

# SANFORD & MALLORY.

## Hemp Brake.

No. 38,916.

Patented June 16, 1863.

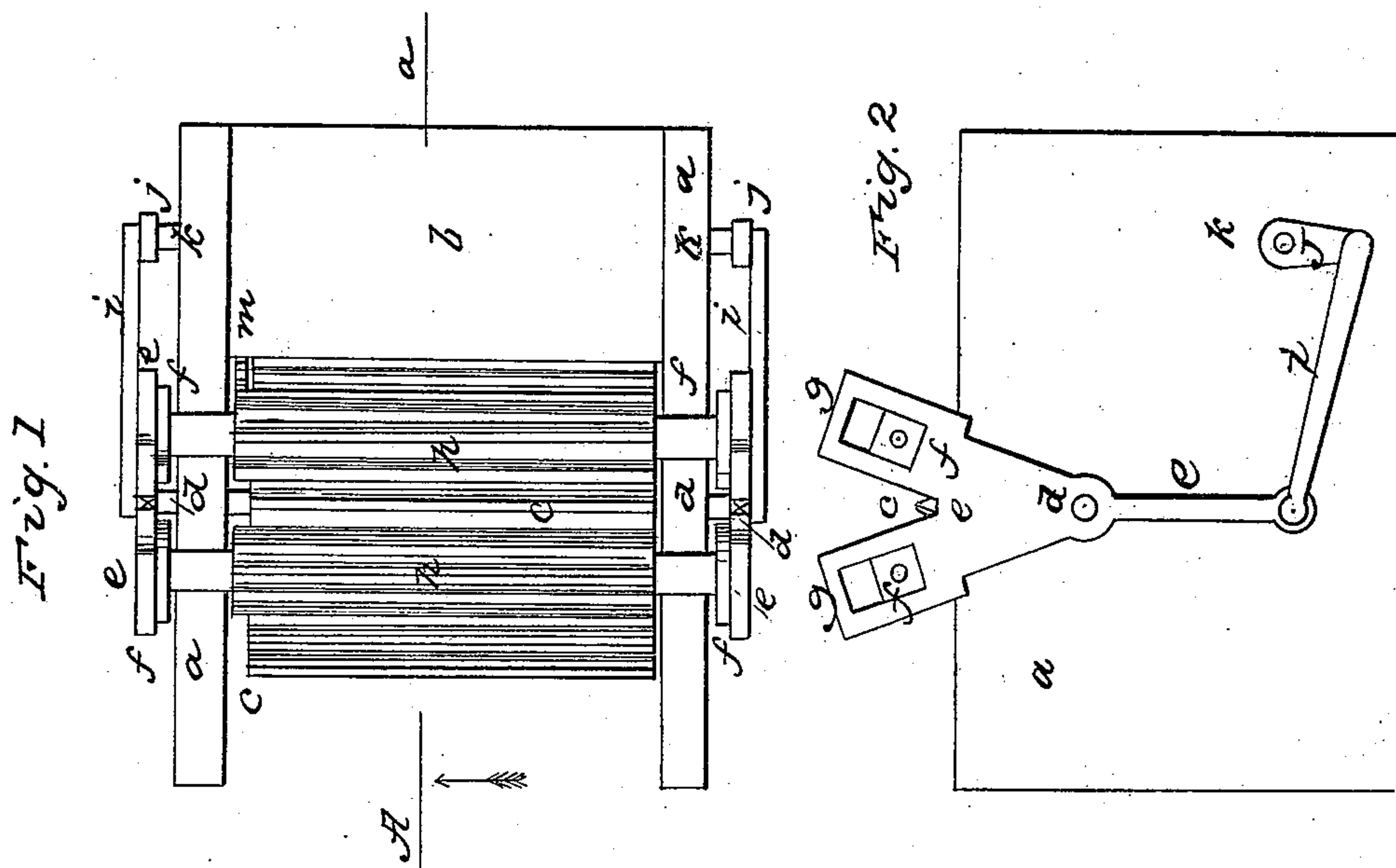
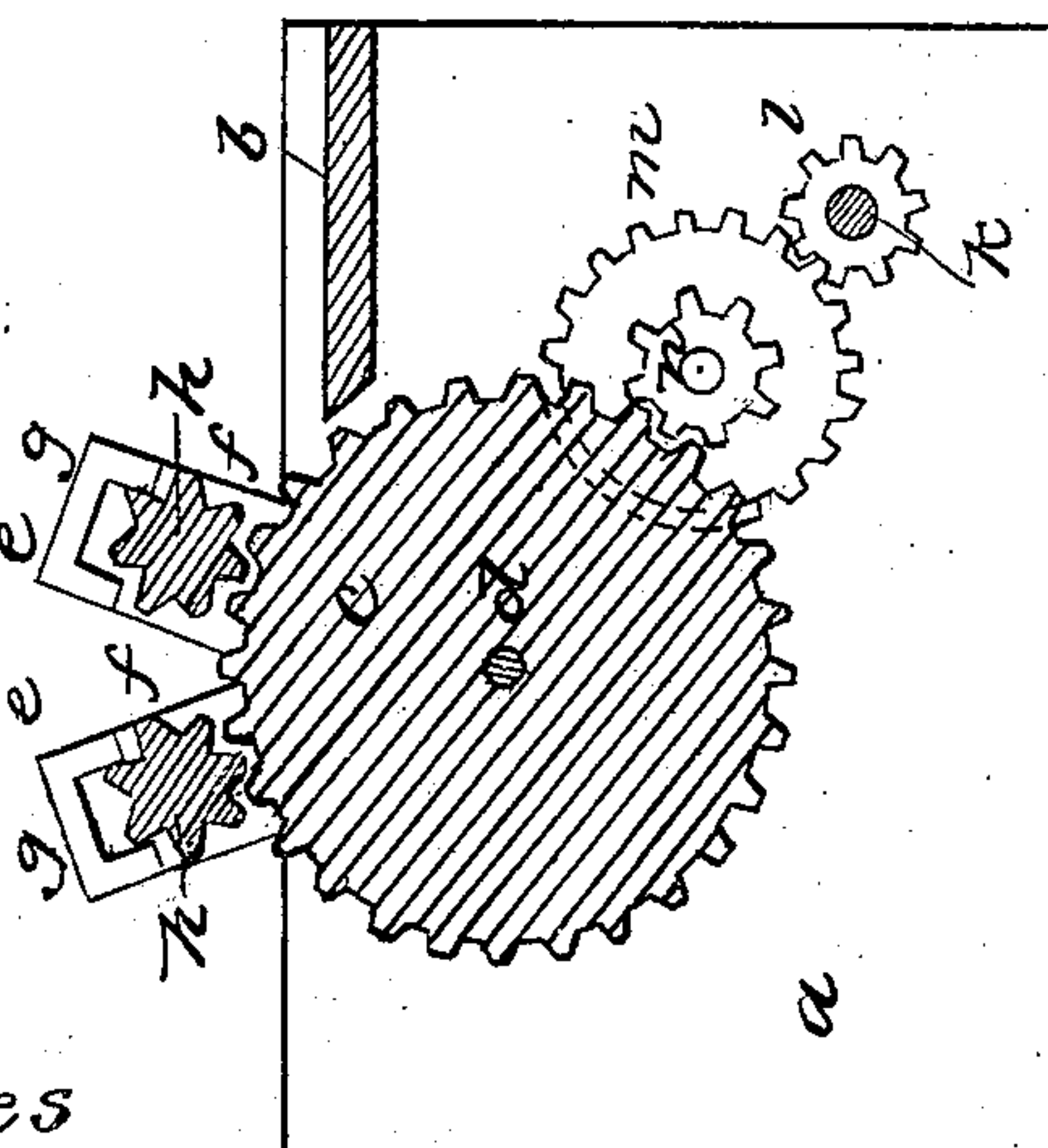


Fig. 3. H. a



Witnesses  
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# UNITED STATES PATENT OFFICE.

GELSTON SANFORD AND JAMES E. MALLORY, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR BREAKING AND CLEANING FLAX, HEMP, &c.

Specification forming part of Letters Patent No. 38,916, dated June 16, 1863.

*To all whom it may concern:*

Be it known that we, GELSTON SANFORD, a subject of the Queen of Great Britain, now temporarily residing in the city of New York, and JAMES E. MALLORY, of the city, county, and State of New York, have invented a new and useful Improvement in the Machine for Breaking and Clearing Flax, Hemp, and other like Fiber-Yielding Plants; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2, a side elevation; and Fig. 3, a vertical section taken in the plane of the line A a, Fig. 1.

The same letters indicate like parts in each of the figures.

Our said invention consists in combining a large fluted roller, which receives a continuous rotary motion from the side where the flax or other substance is fed in, with small fluted rollers having a reciprocating rotary motion concentric with the large roller, the flutes of the said small rollers meshing into the flutes of the large rollers.

In the accompanying drawings, *a* represents the frame, and *b* the table on which the flax or other material to be broken and cleaned is placed, and from which it is fed. Back of this table there is a large roller, *c*, with its periphery fluted longitudinally, as is usual in machinery for this purpose. The shaft *d* of this roller extends through the frame on both sides to receive two levers, *e e*, which vibrate thereon. These levers at their upper ends are forked into two branches, and the branches mortised to receive journal-boxes *f*, which are adapted to slide therein toward and from the axis of the roller *c*, and being forced toward the said axis by india-rubber or other equivalent springs, *g*. To these boxes are fitted the journals of two small rollers, *h h*, fluted to mesh into the flutes of the large roller *c*. The lower arms of these two levers *e e* are connected by joint-links *i i* with cranks *j j* on the ends of the driving-shaft *k*, which cranks impart a vibratory motion to the said levers, which impart to the small fluted rollers *h h* a reciprocating rotary motion on the periphery of the large fluted roller, and from and toward the feeding-table. A pinion, *l*, on the driving-shaft engages a cog-wheel, *m*, which carries a pinion, *n*, the cogs of which engage the flutes of the roller *c* at one end.

In this way a continuous rotary motion is imparted to the large fluted roller, the periphery of which travels from the feeding-table. Other equivalent gearing may be substituted.

The flax or other plant to be broken is presented from the table, and the forward ends thereof placed on the surface of the large roller *c* as the small rollers *h h* are moving toward the feeding-table. In this way the flax is gripped between the flutes of the large roller *c*, and one of the small fluted rollers *h*, which rolls for a short distance onto the flax as it (the flax) is carried away from the feeding-table by the continuous rotary motion of the roller *c*, and then the small fluted rollers vibrate in the opposite direction, traveling for a short distance in the same direction as the large roller *c* and the flax, but faster, and hence rolling on, and thereby tending to break, the woody portion of the stalks. By reason of the operation above described, the flax or other plant is carried forward from the feeding-table and delivered on the other side, and in its passage between the fluted rollers it is gripped and the woody parts broken and rubbed alternately in opposite directions, so as effectually to separate the woody fragments from the fibers.

We do not claim, broadly, the mode of operation by which the material to be broken while being carried forward is acted upon by the breaking and rubbing rollers alternately in opposite directions, as this mode of operation will be found in Letters Patent granted to us, and bearing date the 16th day of September, 1862.

What we do claim as our invention, and desire to secure by Letters Patent, is—

The combination of the large fluted roller having a continuous and regular rotary motion, as described, in combination with one or more small fluted rollers having a reciprocating rotary motion imparted substantially as herein described, the flutes of the small roller or rollers meshing into the flutes of the large roller, and rolling alternately in opposite directions on the periphery thereof, substantially as and for the purpose specified.

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