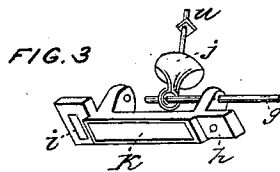
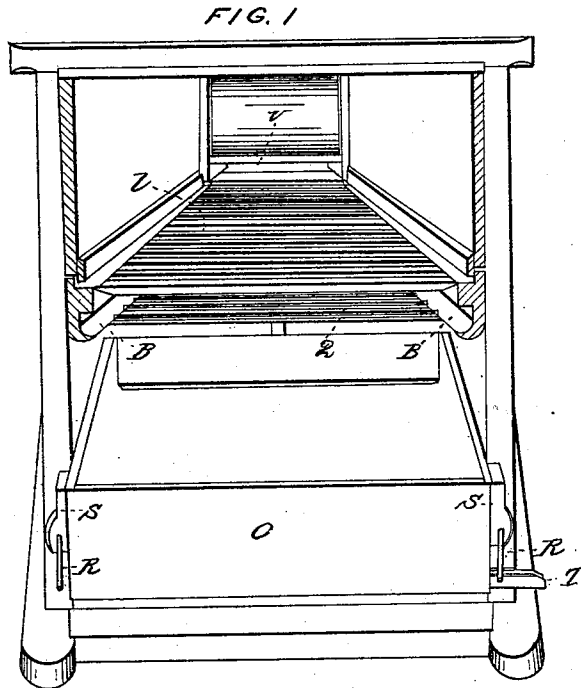
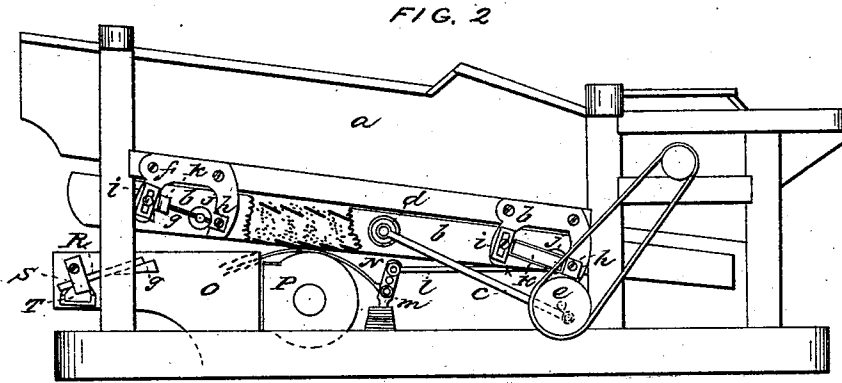


O. STONE  
Grain Separator.

No. 103,680.

Patented May 31, 1870.



WITNESSES

*C. Oscar Thompson*  
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# United States Patent Office.

ORRIN STONE, OF IONIA, MICHIGAN.

Letters Patent No. 103,680, dated May 31, 1870.

## IMPROVEMENT IN GRAIN-SEPARATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, ORRIN STONE of Ionia, in the county of Ionia and State of Michigan, have invented certain new and useful Improvements in "Grain Separators;" and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents a perspective view of the separator from behind, showing the movable section, with the floors thereof, as also the back part of the fanning-mill shoe connected therewith.

Figure 2 represents a side view or longitudinal exhibition of the separator, with the connections between it and the machine, as also between it and the shoe aforesaid, as also the position, uses, and connections of the inclined rods.

Figure 3 represents a transverse view of the inclined rod and journal-box, with the rod partially withdrawn, also the nut by which the movable section is fastened to the journal-box.

Similar letters of reference, where they occur in the separate figures, denote like parts of the separator and machinery connected therewith.

The nature of my invention will be more clearly understood by the following description:

It consists of a grain-separator, constructed in two portions or sections, divided horizontally, the upper portion or section being stationary or fixed to the frame-work of the separator, while the lower portion is movable.

This movable section has two floors, the upper and lower.

The upper floor is formed with transverse slats, with spaces between them, through which the grain falls onto the lower floor.

The lower floor is tight, with a series of notches, which carry the grain to the fanning-mill.

The shoe of the fanning-mill is attached to the movable section by means of flexible connections underneath, as shown in the drawing so that both move in the same direction at the same time, and both are suspended on adjustable inclined slides or rods, the inclination being opposite to each other, so that, while the movable section goes down, the shoe goes up, thus counterbalancing each other.

The movable section and the shoe receive their motion by means of a crank-shaft or eccentrics, connecting-rods, or pulley and band connecting with the cylinder, as hereinafter explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawing.

*a* represents any ordinary separator-frame, with the back part elevated, as shown in fig. 2.

*b b* represent the side piece of the movable section, with a portion removed to show the upper and lower floors thereof, as at 1 and 2.

*c* represents the rod attached to the movable section *b*, at *d*, connecting with the crank-shaft *e*, which has a pulley attached to receive the belt from the cylinder-shaft.

To the frame-work of the separator are attached the metallic circles *f f*, by screws or bolts, as shown in the drawing.

The journal-box *j* is attached to the sides of the movable section by means of bolts and nuts, as shown at *u*.

Through these journal-boxes the adjustable inclined rods *g g* pass, said rods being securely fastened in their places by means of the guards *k*, when attached to the metallic circles at *h h* and *i i*.

In the upper end of the guard at *i i* is a slot or opening, by means of which the inclination of the rods may be regulated.

To the lower floor of the movable section is attached a rod, *l*, connecting with the upright movable bar *m*, which has a series of openings, by which to regulate the motion of the fanning-mill shoe *o*, and to which the upright bar *m* is also attached, by means of the connecting-rod *n*, which passes over the fans at *p*.

Through the back posts of the separator-frame are inserted the adjustable inclined rods *r r*, which are adjusted and secured by means of a wedge or wedges, as represented at *q*, said rods supporting the shoe *o* of the fanning-mill by means of the journal-box *s*.

*t* simply represents the tailing-spout, and

*v* represents the space between the concave of the cylinder and the upper floor of the movable section, upon which the grain and straw fall as they leave the cylinder.

Having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent, is—

1. A single movable section, *b*, (with two floors, 1 and 2,) suspended on adjustable inclined slides or rods *g g*.

2. The fanning-mill shoe *o*, also suspended on adjustable inclined slides or rods *r r*, having their inclinations in opposite directions from the main slides *g g*, said shoe being attached to the movable section *b* by flexible connections, as shown at *m, n, and l* in the drawing, thus securing an upward and forward motion in a straight line, instead of a circular motion, as heretofore represented, and for the purposes set forth.

ORRIN STONE.

Witnesses:

C. O. THOMPSON,  
JOHN W. WINSOR,  
ROLLIN H. BEAL.