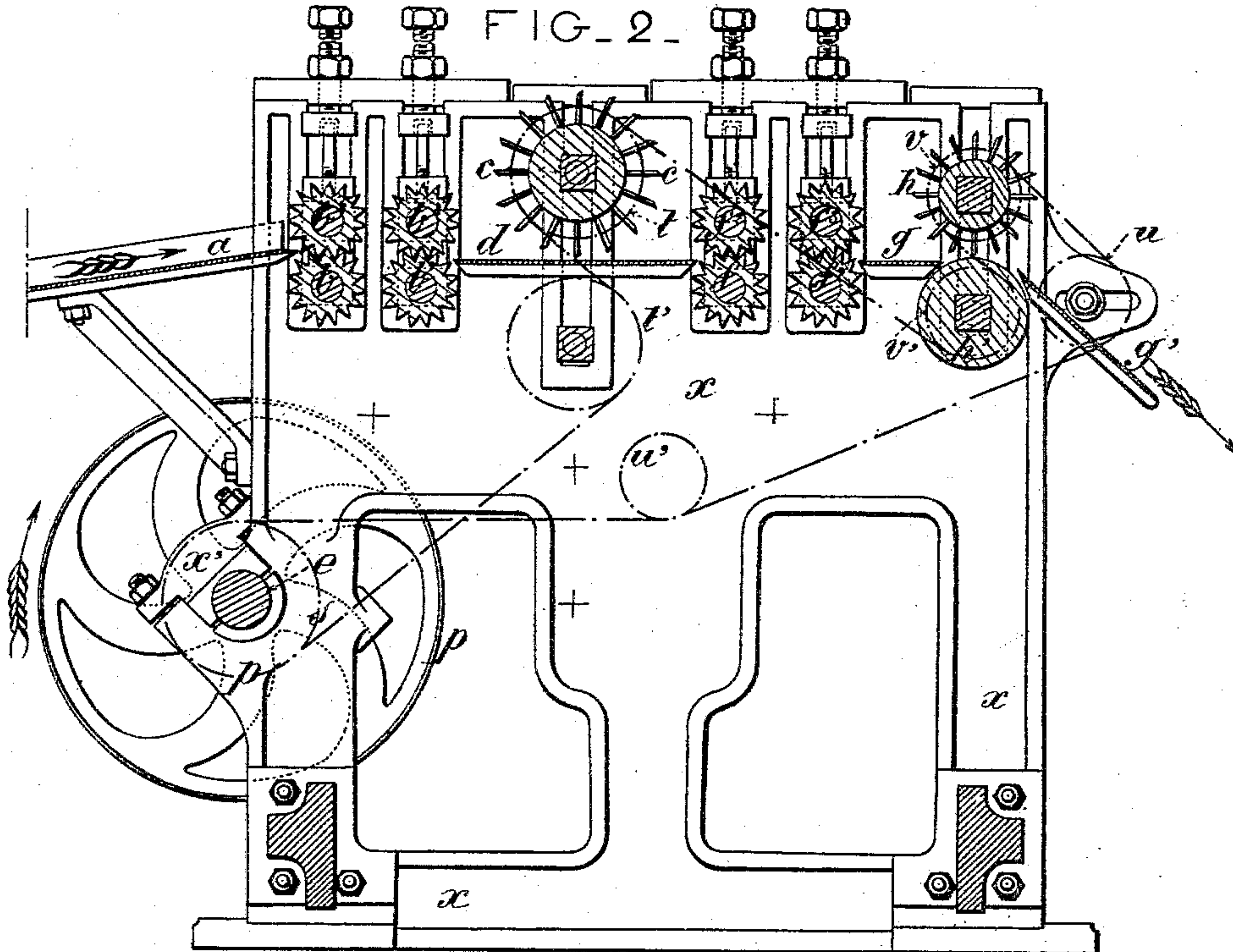
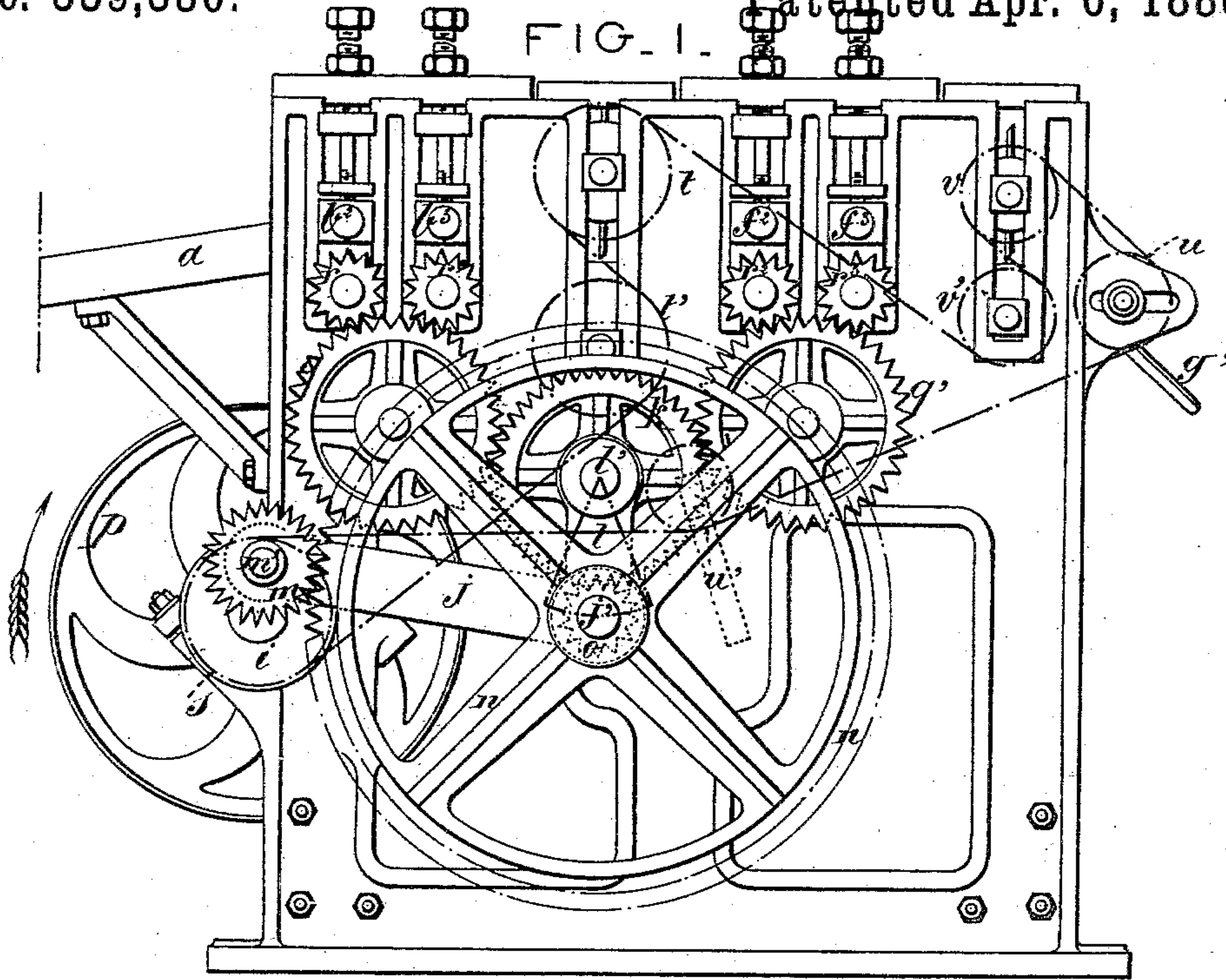
(No Model.)

T. E. SCHIEFNER.

MACHINERY FOR DECORTICATING RHEA OR RAMIE, NETTLES, &c.

No. 339,330.

Patented Apr. 6, 1886.



Henry Sanford Bergman.  
Alphonse Bléven

Thomas Eugene Schiefner



# UNITED STATES PATENT OFFICE.

THÉODORE EUGÈNE SCHIEFNER, OF ESSONNES, DEPARTMENT OF SEINE-ET-OISE, FRANCE.

MACHINERY FOR DECORTICATING RHEA OR RAMIE, NETTLES, &c.

SPECIFICATION forming part of Letters Patent No. 339,330, dated April 6, 1886.

Application filed September 24, 1885. Serial No. 178,060. (No model.) Patented in France August 7, 1883, No. 156,912.

*To all whom it may concern:*

Be it known that I, THÉODORE EUGÈNE SCHIEFNER, manager of Feray & Co.'s Works, of Essonnes, Department of Seine-et-Oise, France, have invented Improvements in Machinery for Decorticating Rhea or Ramie, Nettle, China-Grass, Pita, Yucca, Pine-Apple, Jute, Ananassa, Hemp, and other Textile Matters, (for which I have obtained Letters Patent of France for fifteen years, dated August 7, 1883, No. 156,912;) and I do hereby declare that the following is a full and exact description thereof.

My invention relates to a machine specially intended for decorticating ramie; but it may also be applied to the decortication of any plant and textile fiber—such as china-grass, pita, yucca, pine-apple, ananassa, esparto, flax, hemp, and other fibers. Ramie fibers always bear decortication better in a dry state than in a green condition. The yield is also much greater in the dry state. Still it may be useful and economical to use the fibers immediately they are cut or gathered, and while green without previously drying them.

The apparatus is as compact and light as it can be constructed, so that it is easy to transport to the spot where the crop is growing or is cut or gathered.

In the annexed drawings, Figure 1 is a view of the machine, taken from the side where the mechanism communicates motion to the decorticators. Fig. 2 is a vertical section taken through the plan which shows the mechanism by which the fibers are drawn along.

The principal parts are the first group of four grooved rollers,  $b b' b^2 b^3$ , preceded by the feeding-table  $a$ , succeeded by the guide-table  $d$ , above which the cleaning-brush  $c$  works; then the second group of four grooved rollers,  $f f' f^2 f^3$ , which are followed by the board or shelf  $g$ , the brush  $h$ , in combination with the roller  $h'$ , and finally the guide-table  $g'$ . The axes of the grooved rollers  $b b' b^2 b^3 f f' f^2 f^3$  of the brushes  $c h$  and of the roller  $h'$  move in bearings fitted in the frames of two cast-iron brackets,  $x$ , of fixed size and form. In front the frame  $x$  bears the driving-shaft  $e$  on special cushions  $x'$ , on which the pulleys  $p$  are mounted, and on the front face the plate  $i$ . This plate forms the support to the eccentric axis  $m'$  of

a pinion,  $m$ , which in following the plate  $i$  makes a revolution concentric with the axle  $m'$ . The pinion  $m$  gears with the large toothed wheel  $n$ , which is loose on the shaft  $j'$  for this purpose, to which latter the lever  $l$  is articulated, oscillating at  $l'$  with a connecting-rod  $j$ , which connects the axle  $m'$  with the axle  $j'$ , serving as axis to the wheel  $m$ . The permanent gearing of the pinion  $m$  and wheel  $n$  is transmitted by a pinion,  $o$ , which follows the movements of this latter wheel to an intermediate toothed wheel,  $k$ , the teeth of which work in those of two cog-wheels,  $q q'$ , of equal dimensions, which respectively drive the pinions  $r r'$  and  $r^2 r^3$ , mounted at the end of the shafts of the lower decorticating-rollers,  $b b' f f'$ . By this novel arrangement these working-rollers move in the same direction and at the same speed. At the side where the transmitting-pulleys  $p$  are situated the driving-shaft is also supplied with a pulley or drum,  $s$ , corresponding with which are, first, the pulley  $t$  on the shaft of the first brush,  $c$ ; second, the pulleys  $v v'$  on the shafts of the second brush,  $h$ , and the roller  $h'$ ; and, third, three guide-drums,  $u u u'$ , placed in such a position as to guide and stretch the belt which passes from the pulley  $s$  over the pulleys  $t$  and  $v v'$ . An equal speed of rotation of the brushes  $c$  and  $h$  is thus produced, the same as is the case with the decorticating-rollers.

*Action of the machine.*—The machine works as follows: The rhea or ramie, in either a dry or green condition, is spread out by the operator on the table  $a$ , whence it is pushed forward to the grooved rollers  $b b^2$ . These rollers have a reciprocating rotatory motion, turning a certain number of teeth to lead the matter to the following grooved rollers; then returning, but rotating by a less number of teeth, to bring the ramie to the rear, thus imparting an alternate to-and-fro motion, the latter being less than the former. Thus the matter is progressively conducted, after having undergone the decorticating action of the grooved rollers, under which it passes, sometimes advancing, sometimes receding. The reciprocating rotatory motion of the lower rollers,  $b b'$ , and consequently that of the upper ones,  $b^2 b^3$ , which gear with them, is due to the permanent connection of the eccentric pinion  $m$  and the os-



cillating toothed wheel  $n$ . On the other hand, by means of the same driving-shaft and the endless belt of the pulleys  $s t t'$ ,  $v v'$ , and  $u u'$ , a continuous circular movement at the same speed is imparted to the two brushes  $c$  and  $h$ , the action of which on the decorticated fibers is to expel the skin they still contain, and to comb them, as it were, and thus free them from this skin.

10 Remarks: Finally, it should be mentioned that the frame  $x$  has been designed specially for meeting the requirement for establishing the machine in the shop or works where decortication is to be effected as well as for  
15 mounting it on a wheeled platform in order to facilitate its conveyance from place to place, so that it can be used on the very spot where the matter to be decorticated is gathered or cut.

20 Having now described the construction and action of my invention, I declare that what I claim is—

1. The combination and grouping of the four front and grooved rollers,  $b b' b^2 b^3$ , the  
25 cleaning-brush  $c$ , the four other grooved rollers,  $f f' f^2 f^3$ , and the last cleaning-brush,  $h$ .

2. The means for transmission of motion by wheel-work to the grooved rollers  $b b' b^2 b^3$  and

$f f' f^2 f^3$ , which by couples strictly follow the same course and are animated with the same speed, this transmission of motion being more-  
over characterized by the forward movement imparted to the said grooved rollers being more ample than that of the backward motion, thus producing the progressive to and fro  
35 movements of the matter under treatment.

3. The combination of the toothed wheel-work  $m, n, o$ , and  $k$ , producing the rotatory reciprocating movements of the grooved decortivating rollers.

4. The mode of transmitting motion by means of an endless belt to the cleaning-brushes, by which means they move in precisely the same direction and at the same speed.

5. The general construction, consisting of the grooved rollers, eccentric guide-tables, and endless belt, and the arrangement of the frame which admits of the machine being worked at the works or on the very spot  
45 50 where the crop is cut or gathered.

THÉODORE EUGÈNE SCHIEFNER.

Witnesses:

HENRY SANFORD BERGMAN,  
ALPHONSE BLÉTRY.