

O. K. WOOD.
GRAIN-SEPARATOR.

No. 174,606.

Patented March 7, 1876.

Fig. 1.

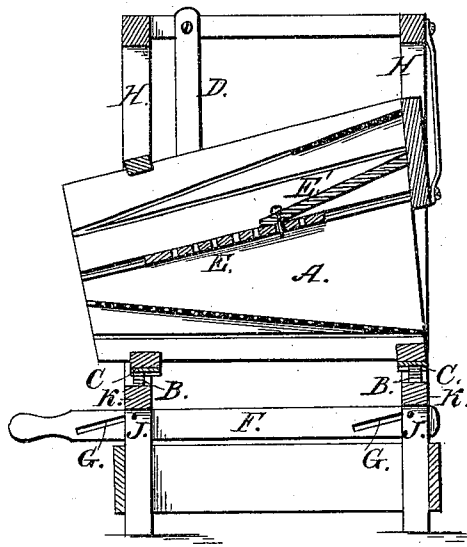


Fig. 3.

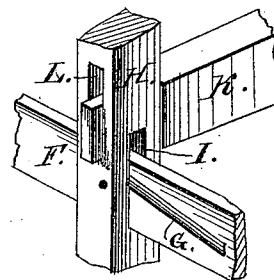


Fig. 2.

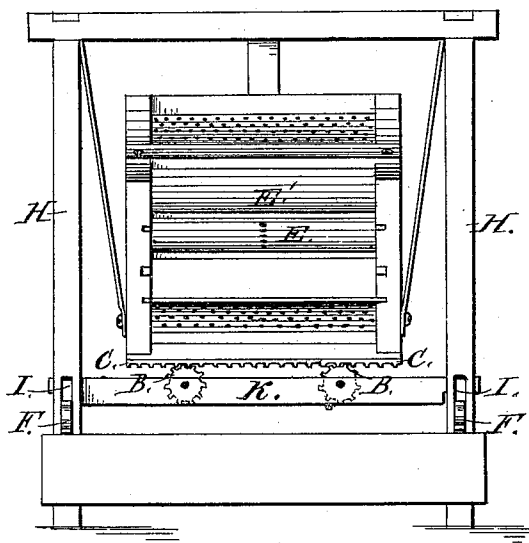
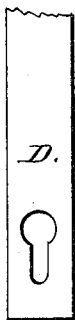


Fig. 4.



Witnesses:

Lehas H. St John
E. C. Withey

Inventor:

Orville K. Wood
per E. B. Stocking
att'y.

UNITED STATES PATENT OFFICE.

ORVILLE K. WOOD, OF WEST CHAZY, NEW YORK.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **174,606**, dated March 7, 1876; application filed September 22, 1875.

To all whom it may concern:

Be it known that I, ORVILLE K. WOOD, of the town of West Chazy, county of Clinton and State of New York, have invented new and useful Improvements in Grain-Separators, and that the following is a full and exact description of the same.

My invention is an improvement of the grain-separator for which Letters Patent were granted to me, and which is numbered 160,561, and dated March 9, 1875.

My invention consists in a combination of parts for changing the motion of the shoe at will from a smoothly-swinging lateral motion of the entire shoe to a laterally-reciprocating, combined with a vertically-tremulous, motion of the entire shoe, or the reverse; and it further consists in a combination of parts for changing at will the motion of the shoe from a freely-swinging lateral motion of the entire shoe to a lateral swinging motion at one end of the shoe, and a union of a laterally-reciprocating and a vertically-tremulous motion at the other end of the shoe, or the reverse, or from the above-stated union of motions to a laterally-reciprocating and a vertically-tremulous motion of the entire shoe. And it further consists in means for adjusting the parts whereby the vertically-tremulous motion is imparted to one or both ends of the shoe.

In the drawings, Figure 1 is a vertical longitudinal section of the improved grain-separator. Fig. 2 is an end elevation thereof. Fig. 3 is a detailed view; and Fig. 4 represents one of the suspenders D, and shows the key-hole slot therein.

A is the shoe, detachably supported by suspenders D, and is swung laterally by the usual bell-crank and rod connection to the fan-shaft. C are corrugated plates fastened to the bottom of the shoe, or it may be to the bottom of a screen beneath the shoe. B are corrugated rollers, set in supports K, which rest without fastening on the top of bars F. These roller-supports K ride up and down in mortises L in the uprights H. The bars F are adjustable to carry the roller-supports K and rollers B to and from engagement with the plates C or the shoe A. Their adjustment is shown as vertical, but may be directed laterally out of a vertical line through the plate C.

I have shown the bars F passing loosely through vertical slots I in the uprights H of the main frame of the separator. The slots are longer than the width of the bars F. Each bar has a diagonal slot, G, through it, near each of its ends, and pins J journaled in the uprights pass severally through the several slots in the bars F.

E is a blank board, formed in two sections. The section toward the front of the separator is adjustable horizontally to lengthen or shorten the blank board, and thus cause the grain and the air-blast to be concentrated on a small area near the front of the separator, and to cause the grain to traverse a larger surface on the inferior screen.

The operation of my invention is as follows: Whenever I desire to produce a smooth swinging motion, the bars F are drawn toward the front of the separator, whereupon the slots G, riding the pins J, lower the bars F, and at the same time withdraw the roller-supports K and rollers B from contact with the corrugated plates C. The power being applied to the separator, the shoe swings smoothly and laterally. Whenever it is desired to vary the motion of the screen, the bars F are pushed backward, and are elevated by the pins J riding in the slots G, and lift with them the roller-supports K, and the rollers B engage with the corrugated plates C. The suspenders D at both ends of the shoe are then detached from the shoe or main frame.

I may detach but one end of the shoe, and permit that end to rest on the corrugated rollers beneath it, while the other end of the shoe remains suspended and capable of swinging laterally. I thus obtain a laterally-swinging motion at the suspended end of the shoe, together with a lateral and vertically-tremulous motion at the lowered end of the shoe.

It will be seen that when I lower the rear end of the shoe, the front end remaining in suspension, I bring the shoe nearer to a horizontal position; but when I lower the front end of the shoe, the rear end being suspended, I remove the shoe farther from a horizontal position. Thus by lowering either end I adjust the slope of the shoe and accelerate or retard, as the case may be, the progress of the grain and chaff along the shoe. From this

position the shoe may be changed either to the freely-swinging position, or to its position on the rollers.

Power is applied and the shoe is moved both with a lateral and a vertically-vibrating motion.

It is sometimes desirable for the separation of some sorts of seeds and grains that the blast and grain be concentrated, and that, at the same time, the roughest motions be used—that is to say, the combination of the lateral and vertically-reciprocal motion should be imparted to such materials. In such cases I advance the front section of the blank board, to secure the requisite contraction of grain and blast, and engage the corrugated rollers and surfaces and apply the power to the separator.

It is evident that the vertically-tremulous motion may be produced by lowering the shoe onto inadjustable corrugated rollers, and that the same effect will be produced without the corrugated plates C, the rollers B being corrugated, or with corrugated plates used with rollers having smooth perimeters.

What I claim is—

1. The combination of a shoe having detachable swinging suspenders at each end

with vertically-movable and corrugated rollers under each end thereof, as and for the purpose set forth.

2. The combination of a freely-swinging shoe suspended at one end and detachably suspended at the other end, a vertically-movable and corrugated roller S beneath the detachable end of the shoe, as and for the purpose set forth.

3. The combination of a swinging shoe, A, detachable suspenders D at each end thereof, corrugated plates C, and adjustable corrugated rollers B B under each end of the shoe, as and for the purpose described.

4. The combination of swinging shoe A, detachable suspenders D at either end thereof, corrugated plate C, and rollers B B beneath the end of the shoe, having the detachable suspenders, as and for the purpose set forth.

5. The combination of the diagonally-slotted bars F, roller-supports K, slotted uprights H, and pins, substantially as and for the purpose described.

ORVILLE K. WOOD.

Witnesses:

E. B. STOCKING,
JOHN B. BORDEN.