J. MEYER.

Grain Winnower.

No. 33,537. Patented Oct. 22, 1861.

Witnesses
A. M. Gisel
Aby Wolcott

Inventor.
Jacob Meyer.

UNITED STATES PATENT OFFICE.

JACOB MEYER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **33,537**, dated October 22, 1861.

To all whom it may concern:

Be it known that I, JACOB MEYER, of Chicago, in the county of Cook, State of Illinois, have invented certain a new and useful Improvement on a Machine to Clean Grain and Seed; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which--

Figure 1 is a front elevation; Fig. 2, a top view; Fig. 3, a side view; Fig. 4, a longitudinal section; Fig. 5, a part of the screen in natural scale and to the letters of reference marked thereon.

The nature of my invention consists in separating impurities or foreign substances from the grain or seed by a peculiar arrangement and combination of parts in the above-named machine.

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

In operating this machine the grain which has previously been cleaned from the chaff is put into the hopper *a*, made adjustable by a slide *b*, as marked on the accompanying drawings. Passing from the hopper onto a screen *c* both the sound and light portions of the grain, together with small particles of dirt and other impurities, will roll through upon a coarse sieve *d*, (see Fig. 4 of drawings,) from which the sound portion finds its way through a slot *e* into a trough *f*, whence it falls into the wind-chamber *g*, as shown on drawings, while the larger particles of impurities or foreign substances will pass out of the screen *c* by the way of an inclined spout *h*, which projects two inches, as shown in Figs. 1, 2, &c., of the accompanying drawings. The light portion of grain, &c., going through the sieve *d* falls upon a sink *i*, which is fastened to the screening-box *c'*, and has an inclination toward and around a slot *k*, whence it also discharges this portion of grain, &c., through a trough *l*, being in connection with the trough *f* into the wind-chamber *g*. In operating the machine the screen *c*, sieve *d*, and sink *i* are shaken in the manner shown by the accompanying drawings. The screen and sieve are connected by screws. The meshes of the screen *c* are of an oblong form, curved at their ends, and not over five-sixteenths by five thirty-seconds of an inch in size, as shown in Fig. 5. The sieve *d* will of course have fine or coarse meshes, according to the grain or seed to be cleaned.

The construction of the wind-chamber *g* in connection with the fanning-box *m* is based upon the principle that the effect of a stream or rush of air (blast of wind) will exercise horizontally upon the falling grain or seed, driving it in proportion of its lesser gravity further from a perpendicular line of its fall. The above rush of air or blast is produced by concave fans *n n*, &c., within a cylindrical box *m*, two feet in height by two feet in diameter (2 by 2) and for any additional force of air the fans must be increased in diameter one-half greater than in height, thus acting upon the falling grain, &c., not less than two (2) feet high. The blast can be regulated by valves *s s* on the top and at the bottom of the wind-box. The wind-chamber *g* has to be at least six (6) inches higher than the fanning-box, so that the grain, &c., after having passed through the blast, falls through that space (6 inches) not having been acted upon by the wind before entering and falling through a sliding box *o*. Said space of six inches has to be increased in proportion to the general enlargement of the machine. Into the sliding box *o* is fastened a sheet-iron plate *p* at such an inclination as to prevent the heaviest or best portion of grain, &c., from passing by. If desired to separate two kinds of grain from each other, one for seed and another for common use, there is a second sheet-iron plate *r* put into the box *o*, made adjustable as may be required. The whole box *o* can be slid back and forward to suit the particular kind of separation required, whence the grain and impurities are discharged separably on the floor.

The machine shown in the accompanying drawings has five (5) concave fans, which may make two hundred (200) revolutions per minute when worked by hand and two hundred and fifty (250) when worked by steam-power, and will clean four hundred (400) bushels of grain per day, and can be increased to clean one thousand bushels per day. The maximum distance of the fans at their outer ends has to be about fifteen (15) inches. Hence enlargement of the cylindrical box *o* will

cause additional fans to obtain the same force of wind continually.

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

The arrangement of the screen *c*, fanning-box *m* and curved fans *n*, wind-chamber *g*, and sliding box with its separating-plates *p* and *r*, the whole constructed and operating substantially as and for the purpose above set forth.

JACOB MEYER.

Witnesses:
A. M. HIRSCH,
ALEX. WOLCOTT.