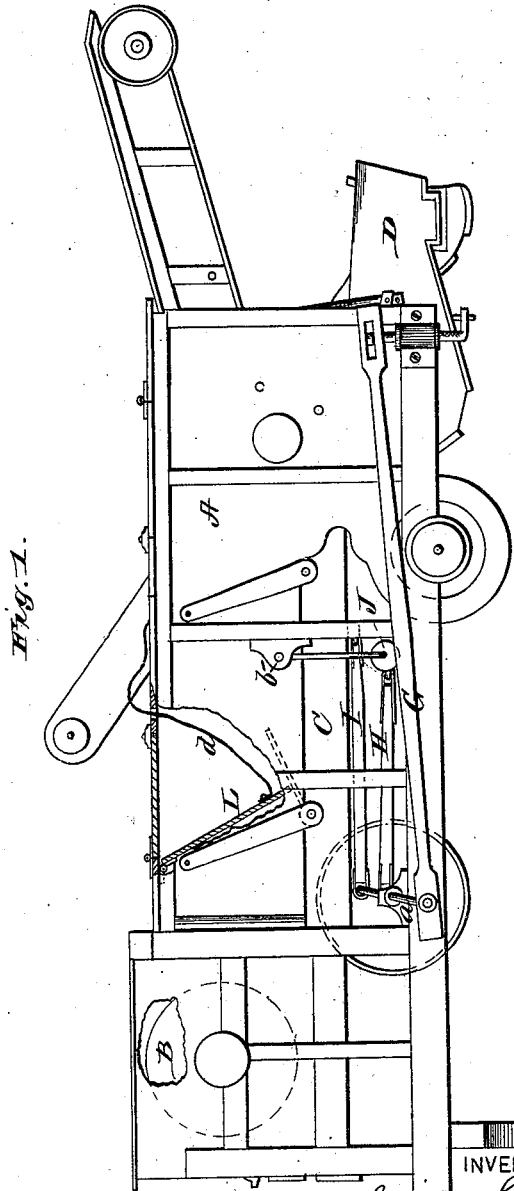


J. S. UPTON.
Grain-Separator.

No. 200,585.

Patented Feb. 19, 1878.



WITNESSES

P. L. Ouraud

H. Aubrey, Goussier

INVENTOR

James S. Upton

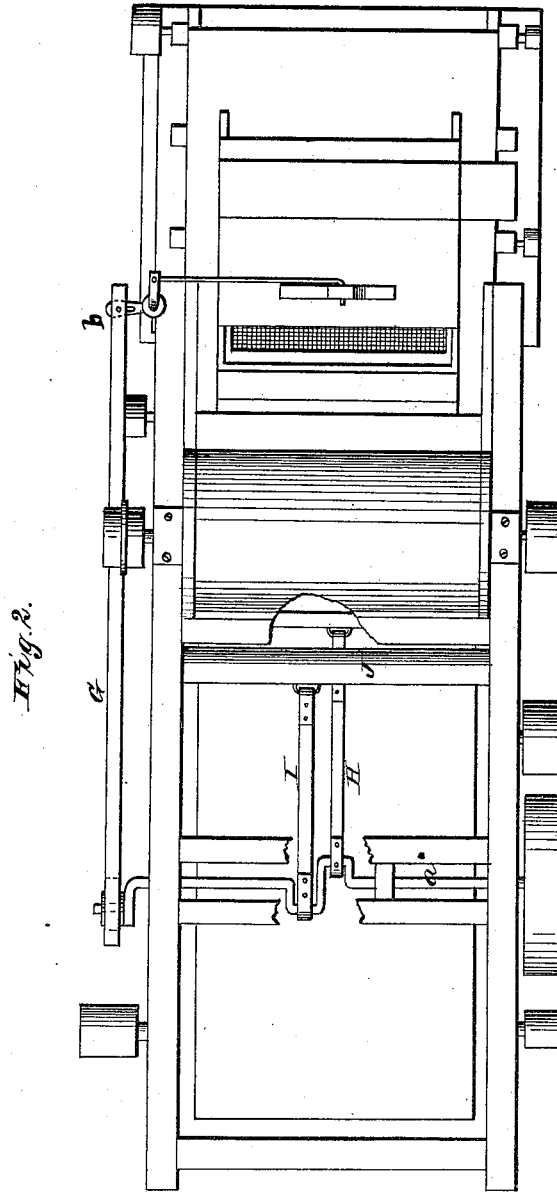
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ATTORNEYS

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WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES S. UPTON, OF BATTLE CREEK, MICHIGAN.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **200,585**, dated February 19, 1878; application filed December 14, 1877.

To all whom it may concern:

Be it known that I, JAMES S. UPTON, of Battle Creek, in the county of Calhoun, and in the State of Michigan, have invented certain new and useful Improvements in Grain-Separators; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention relates to improvements upon thrashing-machines, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation, partly in section, of a thrashing-machine embodying my improvements. Fig. 2 is a bottom view of the same.

A represents the frame of the machine. B is the thrashing-cylinder. C is the swinging boot, and D is the shoe.

a is the main driving-shaft, formed with three cranks, upon which are connected the three pitmen G, H, and I.

The pitman G is attached to a rock-shaft, *b*, which is connected to and operates the shoe D. The pitman H is attached to a pendulum, J, and the pitman I is attached to the swinging boot C.

In the operation of the machine the pendulum J acts as an intermediate counter-balance between the shoe D and the swinging boot C, to compensate for the difference in their weight, said pendulum being swung by the pitman H

an equal distance from the pivotal point *b'* to that traversed by the boot.

It is, however, evident that various other methods of hanging the pendulum as an intermediate counter-balance may be employed, it making no difference whether it swings from a pivotal point or otherwise.

Back of the cylinder B is a swinging or hinged deck, L, which may be either concave or straight, as desired. This deck is adjustable by a band, *d*, or any other suitable means, for the purpose of making it adjustable as circumstances may require in different kinds of grain or height of straw, it being used for the purpose of forcing the straw down on the swinging boot C, thereby preventing the cylinder from throwing grain and straw through the separator, and thus effecting a perfect separation of the grain from the straw.

In the operation of the pendulum J the shoe and the pendulum are operated in different directions from the swinging boot.

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

In a thrashing-machine, the swinging pendulum, in combination with the swinging boot and shoe, as an intermediate counter-balance for the same, the said pendulum, boot, and shoe being separately operated directly from a single-crank shaft, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of November, 1877.

JAMES S. UPTON.

Witnesses:

HENRY M. STRONG,
JOSEPH F. GARCIA.