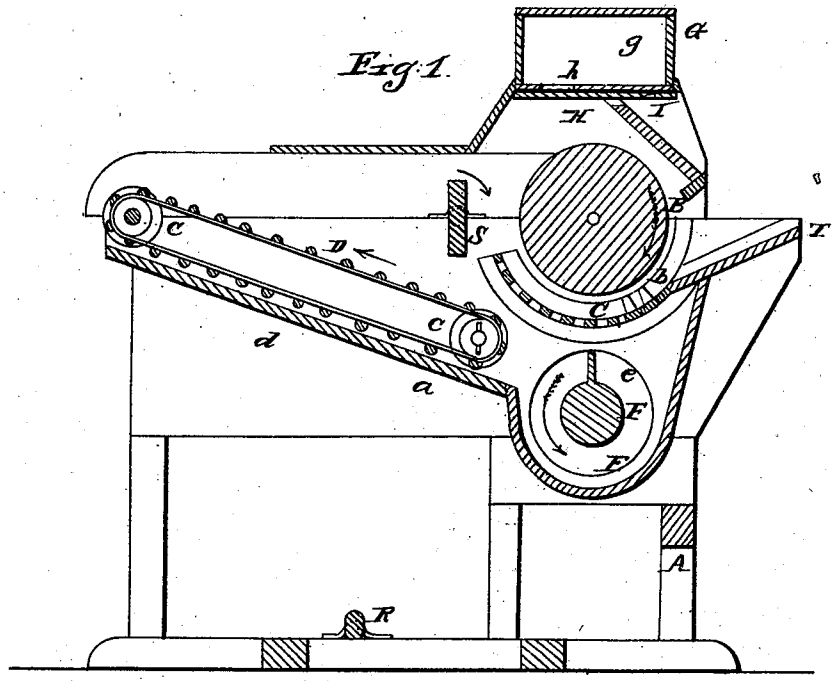
2 Sheets—Sheet 1.

J. A. WOODWARD.

THRESHING MACHINE.

No. 38,779. Patented June 2, 1863.

Fig. 1.



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2 Sheets—Sheet 2.

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Fig. 2

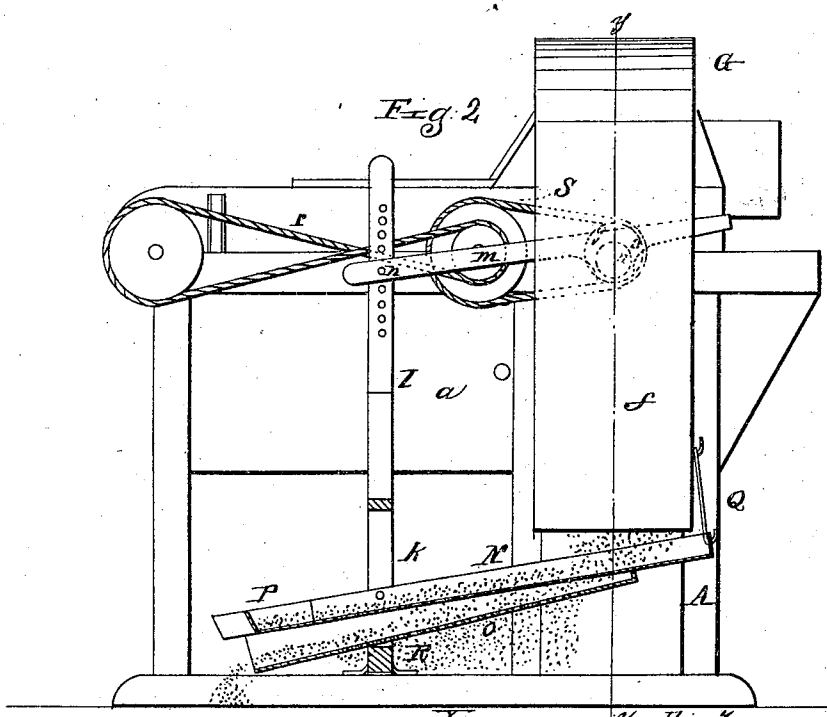
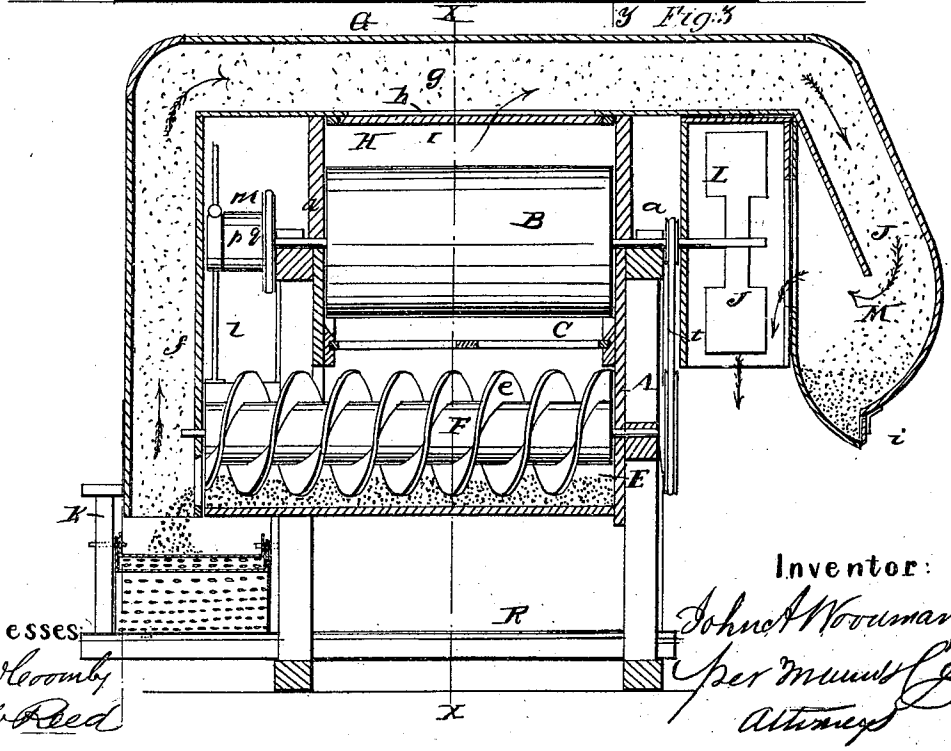


Fig. 3



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UNITED STATES PATENT OFFICE.

JOHN A. WOODWARD, OF PLATTEVILLE, WISCONSIN.

IMPROVEMENT IN THRASHING-MACHINES.

Specification forming part of Letters Patent No. **38,779**, dated June 2, 1863.

To all whom it may concern:

Be it known that I, JOHN A. WOODWARD, of Platteville, in the county of Grant and State of Wisconsin, have invented a new and Improved Machine for Thrashing Grain; and I do 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 side sectional view of my invention, taken in the line *x x*, Fig. 3; Fig. 2, a side view of the same; Fig. 3, a section of the same, taken in the line *x x*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a machine of simple construction by which grain may be thrashed and separated from impurities at one and the same operation, and at the same time without allowing the dust and dirt being expelled from the feed device or opening into the face of the attendant.

The invention consists in using, in combination with a thrashing-cylinder and slatted concave, a suction-spout, fan, spiral or screw feeder, and a screen, arranged in such a manner as to effect the desired end.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a framing, in the upper part of which side pieces, *a a*, are secured.

B is a thrashing-cylinder, which is placed transversely in the upper part of A, and directly over a slatted concave, C, which is provided with teeth *b*. The cylinder B is also provided with teeth, but they are not shown in the drawings, as they are common to all thrashing-cylinders.

D is an endless inclined slatted apron, which works on rollers *c c*, placed between the side pieces, *a a*. This apron is directly over an inclined board, *d*, which is also placed and permanently secured between the side pieces, *a a*. At the lower end of the inclined board *d* there is a semicircular recess or box, E, in which a screw, F, is placed. This screw serves as a grain-conveyer, and has its flange *e* sufficiently broad for that purpose. The screw F is directly below the slatted concave C, and it is somewhat longer than the thrashing-cylinder B, so as to project through one of the side pieces *a* and adjoin the vertical part *f* of a suction-spout, G, the upper part, *g*, of which has a horizontal position and extends over a box, H, which covers the upper part of the thrashing-cylinder. The part *g* of the suction-spout, which rests on the box H, has an oblong slot, *h*, made in it, extending the whole width of the box, and the capacity of this slot may be varied as desired, or entirely closed by means of a slide, I. (Shown in Figs. 1 and 3.)

J is a suction-fan, which is placed on the shaft K of the thrashing-cylinder B at the outer side of the framing A. (See Fig. 3.) The fan is inclosed within a box, L, which communicates at its outer side with a pendent chamber, M, the latter communicating with the horizontal part *g* of the suction-spout G, and having a flap, *i*, at its lower end. The lower part of the fan-box L communicates with the external air, and the chamber M is provided with a partition-plate, *j*, which extends some distance down within said chamber.

N O are two screens, placed one over the other, as shown in Figs. 2 and 3. The upper screen, N, is coarser than the lower one, O, and said screen N is provided at its discharge end with a side spout, P. The screens N O are connected together, and they are suspended at the back end by a link, Q, from the vertical part *f* of a suction-spout, G. The front parts of said screens rest on a bar, R, one end of which is secured by a loose connection or pivot in the lower part of the framing A, and the opposite end provided with an upright framing, *k*, to which an upright bar, *l*, is attached, having an arm, *m*, fitted on it and secured at any desired point by a pin, *n*. The arm *m* has a rectangular slot, *o*, made in the under side, so that it may be fitted over a pin, *p*, placed eccentrically in a pulley, *q*, at one end of the shaft K of the thrashing-cylinder. By this means the shake motion is given the screens N O.

In the upper part of the framing A, and directly in front of the thrashing-cylinder B, there is a rotary straw-discharger, S, which is composed of a flat board or plate hung on a central axis. The direction of the movement of the working parts is indicated by the red arrows in Fig. 1, and motion is communicated to all by the belts *r s t*, (shown in Figs. 2 and 3,) *q* being the driving-pulley.

The operation is as follows: The grain is fed

between the cylinder B and concave C on an inclined feed-board, T, and is thrashed in passing between said cylinder and concave. The grain passes down through the slatted concave C, and falls into the box E, from whence it is fed by the screw into the lower part, *f*, of the suction-spout G, where it is subjected to a suction-blast generated by the rotation of the fan J. This blast draws up the dust, chess, and light impurities through spout G, the dust being drawn into the fan-box L and expelled therefrom, as indicated by the red arrows. The chess and light shrunken grain will, on account of their gravity, lodge in the chamber M, and drop from time to time, as it accumulates, through flap *i*. The chess is indicated in blue. The grain passes from the lower end of the vertical part *f* of the blast-spout upon the screen N, and passes through said screen, while the large foreign substances are discharged from the side spout, P. The grain does not pass through the screen O, it being too fine; but it admits cockle and fine seeds to pass through it, the sound cleansed grain being discharged from the end of O. The sound grain is indicated in black, the cockle in green, and the coarse foreign substances in red.

The rotary straw-dischargers facilitate the passage of the straw from the concave C upon the apron D, which discharges the straw from the machine.

The suction-spout G, in consequence of communicating with the box H over the thrashing-cylinder, draws up the dust therefrom, which passes into the fan-box L with the other dust from the part *f*. (See Fig. 3.) By this arrangement the dust is not, as hitherto, blown into the face of the attendant.

I do not claim separately any of the parts herein described, irrespective of their general arrangement and combination; but,

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

The combination and arrangement of the suction-spout G, fan J, screw F, and screens N O, when applied to a thrashing-machine or arranged in relation with a thrashing-cylinder, B, and concave C, to operate conjointly therewith, as and for the purpose specified.

J. A. WOODWARD.

Witnesses:
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