J. W. JOHNSON.

Grain-Winnower.

No. 198,623. Patented Dec. 25, 1877.

Fig. 1.

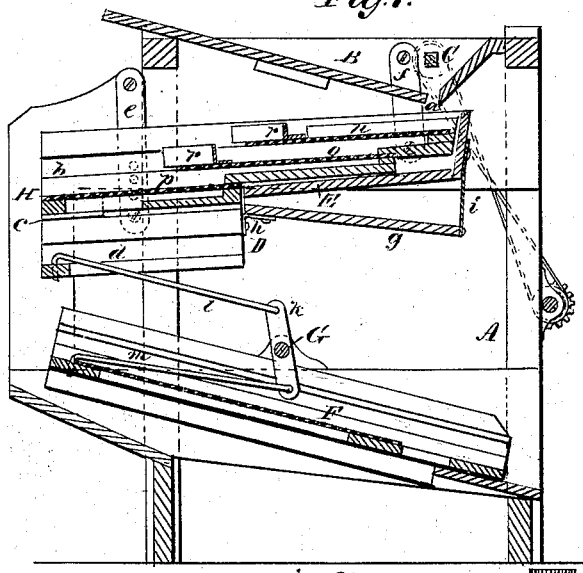


Fig. 2.

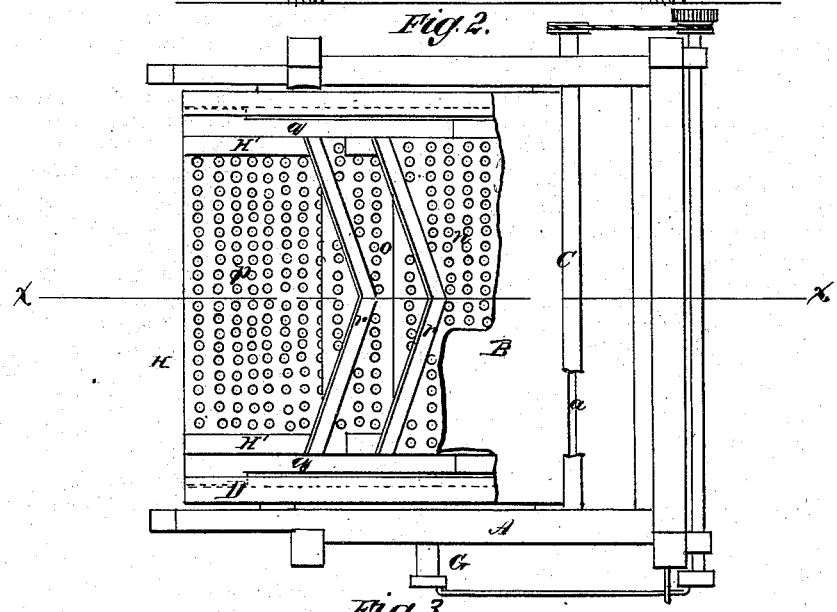


Fig. 3

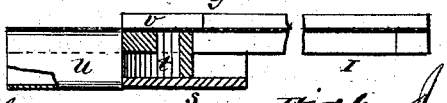
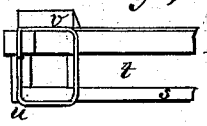


Fig. 4



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UNITED STATES PATENT OFFICE.

JOHN W. JOHNSON, OF TOWANDA, PENNSYLVANIA, ASSIGNOR TO HIMSELF, CHARLES M. MANVILLE, AND EDWIN C. BUFFINGTON, OF SAME PLACE.

IMPROVEMENT IN GRAIN-WINNOWERS.

Specification forming part of Letters Patent No. **198,623**, dated December 25, 1877; application filed October 8, 1877.

To all whom it may concern:

Be it known that I, JOHN W. JOHNSON, of Towanda, in the county of Bradford and State of Pennsylvania, have invented a new and useful Improvement in Fanning-Mills, of which the following is a specification:

Figure 1 is a vertical section taken on line *x x* in Fig. 2. Fig. 2 is a plan view, with a portion broken away to show internal parts. Figs. 3 and 4 are detail views of portions of the cockle-screen.

Similar letters of reference indicate corresponding parts.

The object of my invention is to improve the construction of fanning-mills, so that a rapid and complete separation of grain of different kinds, and of grain and seeds or dirt, may be easily effected.

The invention consists in a rotating polygonal roller placed above the mouth of the grain-chute, for insuring an even delivery of grain to the grain-board; also, in a cockle-separator and an oat-screen; also, in a peculiar method of hanging the shoe and transmitting motion to the shoe and grain-screen; also, in a wind-deflector for controlling and directing the blast, all as hereinafter more fully described.

In the drawings, A is the frame of the mill, which contains the several working parts, and is surmounted by a grain-chute, B, having the narrow mouth *a*, which extends from one side of the frame to the other. Above and parallel to the mouth *a* a square bar or roller, C, is journaled, which receives its motion from one of the rotating shafts of the machine, and is designed to agitate the grain, so as to prevent clogging in the mouth *a* and insure a continuous and even supply of grain to the screens.

D is the shoe, which is provided with grooves *b c d* for receiving the screens, and with a grain-board, E. The shoe D is suspended by straps *e f*, upon which it may oscillate lengthwise. The straps *e* are provided with several apertures for adjusting the inclination of the shoe.

A deflector, *g*, is hinged to the shoe D at *h*, and is supported at the opposite edge by a piece of cloth, *i*, which is nailed to the edge of the deflector and to the back of the shoe. This deflector is capable of being adjusted by raising or depressing its free edge, so as to direct the course of the blast created by the fan.

A grain-screen, F, is placed in guides in the lower part of the mill-frame, and is inclined downward toward the rear of the machine.

A rock-shaft, G, is journaled in the frame A, and is provided with a lever, *k*, having equal arms, to one of which the shoe D is connected by a rod, *l*. The screen F is connected to the other arm by a rod, *m*, so that when the shaft is oscillated the screen F and shoe D are simultaneously moved in opposite direction. The longitudinal motion thus imparted to the shoe and screen effects an even distribution of the grain on the screens or sieves, and avoids the accumulation of grain at the center of the screens common to mills employing a lateral movement.

H is a triple screen for separating oats and wheat, consisting of the screens *n o p*, which are shorter than the shoe D, and are placed one above the other, a short distance apart, in steps. Under the rear of each screen there is a grain-board, which carries the grain that drops through the screen forward to the next screen below. The screens *n o* are each provided with ledges or lips *r*, which run forward diagonally from the center of screen to its sides.

The screen-frame is provided at the sides of the screens with longitudinal ribs H′, sufficiently removed from the edge of the screen-frame and the sides of the shoe to form, in connection with the latter, side gutters when the screen-frame is put in place, through which the oats are passed off from the screen.

The triple screen H is placed in the shoe D with its upper screen *n* above the grain-board and below the mouth of the chute.

The wheat and a portion of the oats delivered to the first screen drop through the screen to the grain-board and screen *c* below, while the oats on the screen move forward and are guided by the ledges *r* to the gutter *q*. The wheat that falls through the screen *o* is delivered to the screen *p*, while the remaining oats are carried to the gutters *q*, as before. The remaining oats fall over the edge of the screen *p*, while the wheat falls through the said screen, and is received by the screen F.

The cockle-screen I is fitted to the groove *b*, and is provided with a board, *s*, which is supported a short distance below it by pieces *t*, which run from the center of the board *s* diagonally toward the lower corners of the chute, where there are spouts *u* for delivering the cockle, &c., to the tail-board of the mill.

The board S, when the cockle-screen is in place in the shoe D, abuts against the edge of the grain-board E, and forms with it a receiver for cockle and small seeds that drop through the screen.

Ribs *v* are secured to the upper surface of the screen I, for guiding the grain, so that it is delivered to the next screen below, where it is treated by the blast in the usual way.

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

1. A hinged wind-board, *g*, supported at its swinging end by a cloth or apron, *i*, detachably connected with the shoe, for allowing the board to be dropped perpendicularly in front of the sieves for shutting off the blast in cleaning clover and other small seeds.

2. The sieve I, provided with the partial bottom *s*, adapted to join the grain-chute board F, and to form, in connection therewith, the chute-board or bottom to the sieve I, the partial bottom *s* being provided with the two discharge-outlets *u*, arranged and operating as described.

3. The screen provided with flanges or ribs H′ a short distance from and parallel with its ways, adapted to form gutters in connection with the sides of the shoe when the screen is in place, substantially as and for the purpose described.

4. The perforated zinc screens, arranged in steps overlapping each other, and provided with the V-shaped deflecting-flanges, inclining outward and forward, as described, in combination with side flanges H′, adapted to form gutters on the sides of the screen-frame between the screens and the sides of the shoe, as described.

5. The agitating-roller C, made in the square or polygonal form shown and described, whereby it is adapted to agitate the grain, and thus to feed it without endangering its being crushed.

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Witnesses:
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