

D. D. DICKERSON.
Grain-Separators.

No. 152,345.

Patented June 23, 1874.

Fig. 1.

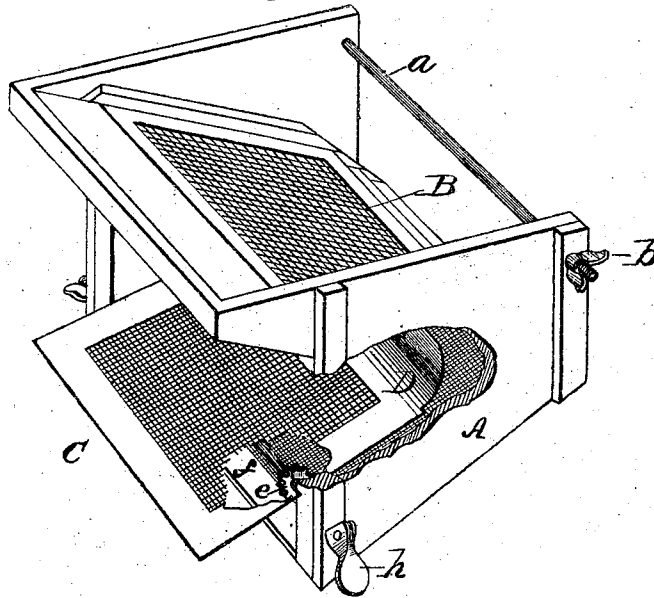
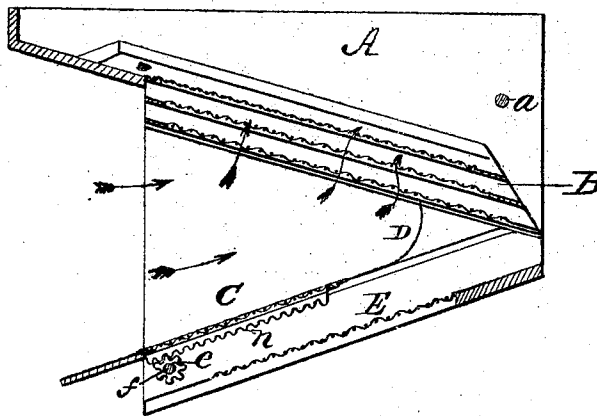


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

DAVID D. DICKERSON, OF JORDAN, MINNESOTA.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **152,345**, dated June 23, 1874; application filed February 17, 1874.

To all whom it may concern:

Be it known that I, DAVID D. DICKERSON, of Jordan, in the county of Scott and State of Minnesota, have invented certain Improvements in Grain-Separators, of which the following is a specification:

My invention consists of an air-deflector, applied to the longitudinally-adjustable screen of a fanning-mill, whereby the air or blast from the fan is directed upward through the meshes of the sieves above, for the purpose of more effectually separating the lighter materials from the grain; and also in the application of a rack and pinion, for adjusting the screen, with a locking-cam to secure it in place when adjusted, all as hereinafter more fully set forth.

Figure 1 is a perspective view of the shoe of a fanning-mill with my improvement applied, a portion being broken away to show the interior. Fig. 2 is a longitudinal vertical section of the same.

My improvement is more especially intended for cleaning wheat, and assorting or dividing it into different grades, as required for market; but may be used with advantage in the cleaning of all kinds of grain.

In the drawings, A represents the shoe or shaking-frame that holds the sieves in a fanning-mill or grain-separator. In this shoe, a gang, B, of sieves, are usually mounted to separate the chaff and other light material from the grain; these sieves being sometimes made separate, so they can be changed or arranged at will, and at other times being united in a gang; as in this case. It is customary in cleaning and assorting wheat for market to use underneath the sieves B one or more screens, which are of such sized meshes as to separate the larger and plumper kernels from the smaller and lighter ones, and by that means divide the grain into two qualities or grades. Experience has shown that it is difficult to effect this separation satisfactorily, and besides, that there are certain seeds mixed with the wheat that it is difficult to separate therefrom by the ordinary means. To remedy these difficulties I take the upper or wheat screen C, and attach to its rear end a curved deflector, D, made preferably of zinc or other sheet metal; this deflector D being bent or curved up at its rear end, as shown in Figs. 1

and 2, so as to deflect the current of air or blast from the fan, and cause it to pass upward through the meshes of the sieves above, as indicated by the arrows in Fig. 2, instead of passing back between the sieves, as it ordinarily does. By this means the heavy kernels are separated from the lighter, the former falling through the sieves upon the screen C in front of the deflector D, while the lighter kernels, being lifted or prevented from falling by the ascending current of air, are carried further back on the sieves, and fall in rear of the deflector upon the lower screen E, which delivers them at a different point from those that fall on the screen C, thereby effecting a thorough separation of the grain, and delivering it graded ready for market. In order to adjust the screen with the deflector D forward or back, as may be required, I attach to the under side of the screen near each edge a rack, *n*, which engages with a corresponding pinion, *e*, on a rod, *f*, which passes transversely through the shoe A, as represented in the drawings, so that by turning the rod *f* the screen and deflector may be shoved forward or back, as desired. In order to fasten it in place when adjusted I pivot to the end of the rod *f* a handle or cam, *h*, by which the rod can be turned, and which, when turned on its pivot, will lock the rod so it cannot be turned; there being a thumb-nut on the opposite end of the rod *f*, by which it can be tightened up so as to make the cam *h* bear with any required degree of tightness.

When it is desired to separate only the very choicest of the grain as first quality the deflector will be moved further forward, and thus by adjusting it forward or back the grain can be graded just as desired.

I find this improvement of advantage, also, in cleaning other kinds of grain besides wheat, as the current of air passing up through the sieves tends to lift the chaff and lighter material so that the passing current of air gets a better hold upon it, and is, therefore, more certain to carry it back out of the mill.

I find this improvement especially serviceable in separating the seed of wild hemp from wheat, which seed, being so nearly of the same weight of wheat, it is impossible to fully separate by the ordinary mill or separator.

It is obvious that this deflector may be applied to the separators used in thrashing-machines, as well as to the ordinary fanning-mills.

Having thus described my invention, what I claim is—

1. The longitudinally-adjustable screen C, provided with the deflector D, arranged to operate in a grain-separator, substantially as shown and described.

2. The rod *f*, provided with one or more pinions, *e*, and the locking-cam *h*, in combination with a screen provided with corresponding rack *n*, for adjusting and securing the parts in place, as set forth.

DAVID D. DICKERSON.

Witnesses:

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