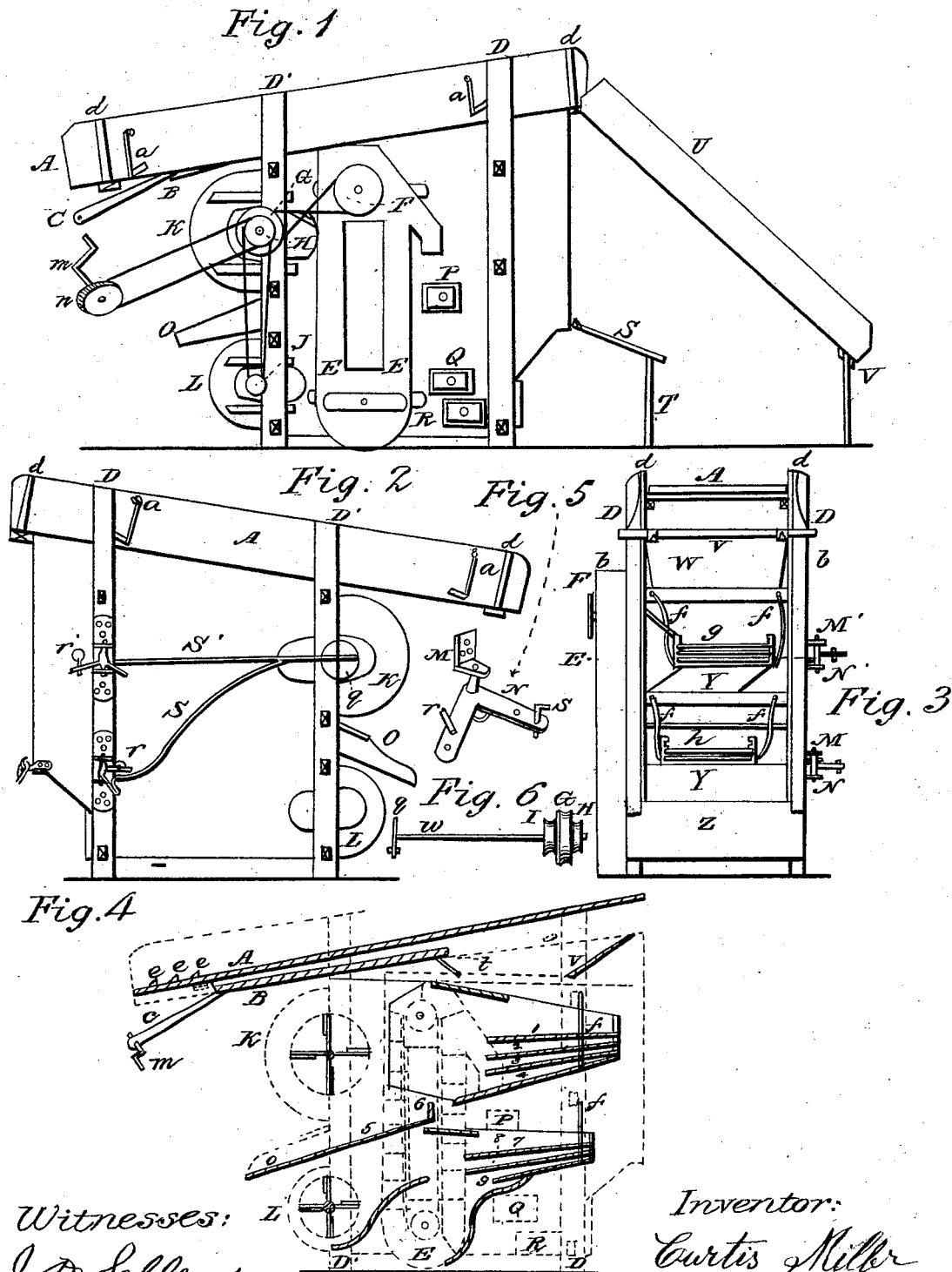


C. MILLER.  
Thrashing Machine.

No. 113,076.

Patented Mar. 28, 1871.



Witnesses:  
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# United States Patent Office.

CURTIS MILLER, OF CLAY TOWNSHIP, (LINCOLN POST OFFICE,) PENNSYLVANIA, ASSIGNOR TO HIMSELF AND JEREMIAH R. ROGERS.

Letters Patent No. 113,076, dated March 28, 1871.

## IMPROVEMENT IN SEPARATORS FOR THRASHING-MACHINES.

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

I, CURTIS MILLER, of Clay township, (Lincoln post office,) in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Separators to be attached to Thrashing-Machines, of which the following is a specification.

The nature of my improvements relates to the arrangement of two fans, and side elevators and double shoe, so as to clean grain thoroughly and convey it into bags by one process; the manner of actuating the shoes, with their screens and sieves—one to the right, the other to the left—by means of a forked connecting-rod and elbowed vibrating levers; the manner of imparting motion to the double bottom and keeping the white-heads, chaff, and straw distinct; as also, in the hinged trap, used when cleaning oats; besides the three-fold pulley, and minor improvements.

The drawing illustrates the several improvements, in which—

Figure 1 is a side view, showing the fans, elevators, pulleys, straps, straw-carrier, and separating partitions; as also, the strap that connects with the cylinder-pulley of the thrashing-machine;

Figure 2 shows the opposite side, to show the eccentric and divided connecting-rod to the elbowed levers, to give motion to the shoes and screens;

Figure 3 is a rear-end view, to show the screens, sieves, &c., in place;

Figure 4 illustrates the interior arrangement, with dotted lines, of the outer portions;

Figure 5, the elbowed lever;

Figure 6, the three-fold pulley and eccentric on the shaft of the upper fan.

A brief description of and reference to the letters and drawing will enable any one skilled in the art to make and use the same.

A shows the ordinary straw-carrier, with its perforated bottom, and triangular cross-pieces *eee* on the lower end, fig. 4.

The under closed bottom *B* extends back to the hopper *v*, the upper bottom being hung in vibrating links *a a*, in the ordinary manner.

To impart motion to both, a rod, *C*, is attached centrally to the lower bottom *B*.

This rod is connected with a crank-end, *m*, on the pulley-shaft *n* of a thrashing-machine, to be used in connection with the separator.

The inclined trough or straw-carrier *U*, hooked to the rear, as shown in fig. 1, has a vertical cross-end or partition, *V*, which supports it.

The chaff is blown against the under side, over the partition *T*, and thus kept from mixing with the straw, while the heavier white-heads, &c., fall inside partition *T*, and thus separates the several kinds named.

The upper fan *K* has a shaft, *w*, fig. 6, which is provided at one end with three pulleys, *I G H*, to receive motion from the pulley *n* on the thrasher, to which the power is applied, and drives the elevator-pulley *F* and lower fan-pulley *J*.

On the other end of said shaft *w* is a crank or eccentric pulley, *g*, which imparts motion to the several sets of screens and sieves.

The elevator-casing *E E*, with its discharge-spout, is on the outside, and protects the grain from dust or chaff, the mouth being provided with a bag-holder (not shown) and a sliding gate to shut off while exchanging a filled bag for an empty one.

*P Q R* are drawers to receive the different qualities of screening and tail-end.

The lower fan *L* has a smaller pulley, so as to obtain double the speed of the upper.

The large hopper *V*, above, conveys the grain to the screens, &c., in the upper shoe *g*, subject to a strong blast from the upper fan, and passes through the open space between the bottom *5* of the spout *O*.

The hinged trap *6*, being raised vertically, forms a flanged barrier. Entering into the lower shoe *h*, with its screens and sieve, it receives a second blast from the lower fan, and thus thoroughly cleaned, by a diagonal spout enters the lower portion of the elevator-casing, and is carried up by the inside elevators to the spout in the ordinary manner, and discharged into the bag, as aforesaid.

The branched rod *S' S*, fig. 2, connected at one end by crank or eccentric *g*, connects with the branches with the reversed arms of the adjustable elbowed levers *N*, made to vibrate in brackets *M* attached to the upright post *D*.

The rod *r*, connecting the upper shoe, enters one arm of the lever through an opening behind the post *D*.

The rod *r*, of the lower shoe, hooks into the other arm of the elbowed lever *N* on the inside of the post. Thus the back-and-forth action of the combined rods *S' S* pushes the upper shoe in one direction and draws the lower in the opposite direction alternately, or *vice versa*.

The object of the hinged trap *6* is that, by closing the same in cleaning oats, the second cleaning or lower fan can be dispensed with, when the oats will be carried out between the fans, through the spout *O*, into a bag, or otherwise.

I am aware that two fans have been used before; as also, elevators for various objects, as well as double shoes. I, therefore, do not claim any of those parts, independently considered, apart from my combined arrangement.

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

1. The arrangement of the fans K L, elevator E, shaft W provided at one end with pulleys I G H and eccentric *q* at the other, branch-rod S, elbow-levers N, and the shoes *g h*, as and for the purpose specified and set forth.

2. In combination with the shoes *g h* the spout O, when constructed as described, and provided with the hinged trap 6, substantially as and for the purpose specified.

3. In combination with the conveyer U and support S the partitions T V, to form, in connection with the rear end of the machine, the chaff and white-cap receptacles, substantially as shown and described.

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Witnesses:

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