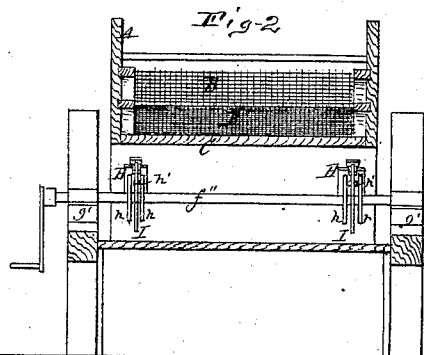
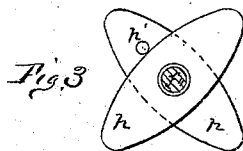
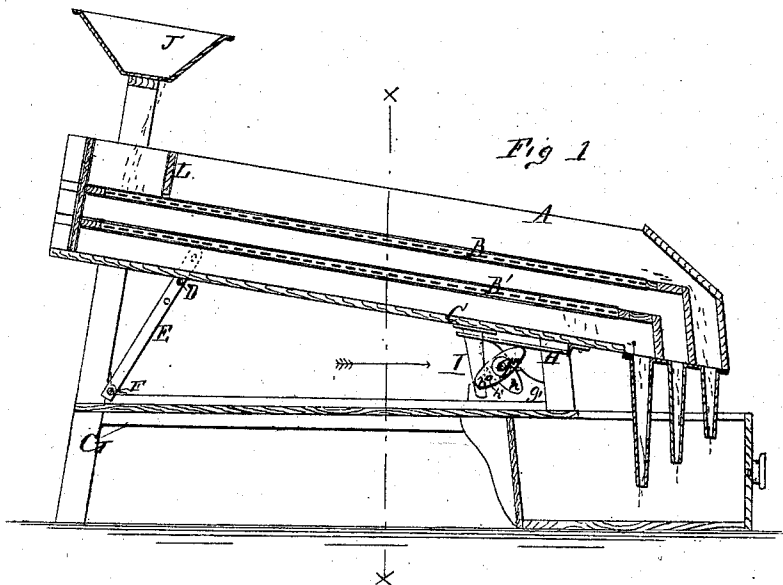


W. H. LAWRENCE.

Improvement in Grain Separator.

No. 120,285.

Patented Oct. 24, 1871.



Witnesses

D. D. Kane,
J. B. Lewis.

Inventor.

W. H. Lawrence
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Atty's

UNITED STATES PATENT OFFICE.

WILLIAM H. LAWRENCE, OF BALTIMORE, ASSIGNOR OF ONE-HALF HIS RIGHT TO D. A. EDIE, OF MORRISVILLE, AND ONE-FOURTH HIS RIGHT TO H. C. KARR, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. 120,285, dated October 24, 1871.

To all whom it may concern:

Be it known that I, WILLIAM H. LAWRENCE, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and valuable Improvement in Grain-Separators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a vertical longitudinal section of my invention. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a detailed view of the cams.

This invention has relation to certain improvements in grain-separators; and consists in the construction and arrangement of devices by means of which a double and tossing motion is given to the screen-box, vibratory, or longitudinally reciprocating and vertical.

In the accompanying drawing, A designates the screen-case, furnished with the screens B B' and bottom C, each communicating with a separate spout attached to the forward end of the screen-box, so as to dispose of the different particles separated by the screens. The screen-box is arranged at an incline within its frame, and is supported at its higher end by means of a transverse bar, D, the ends of which are held by a pair of perforated arms, E, secured at their lower ends to a bar, F, which is journaled to the frame G by means of boxes *g*. *g'* designates boxes supporting the ends of a shaft, *g''*, on the frame G. The shaft *g''* is provided with a pair of elliptical cams, *h*, secured to it near either end, and arranged at right angles to each other, as represented in the drawing. Of each pair one cam is furnished with a pin or stud, *h'*, projecting from its face. The cams are designed for the purpose of giving an up-and-down motion to the screen-box; their points alternately raising the box as the shaft *g''* is rotated, and allowing it to fall in the spaces between them. H designates a spring,

consisting of an elastic plate properly bent and secured to the under side of the screen-box. The object of said spring is to give a slight recoil to the box as it falls on the cams, thereby counteracting the shock, and giving a more uniform motion to the box in its rise and descent, as well as protecting the edges of the cams and the bottom of the box, which they would otherwise strike. I designates arms or studs depending from the under side of the screen-box in such a position that the pins on the face of the cams shall strike against them when the cams are in motion, thereby throwing the box forward at each period of contact. The weight of the box and its inclined arrangement carries it back after the pins have passed. The object of the longitudinal and vertical reciprocating motions of the screen-box is to perform the work of screening grain in a more thorough and rapid manner by shaking it over the screens with violence. J designates the hopper, supported on top of the frame-standards K, and perforated to let its contents fall on the upper screen. L represents a slide, adjustable at either end within grooves cut in the sides of the screen-box. The grain falls from the hopper above said slide, underneath which is a narrow passage, extending across the screen, which allows the grain to pass through in a thin sheet, in which form it extends over said screen and is more effectually screened and separated. The slide may be adjusted to let different quantities of grain pass underneath, when desired.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the rotating elliptical cams *h*, springs H, pin *h'*, and arms I, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WM. H. LAWRENCE.

Witnesses:

D. R. COLLIER,
D. HAGERTY.

(159)