

(No Model.)

2 Sheets—Sheet 1.

O. D. DICKEY.
FANNING MILL.

No. 480,809.

Patented Aug. 16, 1892.

Fig. 1.

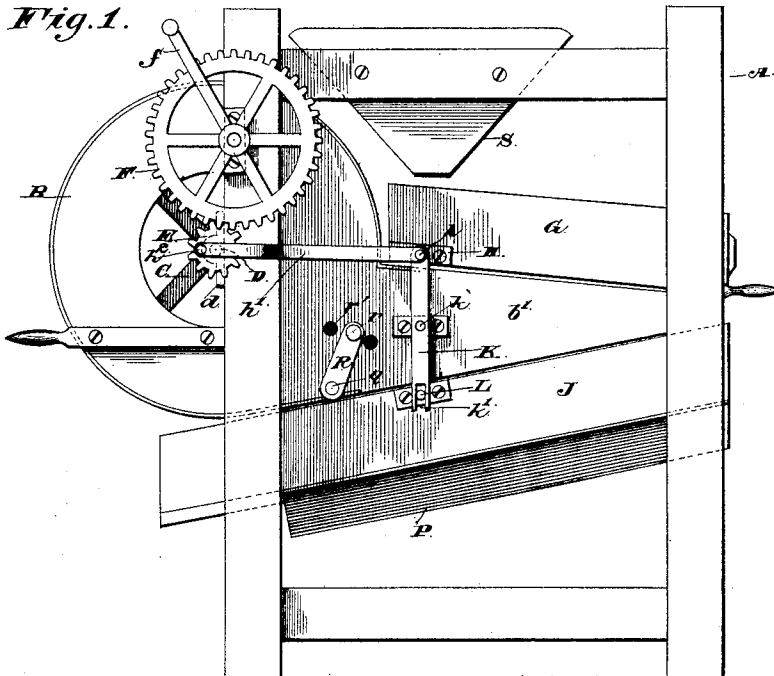
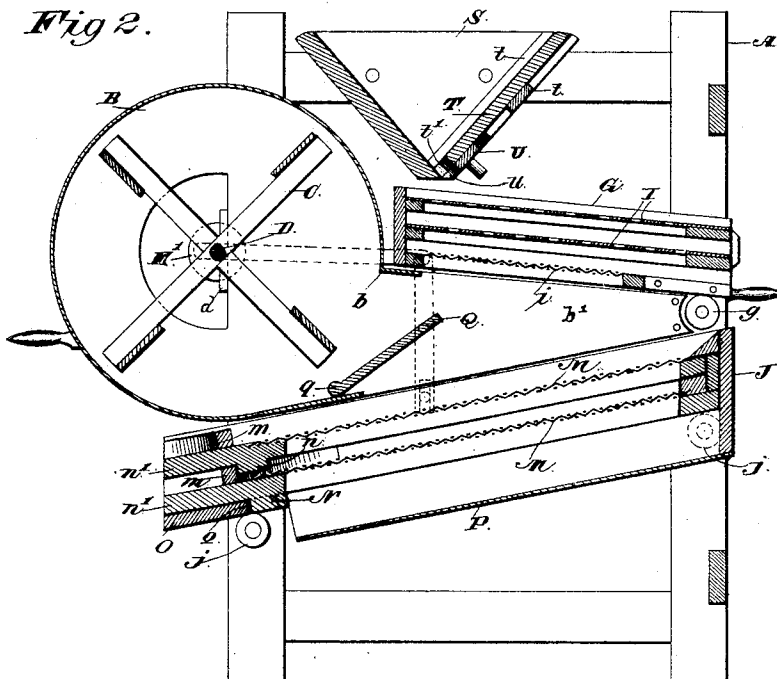


Fig 2.



Witnesses

M. E. Fowler
D. P. McLaughlin

Inventor

Osbert D. Dickey

By his Attorneys,

C. A. Snow & Co.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

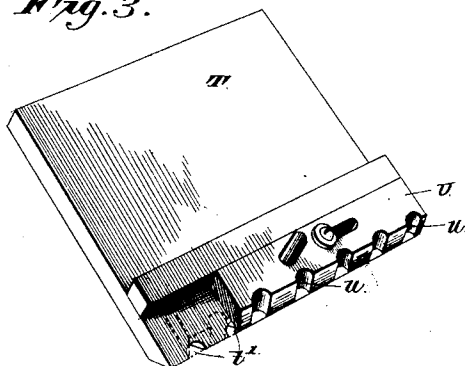


Fig. 4.

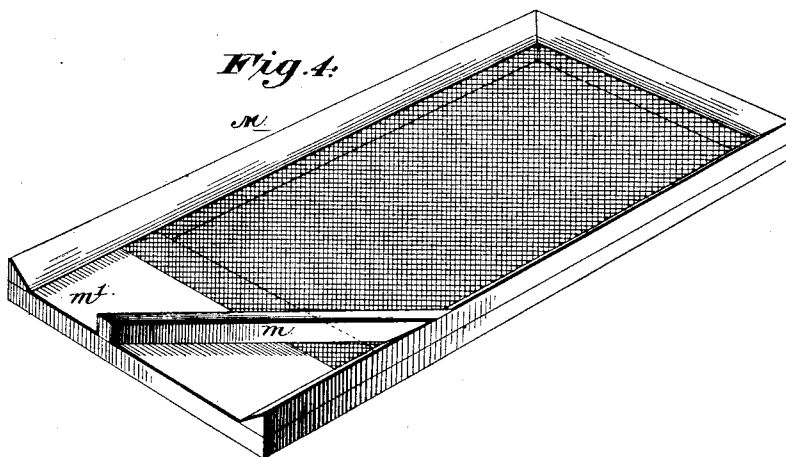
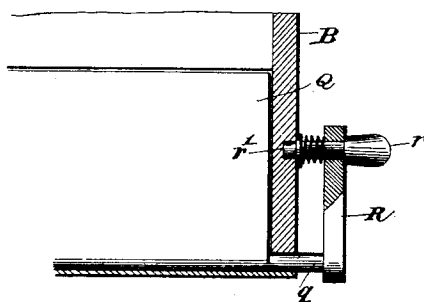


Fig. 5.



Witnesses

M. Fowler
D. Walhaup

Inventor

Osbert D. Dickey

By his Attorneys,

C. Snow & Co.

UNITED STATES PATENT OFFICE.

OSBERT D. DICKEY, OF MOUNTAIN GROVE, MISSOURI.

FANNING-MILL.

SPECIFICATION forming part of Letters Patent No. 480,809, dated August 16, 1892.

Application filed January 30, 1892. Serial No. 419,770. (No model.)

To all whom it may concern:

Be it known that I, OSBERT D. DICKEY, a citizen of the United States, residing at Mountain Grove, in the county of Wright and State of Missouri, have invented a new and useful Fanning-Mill, of which the following is a specification.

This invention relates to grain-separators; and it has for its object to provide a grain-separator commonly called "fanning-mills," which will provide for a ready separation of grain and grass-seed, and which will provide by its particular construction and combination of parts for a perfect grading and cleaning of the grain passed therethrough for separation.

To this end it is the main object of this invention to provide an improvement in fanning-mills, which shall be superior to and have many advantages over machines of the same character, both in point of construction and operation.

With these and many other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a grain-separator constructed in accordance with this invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a detail in perspective of the hopper-gate and slide. Fig. 4 is a detail view of one of the lower grading-sieves. Fig. 5 is a detail transverse sectional view.

Referring to the accompanying drawings, A represents the framework of the separator, between which and one end is located the rounded fan-casing B, accommodating the rotary fan C, carried by the horizontal shaft D, which is journaled in suitable bearings *d* at the end of said framework. The inner side of said rounded fan-casing B is provided with a blast-opening *b*, from which the opposite ends of the fan-casing extend to the opposite end of the framework to form the extended opposite parallel and inclined sides *b'*, which, in connection with the upper and lower shoes, to be described, form an air-trunk for the blast of air. The shaft D is provided on one

end with the crank-pinion E, meshing with a large driving-gear F, journaled on the side of said framework and operated by the ordinary crank-handle *f*, by means of which said pinion is turned to rotate the fan and reciprocate the upper shoe G. The upper shoe G is located and works directly over the opposite forwardly-extending inclined sides *b'*, and has the front ends of the opposite sides thereof rest and work upon the supporting-rollers *g*, which thus allow for an easy reciprocation of the upper shoe. To opposite inner sides of the upper shoe G are secured the opposite stud-plates H, having a projecting pin or stud *h*, which receives the inner ends of the operating-rods or pitmen *h'*, pivotally mounted over said studs at one end and the crank-pins *h*² at the other end, which crank-pins are carried by the crank-pinion E and the opposite crank-wheel E', keyed upon opposite ends of the fan-shaft D, which when operated communicates motion to the upper shoe.

The upper shoe G receives the removable perforated sieves I, suitably secured within the shoe one above the other and having their perforations out of line with each other, so as to allow for a more thorough separation of the grain. The said sieves I are preferably of perforated metal in order to be especially adapted for separating the oats from the wheat. The said upper shoe G is also provided beneath the lowermost sieve I with a stationary fine-mesh sieve portion *i*, which catches the separations falling directly through the sieves I back of the outer ends of said sieves and, while allowing the blast of air thereunder to pass through the grain and carry off the chaff and other foreign matter, at the same time shakes the grain over its outer end in rear of the outer ends of said sieves and into the receiving end of the oppositely-inclined reciprocating lower shoe J. The lower shoe J is located beneath the parallel sides *b'* and extends beneath said sides and the fan-casing the entire length of the machine. Opposite pairs of supporting-rollers *j* are secured at opposite ends of the framework A in different planes, and the same take under the opposite edges of said lower shoe to support the same at an incline and allow for the free and easy reciprocation of the same. Oscillating levers

K are pivoted upon the opposite parallel sides b' at k and are loosely connected at their upper ends with the studs k at opposite inner ends of the upper shoe, and thus serve to support said inner end of the upper shoe, which shoe fits closely over the upper edges of the parallel arms b' and serves to confine the blast of air. The lower ends of the oscillating levers K are bifurcated, as at k' , and take over the projecting pins L, extending from opposite sides of the lower shoe. This connection provides for the reciprocation of the two shoes simultaneously with each other, but in different directions, so as to work the grain toward their lower discharging ends, respectively, the upper shoe of course dropping its separations into the upper receiving end of the lower shoe. The said elongated lower shoe J accommodates the superposed grading-screens M, removably mounted in said shoe and adapted to enable the operator to grade the grain, as desired. Each of the screens M are provided at their lower discharging ends with the inclined guide-boards or deflecting-strips m , arranged at an angle across the ends of said screen alternately with relation to each other, so as to form opposite mouths m' , falling from which the grain or seed from the respective screens will not be confused, and can be readily received in different receptacles from each. The lowermost screen M is provided with a locking-lug N, projecting below the rear edge of the front connecting-board n' , with which each screen is provided, and said lug is designed to drop into the locking-notch o in the inner edge of the front connecting-board O, connecting the front ends of the lower shoe J, so that when the lower screen is slid sufficiently far into the shoe the said lug drops into position within said notch and locks said screen in position, and which screen can only be removed by raising the same to lift the lug out of the notch and then drawing the screen out of the shoe. The screen placed upon the lower screen is similarly locked by having its locking-lug n dropping back of the inclined deflecting strip or board m of the screen therebeneath. By using both of the screens M the operator is enabled to grade his grain in reference to size for seed or by taking out the upper grading-screen is enabled to clean his grain for market. The matter passing through the lowermost grading-screen and not out of the mouth thereof is caught in the angular pan P, forming the bottom of the lower shoe and extending to the inner edge of the outer board O, and at this point discharges its contents over its lower discharging end, as will be quite apparent.

A blast-regulating board Q is hinged upon the oscillating rod or shaft g , pivoted or journaled at the lower edge of the blast-opening in the fan-casing. The outer end of said rod g terminates in an operating-crank R, in the

upper end of which works the spring-actuated locking-pin r . The said spring-actuated locking-pin r is adapted to engage any one of the series of perforations r' , located in one end of the fan-casing, and thus provides means whereby the blast of air from the fan may be directed with more or less force between the two shoes, and particularly against the upper shoe for driving off the chaff and other matter.

Located directly over the inner receiving end of the upper shoe G and within the top of the frame A is the feeding-hopper S. The feeding-hopper S is provided with the sliding gate T, working in the side cleats t , and said sliding gate is provided at its lower edge with a series of feeding notches or openings t' , which allow for the passage of the grain onto the upper shoe, and which may be accurately regulated by the regulating-slide U, secured to the lower outer edge of said gate T, and itself provided with a series of notches or openings u , corresponding to those in said sliding gate, and adapted to be thrown in and out of alignment with the said openings to regulate the passage of the grain and the quantity onto the uppermost shoe.

The construction herein described provides for a most effective separation of the grain passed through the machine, and the many advantages accruing therefrom and the nature of the improvements embodied by the machine are thought to be apparent without further description.

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

In a grain-separator, the combination, with the fan-casing and the upper separating-shoe located in the rear of said casing, of a lower grading-shoe extending the full length of the machine and receiving the grain from said upper shoe, opposite pairs of supporting-rollers taking under opposite sides of said lower shoe, said lower shoe having an angular bottom pan and an outer connecting-board arranged above the delivering end of said pan and having a locking-notch, a grading-sieve removably placed within said shoe and having a locking-lug adapted to drop into said notch and an inclined deflecting-strip located at its outer end to form a discharging-mouth, a superposed screen placed above the lowermost sieve and provided with a securing-lug adapted to drop back of said deflecting-strip, and a similar but oppositely-disposed deflecting-strip, and means for moving said shoes, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

OSBERT D. DICKEY.

Witnesses:

E. H. STEWART,
A. J. RUDD.