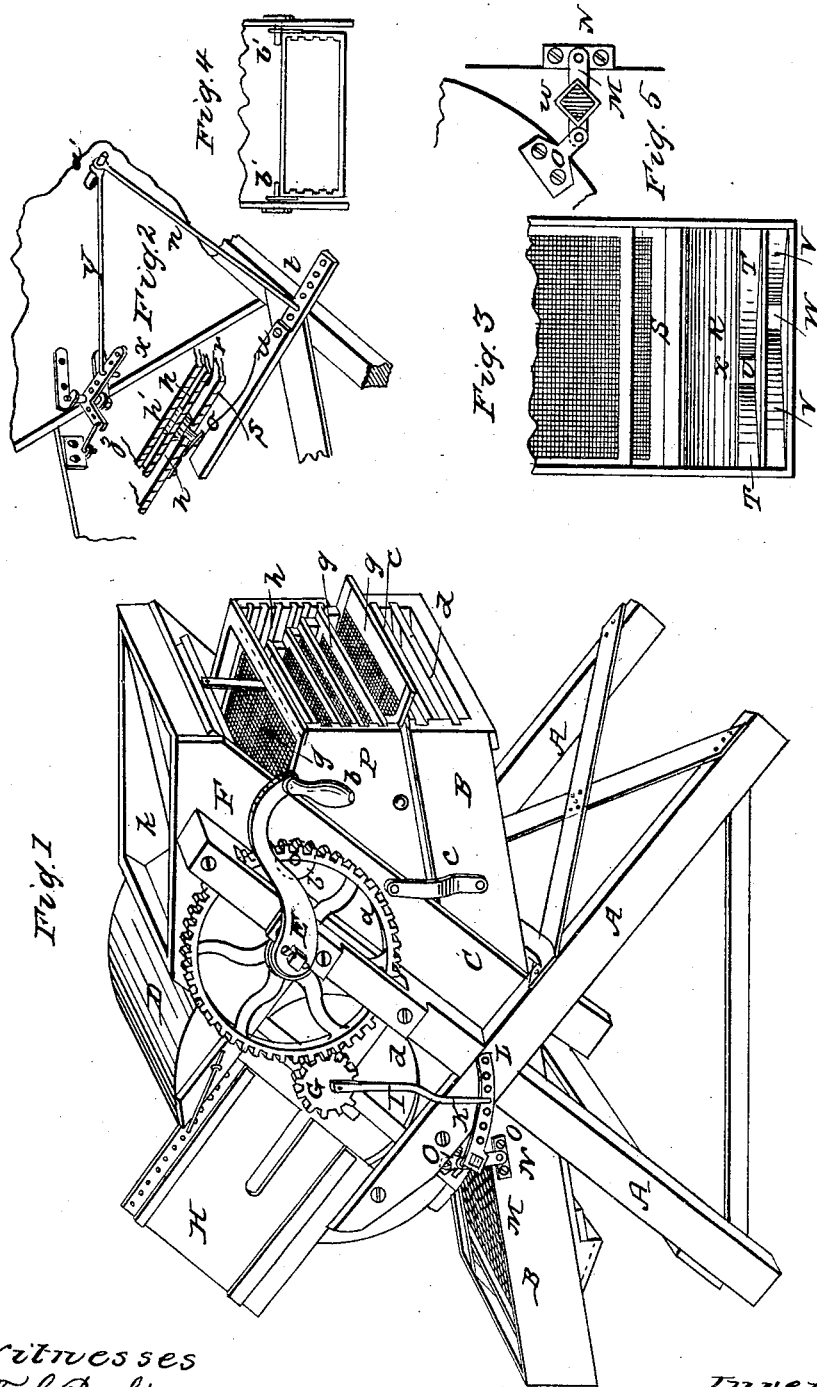


H. OGBORN.
Grain Winnower.

No. 111,375.

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Witnesses
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Letters Patent No. 111,375, dated January 31, 1871.

IMPROVEMENT IN FANNING-MILLS.

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

I, HARRISON OGBORN, of Richmond, in the county of Wayne and State of Indiana, have invented certain Improvements in Fanning-Mills, Grain and Seed-Separators, of which the following is a specification.

My invention consists in new and improved devices for cleaning spring wheat, winter wheat, and other kinds of grain and seeds, in a manner hereinafter described.

Figure 1 is a perspective view of a machine embodying my invention.

Figure 2 is a detached sectional view of the same.

Figure 3 is a top view of the lower end of the lower "shoe."

Figure 4 is a back end view of a portion of the upper shoe, and the horizontal pins or arms on which the inner end of the upper shoe rests.

Figure 5 represents the rock-shaft and its connections.

A A is the frame of my machine, which should be substantially made to resist the shaking motion of the machine.

B is the lower shoe, in which the two long screens are held;

C is the fan-case;

D is the fan-drum;

E is the crank; and

b, the handle to the same.

F is an opening in the post A, made to receive the driving-wheel.

G, pinion on fan-shaft for rotating the same.

H, fan-door, for opening and closing the wind-hole in the drum.

I, shaker-arm for lower shoe.

K, rocker-arm.

L, holes in rocker-arm to adjust the degree of shake.

M, suspending-rod.

N, pivot on suspending-rod.

O, pivot-plate.

P is the upper shoe for holding the short screens.

R is a board in the bottom of the long shoe, inclined backward so as to run the screenings away from the wheat as it falls from the shoe.

S is the bottom board to the lower shoe, over which the chaff, cockle, small oats, and other impurities pass before falling from the shoe.

T, bottom of market-wheat spout.

U, opening for the small grains of wheat to pass through.

V, bottom of seed or large-wheat spout.

W, outlet for the same.

X, open space through which the screenings fall.

a is the master-wheel for running the machinery.

c, suspending-strap for lower shoe.

d, fan-case opening for the admission of air.

e, suspending-strap in rear of upper shoe.

g is a nest of screens, used for taking oats from wheat, which can be set at any angle and held in position by a rod passing through the shoe, on one end of which a screw is cut to receive a thumb-screw nut. These screens may be used for many other purposes, also.

h h are grooves in the upper and lower shoes to receive the various screens for the various kinds of cleaning.

l is a sliding board in the bottom of the hopper, for opening and closing the same.

m is a knocker, one end of which strikes a pin, o, passing through the bottom of the shoe, the upper end of which pin comes in contact with a block on the under side of the cross-piece in the lower screen, while the upper side of the lower long screen comes in contact with a block fastened on the lower side of the upper long screen, which brings the block on the upper screen against the lower screen, so that the knocker jars the two long screens equally and simultaneously.

The doors to the wind-holes are made so that they are held by a small wire, r, in any desired position, to cover all or any part of the holes in the ends of the drum.

The machine is capable of a great number of variations, both in the combination of the screens and the various degrees of shake; the upper screens and shoe vibrate sidewise by the usual bell-crank and rods, while the long or lower screens operate endwise, so that the upper shoe may be made to operate entirely independently of the lower, and also the lower one independently of the upper.

The blast being regulated, and the shake of the upper and lower shoes made to conform to the requirements of the case, motion is communicated by the master-wheel by the handle and crank, and from the master-wheel to the pinion G, and by it to the fan-shaft, and also from the pinion by a rod, I, to the rocking-shaft, the end of which is seen at w, fig. 1. The vertical motion of the arm K communicates a horizontal shake to the long shoe and screens; at the same time the crank-pin a' communicates motion to the bell-crank z, and thence by the short rod z to the upper shoe, said upper shoe being especially adapted to cleaning oats from spring wheat and other difficult kinds of cleaning.

At the same time the two shoes are put in operation, the rod m, attached at a' receives an end motion, which in turn communicates a vertical motion to the knocker t, whereby it is made to strike the pin o, thereby giving a jarring motion to the lower screens, for the purpose of keeping them clean and causing all impurities to pass through them rapidly.

To clean spring wheat from oats, chaff, and small seeds and other impurities, it is placed in the hopper

and fed onto the nest of screens by drawing the bottom board out to any desired position. The wheat falls onto the nest of screens and the light chaffy particles are blown over behind the machine, while a portion of the oats and all large particles will be carried over by the upper screen when operated upon by the shake of the shoe and the fan-blast.

The wheat and a portion of the oats will fall through onto the next screen, when another portion of the oats will be carried over in like manner until the process is carried to its successful termination so far as the nest of screens can accomplish it. The wheat and short oats and other impurities fall from the nest of screens toward the long screens, when the blast of air from the fan will blow over a portion of the remaining impurities, when it is subjected to a final sifting and jarring motion by which the small particles pass through the screen *c'*, while the large grain passes down over the screen *c'*, and falls through the opening *W* into any convenient vessel.

The small wheat, and also other impurities, pass onto screen *d'*, where the small grains of wheat are retained, as *d'* is a finer mesh than *c'*, and particles smaller than the wheat fall through the lower screen onto the bottom board, and fall to the floor through an opening, *X*, in the bottom of the shoe. Meanwhile, the screen *d'* retains the small grains of wheat from which they fall from the shoe through the hole *U* in the shoe-bottom.

In cleaning other kinds of grains and seeds, many changes and different combinations will readily be suggested which are not necessary to describe.

I claim as my invention—

1. The rock-shaft *w*, suspension-straps *M*, pivot-plates *N O*, adjustable rock-arm *K*, and rod *I*, in combination with shoe *B*, when said parts are constructed and arranged for operation substantially as described.

2. The adjustable knocker *t*, rod *n*, pin *o*, and blocks *h h'*, in combination with screens *c'* and *d'*, in shoe *B*, as and for the purpose described.

3. The shoe *P*, when supported at its forward end on pins *b'*, and at its rear end by suspension-strap *e*, in combination with bell-crank *z*, and rods *Y* and *z*, as and for the purpose described and set forth.

4. In combination with the shoes *B* and *P*, and their respective series of screens, the troughs *T* and *V*, when provided with the openings *W* and *U*, arranged as shown and for the purpose described.

5. The combined fanning-mill and grain-separator described, consisting of the several parts and mechanisms hereinbefore specified, constructed, combined, and arranged to operate substantially in the manner and for the purpose described and set forth.

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Witnesses:

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