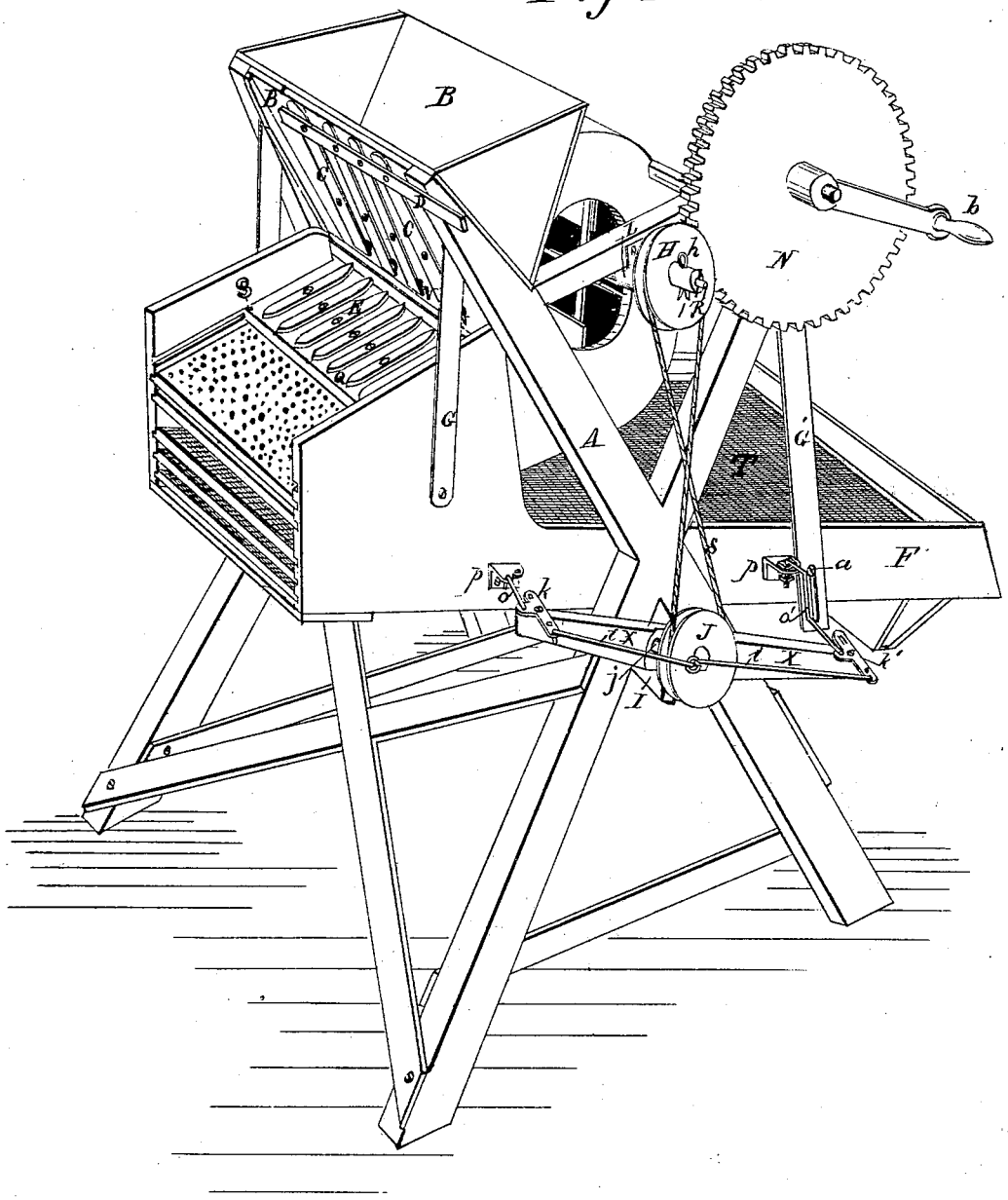
2 Sheets--Sheet 1.

A. W. KENDRICK.

Grain-Separator.

No. 166,532. Patented Aug. 10, 1875.

Fig. 1



WITNESSES
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D. C. Dewey

INVENTOR
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A. W. KENDRICK.

Grain-Separator.

No. 166,532 Patented Aug. 10, 1875.

Fig. 2

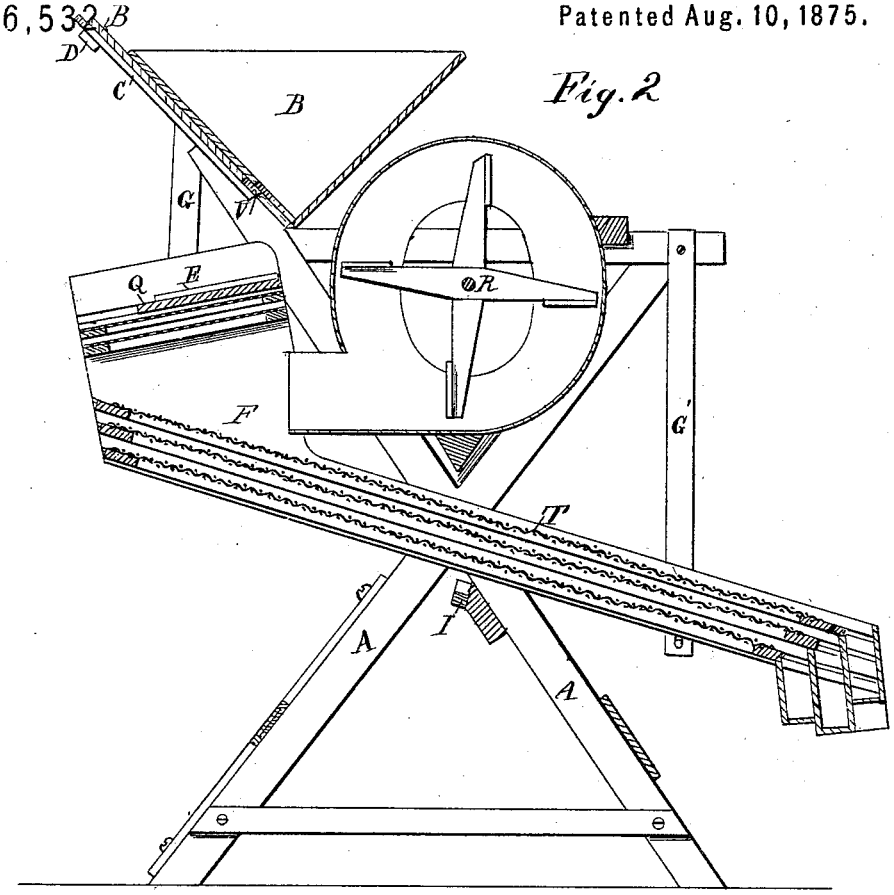


Fig. 3

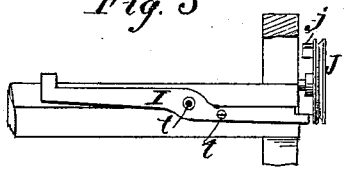


Fig. 4.

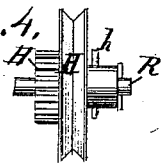


Fig. 5

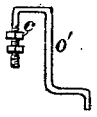


Fig. 6

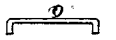
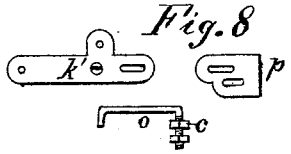


Fig. 7

Fig. 8



WITNESSES

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UNITED STATES PATENT OFFICE.

ANDREW W. KENDRICK, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **166,532**, dated August 10, 1875; application filed July 3, 1875.

To all whom it may concern:

Be it known that I, ANDREW W. KENDRICK, of the city of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Fanning-Mills and Grain and Seed Separators; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the machine. Fig. 2 is a vertical longitudinal section. Fig. 3 is a front view of the jarring-lever. Fig. 4 is a side view of the pulley and pinion. Figs. 5 and 6 show the shifting-bars. Fig. 7 is a side view of the fan-shaft hangers. Fig. 8 is a view of lever, bracket, and rod.

The invention relates to an improvement in combined fanning-mills and grain and seed separators; and consists in the construction and arrangement of certain devices, which I will now proceed to describe, so that any one skilled in the art to which my invention appertains will be able to construct and use the same.

Referring to the accompanying drawings, &c., A is the frame of my machine. B is the hopper, the construction of which I will hereinafter more fully describe. F is the shoe, provided at its upper end with a grain-board, Q, having pivoted adjustable spreaders E, and a nest of short sieves, and below provided with one or more long screens, T, each discharging the grain by separate channels. This shoe is suspended by metal straps G G′, the straps G′ supporting the rear or lower end of the shoe, being slotted at their lower ends, as shown, to permit the adjustment of the set-screws *a*, by which the shoe is attached, and thereby to allow adjustment of the inclination of the shoe. N is the driving-wheel, receiving motion from the hand-crank *b*, and gearing with the pinion H′ on the fan-shaft R. This pinion is formed in one piece with, or otherwise rigidly secured to, the pulley H, which transmits motion through a belt, S, to the crank-pulley J. The pinion and pulley H H′ are journaled upon the fan-shaft R, as stated, and are keyed to it by means of a removable pin, *h*, or its equivalent. When so keyed the pinion and pulley, deriving their motion from the driving-wheel N, and transmitting it to the shoe F through crank-pulley J, also rotate the fan. When it is desired to dispense with the blast the pin *h* is removed, thus allowing the pinion and pulley to revolve without rotating the fan, thereby much diminishing the expenditure of power required in machines where the fan and separating devices must be driven together. The crank-pulley J communicates motion, through connecting-rods *i i*, to the levers K K′, pivoted to the bar *x*, rigidly secured to the main frame A. The upper one of these levers K imparts a shaking to the upper end of shoe F through the connecting-rod *o* and bracket *p*. The lower lever K′ gives motion to the lower end of the shoe. In order to permit the adjustment of the inclination of the shoe F, through the means referred to, I make a slotted bracket, *p*, or a slotted lever, *h′*, and connecting-rod *o*, provided at one end with screw-thread and adjusting nuts *c*, as shown in Fig. 8, which, when the inclination of the shoe is changed by adjusting the set-screws in the slotted straps G′, permits the operator to shift the connecting-rod *o* according to the degree of adjustment, and to secure it at the desired height by tightening the nuts *c*. Instead of the connecting-rod, as above described, I might use a connecting-rod of a form nearly like the letter Z, except that the angles would be right angles, as shown in Fig. 5. The pulley J has formed upon its inner face a cam projection, *j*, which at each revolution strikes the arm of the jarring lever or knocker I, and causes its hammer end to strike the frame of the lowermost screen. In order to communicate the jar from the lower to the upper screens buttons or blocks may be interposed between the screens above the point struck by the knocker. The height of stroke of the jarring-lever I may be altered to suit the adjustment of the shoe F by changing the fulcrum, for which purpose it is provided with two or more holes, *t t*, for the pivot pin or screw. One of the sides B′ of the hopper is made as a slide for regulating the feed when the machine is used for chaffing. For the purposes of simple separation or cleaning this slide is further provided with delivery-orifices *v* in its lower edge, which form aper-

tures for the flow of grain. The size of these openings is regulated at will through pivoted slats or gates C, connected at their upper ends to adjusting-bar D, by moving which the operator may increase or diminish the flow of the grain over the board Q and screens.

I am aware that a sliding bar, provided with levers to register with the delivery-orifices of the slide, and operated from above by a pivoted lever, is old; and I therefore confine my claim to my specific construction, from which it results, first, that the adjusting-bar is in convenient reach of the person operating the crank at all points of the revolution of said crank; and second, that the means used for regulating the feed, being a system of levers, are more easily operated and less liable to clog than the sliding bar above mentioned.

Some of the advantages of my machine it is proper to mention. It is not inclosed, as many machines of this class are, and consequently requires a comparatively small amount of lumber for its construction.

It comprises a fanning-mill and grain and seed separator, with a device for dispensing, at will, with the use of the fan, thus furnishing two complete machines equally advantageous in their combined or separate use.

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

1. The combination, with driving-wheel N and crank-pulley J, operating the shoe F, of the pinion H′ and pulley H, rigidly secured together, and detachably secured to the fan-shaft R, for the purpose of allowing the separator to be used at will, either with or without the blast, substantially as set forth.

2. The combination of pulley J, having the cam-projection *j*, with the adjustable jarring-lever I and adjustably inclined separator or shoe F, substantially as set forth.

3. The combination of adjustably inclined shoe F, slotted bracket *h′*, inclined connecting-rod *o′*, provided at one end with screw-thread and adjusting-nuts *c*, and lever K′, substantially as set forth.

4. The combination of slides B′, having delivery-orifices in its lower edge, pivoted slats or gates C, and adjusting-bar D, to which said slats are pivotally connected, substantially as and for the purposes set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ANDREW W. KENDRICK.

Witnesses:

GRENVILLE LEWIS,

E. C. WEAVER.