J. DAVIS.

Grain Separator.

No. 50,913. Patented Nov. 14, 1865.

FIG. 1.

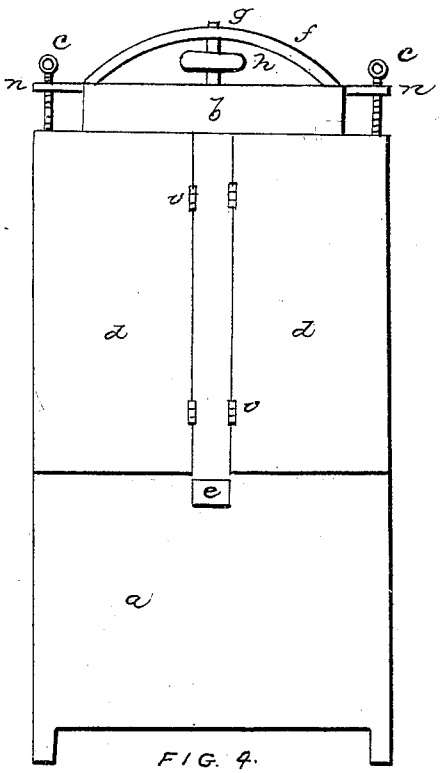


FIG. 2

Sectional View

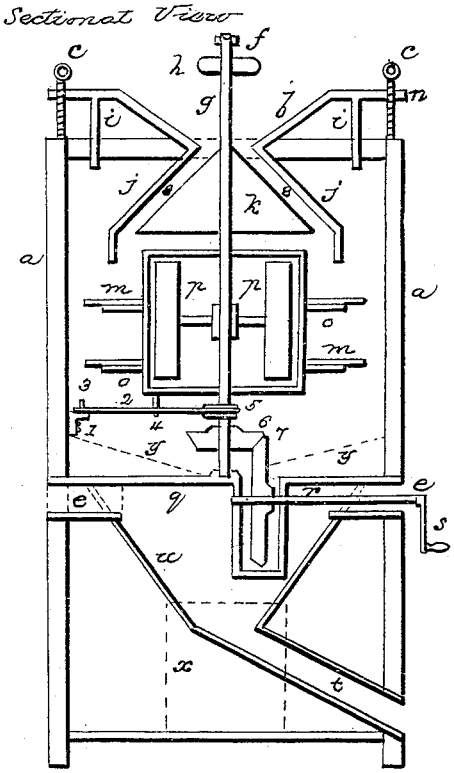


FIG. 4.

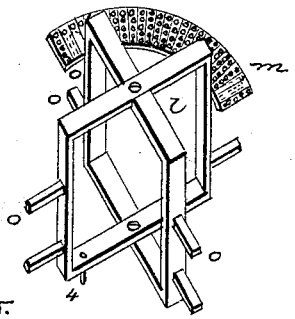


FIG. 5.

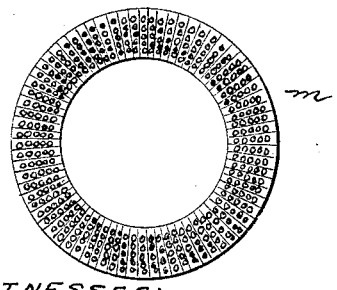
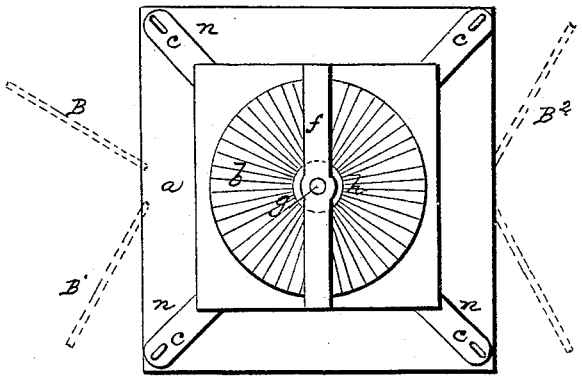


FIG. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN DAVIS, OF ALLEGHENY CITY, PENNSYLVANIA.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **50,913**, dated November 14, 1865; antedated November 2, 1865.

To all whom it may concern:

Be it known that I, JOHN DAVIS, of Allegheny City, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Winnowing-Mills; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in an arrangement of hopper, distributing-cone, screens, and fan, the whole being constructed, arranged, and operating in the manner hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, Figure 1 is a side view of the winnowing-mill. Fig. 2 is a top view. Fig. 3 is a cut or sectional view. Fig. 4 is a perspective view of the support for the screens, and represents a section of one of the screens. Fig. 5 represents a top view of the screens used in connection with the support represented in Fig. 4.

a represents the case of the mill.

b represents the hopper, which is furnished with lugs *n*, regulating-screws *c*, flange *i*, and part *j*.

k represents the distributing-cone, which is secured permanently to the shaft *g*. The surface of the cone should be made corrugated, so as to give certainty of action in distributing the grain to the action of the fan. The cone may be made to revolve or have a vibrating motion.

p represents the fan, which is attached to the shaft *g*, the lower end of which rests in the cross-piece *q*, and the upper end is supported by the arch *f*. On the upper end of the shaft may be placed a driving-pulley, as at *h*. The support *l* of the screens *m* is secured on the shaft *g*, and has an oscillating or vibrating motion imparted to it by means of the cam 5 and lever 2. The lever 2 is secured to the side of the case *a* by means of the lug 1 and pin 3, and the support *l* is connected with the lever 2 by means of pin 4. It will be readily observed that the screens *m*, which rest on the arms *o*, will have the same motion as that imparted to the support *l*. 6 and 7 are the driving-wheels, which are secured to the shafts *g* and *r*. The shaft *r* has its bearings in the cross-piece *q*.

e represents air-passages for admitting air to the fan.

u represents a concave screen, which is furnished with a chute, *t*.

The dotted lines *x* represent a door leading into the space under the screen *u*.

d represents side pieces, which are hinged at *v*, and are used for enlarging the openings for the escape of the dust or other matter thrown from the grain by the action of the fan.

The dotted lines marked B B′ B^2 B^3 represent various positions into which the side pieces, *d*, may be placed. All counter-currents of air will be avoided by placing a covering over the screen *u*, as represented by the dotted lines marked *y*. This covering should have an opening in its center about equal in size to the circle of the fan. The part of the hopper marked *j* forms the outside case of the supply-chamber S. The size of this chamber is regulated by raising or lowering the hopper by means of the screws *c*.

I wish it to be clearly understood that I do not confine myself to any particular size or form of the various parts herein described, for these can be varied to suit the taste and judgment of the mechanic. Having the various parts constructed and arranged as described and represented, and having the hopper set so that the desired size of chamber S is obtained, I then put the fan in motion by turning the crank *s*; I then put the grain in the hopper in the usual manner, and the revolving or vibrating motion of the cone will distribute the grain evenly to the action of the fan as it falls on the screens *m*, from which it falls into the concave screen *u* and passes out at the chute *t*.

Having thus described the nature, construction, and operation of my improvement, what I claim as of my invention is—

The arrangement of the fan *p*, screens *u* and *m*, distributing-cone *k*, and hopper *b*, furnished with lug *n*, screws *c*, flange *i*, and part *j*, the whole being constructed, arranged, and operating in the manner and by the means described, and for the purpose set forth.

JOHN DAVIS.

Witnesses:

JAMES J. JOHNSTON,

ALEXANDER HAYS.