E. W. LACY.

Hemp Brake.

2 Sheets—Sheet 1.

No. 16,279.

Patented Dec. 23, 1856.

Fig: 1.

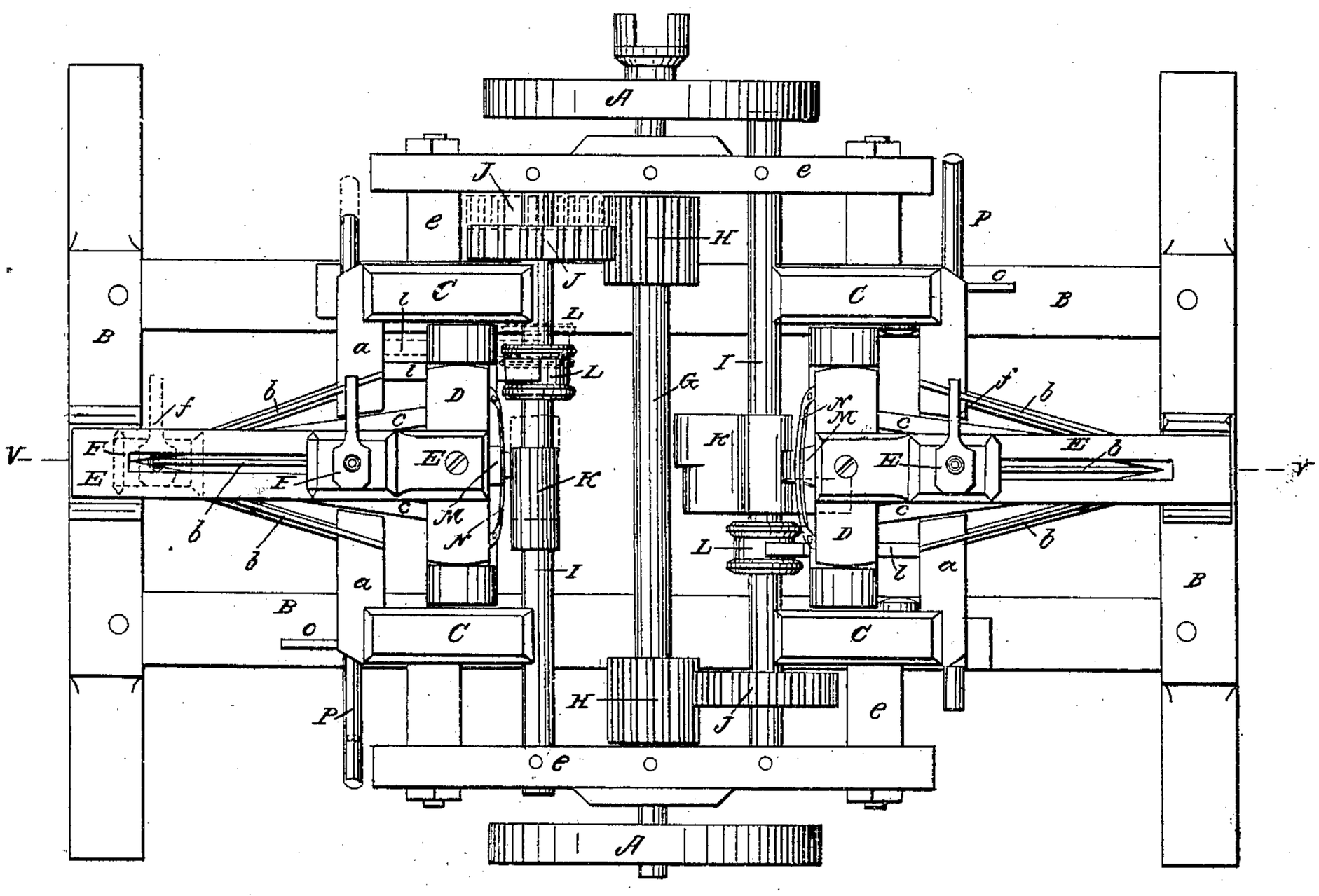

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Fig: 2.

Vertical Longitudinal Section at V.V. Fig: 1. Plate I.

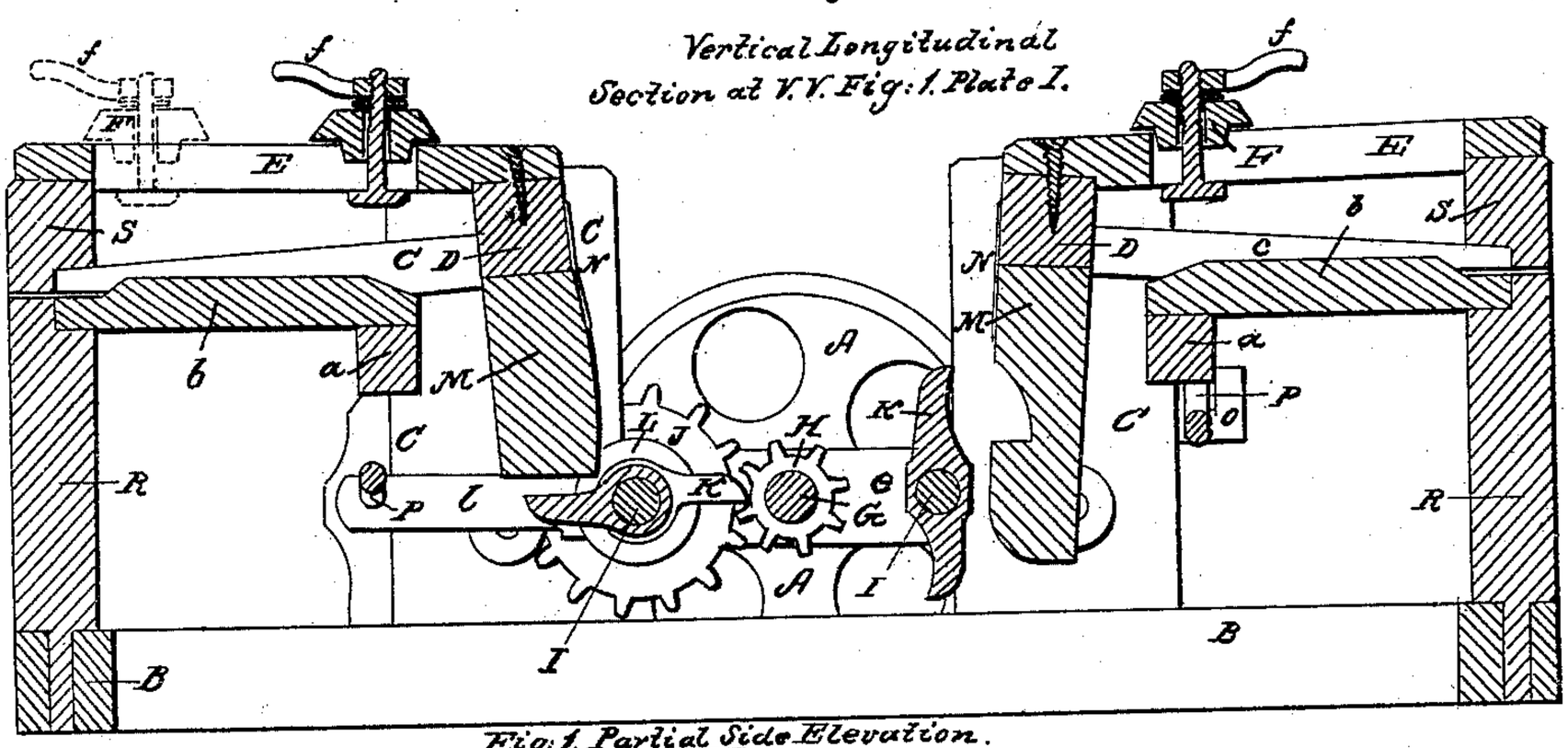


Fig: 1. Partial Side Elevation.

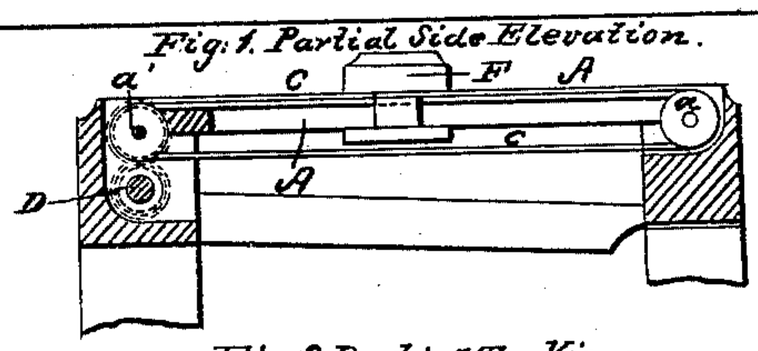
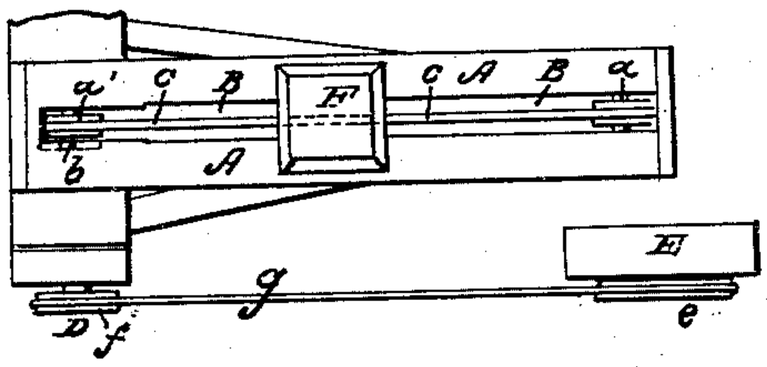


Fig: 2. Partial Top View.



UNITED STATES PATENT OFFICE.

EDWARD W. LACY, OF OAK PARK, VIRGINIA.

IMPROVEMENT IN HEMP-BRAKES.

Specification forming part of Letters Patent No. **16,279,** dated December 23, 1856.

To all whom it may concern:

Be it known that I, E. W. LACY, of Oak Park, in the county of Madison, in the State of Virginia, have invented a new and useful Improvement in Machines for Breaking Hemp; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in furnishing the movable breaker or sword arms with an adjustable weight, by means of which I can regulate at pleasure, while the machine is in motion, the momentum of the blow upon the stalks as the quantity or quality may require.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The general outline of my machine is similar to that of all machines which employ the vibrating breaker or simple lever motion, as may be seen from the drawings, in which—

Figure 1, Plate I, is a top view, and Fig. 2, Plate II, a vertical longitudinal section through the center.

B B, &c., represent the foundation frame-work; C C, &c., four standards, in the top of each of which is a box or bearing for one end of one of the rock-shafts D D, and from which (on the outer sides) are projected the side frames, *e e*, in which are bearings or boxes for the main driving-shaft G and the cam-shafts I I.

R R are the stationary breaker blocks or standards resting upon and firmly attached to the foundation-frame B B, &c. In upper end of each of these standards is fastened one end of each of the stationary sword-arms *b b*, &c., which diverge from thence toward the cross-beams *a a*, in which the other end of each is secured.

S S are the movable breaker-blocks, and are supported by the bars E E, and other braces when necessary.

c c are the movable sword-arms, one end of each being fastened into the block S, and the other in one of the rock-shafts D, and meshing into the stationary arms *b b* on which the stalks are laid.

A A are the main driving-pulleys.

H H are the driving-pinions on shaft G, and mesh into the gears J J, on shafts I I, which carry the toes or cams K K. Said shafts I I are so constructed as to slide longitudinally in their bearings for the purpose of bringing into operation different cams (on said shaft) which shall give different numbers of vibrations to the breakers, while the shafts and pinions are running at a uniform speed.

L L are two collars or shipper-holders, in which rest the shippers *l l*, which are operated by means of the sliding rods or handles P P.

M M are the lifting-levers, upon which the cams K K operate to lift the movable breaker-blocks S S. Said lifting-levers are attached to the bottoms of the rock-shafts D D and braced by the iron arcs N N.

E E are two shafts or bars secured firmly to the rock-shafts, and which support the breaker-blocks S S. They are slotted lengthwise, (best seen at Fig. 1, Plate I,) and in said slots move the adjustable weights F F, by which the momentum upon the stalks is regulated. The adjustable weight F is operated by means of the band *c*, to which it is fastened, and which band is endless, passing over the pulleys *a' a*. On one face of *a'* are cut teeth, which mesh into the pinion *b*. Said pinion is fast on shaft D, which is rotated in one direction or the other by means of the pulley *f* and its band *g*, which also passes over pulley *e*, said pulley *e* being fast to drum E, which is rotated in one direction or the other by the foot of the operator.

The operation of my machine is similar to many and requires but little explanation. It is driven by steam or any other power by means of the driving-shaft G, which drives the shafts I I, on which are the cams K K, which operate on the levers M M to lift the breakers attached to the rock-shafts D D. The shafts I I may be shipped to increase or diminish the number of vibrations of the breakers, as before described.

When the machine is in operation, the attendant ships the adjustable weight F by means of a pedal to such a point as at which it will give to the stroke such a momentum as the quantity or quality of the stalks under the breaker may require. The usefulness of this adjustable weight may be readily conceived when it is remembered that the great or only objection to the vibrating brake is its non-capability of regulation in the momentum or force of the blow dealt to the stalks, as is proved by the in-

ventions which have been made to make the sword-arms gradually impart the blow to make them wedge the stalks, &c.

Having thus fully explained the construction and operation of my machine and illustrated its great use, what I claim as my invention, and desire to secure by Letters Patent, is—

The adjustable weight F, to be used with or governed by a treadle-roller or the equivalent thereof to regulate at pleasure the momentum of the blow upon the stalks, as hereinbefore described.

EDWARD W. LACY.

Witnesses:
J. N. McINTIRE,
ARTHUR C. WATKINS.