T. J. DOYLE.

GRAIN SEPARATOR.

No. 186,235. Patented Jan. 16, 1877.

Fig 1

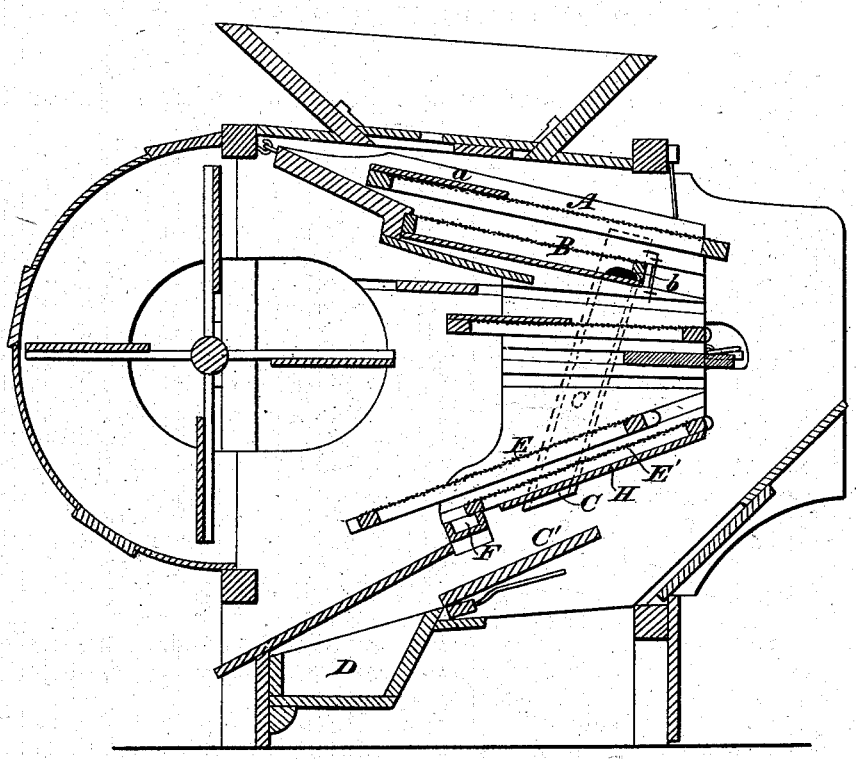


Fig 2

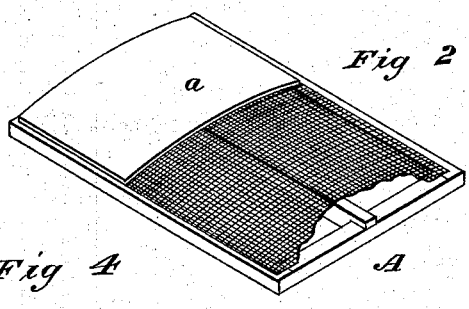


Fig 3.

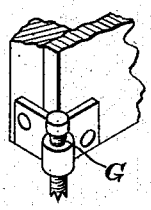
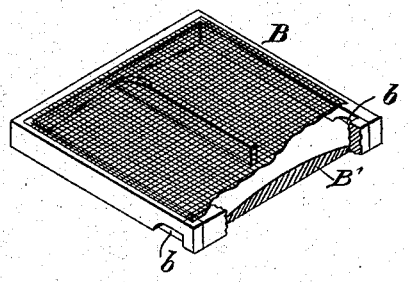


Fig 4



WITNESSES

Geo. H. Breck

Wm A Skinkle

INVENTOR

Thomas J. Doyle

By his Attorneys

Baldwin, Hopkins & Peyton.

UNITED STATES PATENT OFFICE.

THOMAS J. DOYLE, OF RHEATOWN, TENNESSEE.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **186,235**, dated January 16, 1877; application filed November 21, 1876.

To all whom it may concern:

Be it known that I, THOMAS J. DOYLE, of Rheatown, Green county, Tennessee, have invented certain new and useful Improvements in Grain Cleaners or Separators, of which the following is a specification that will enable those skilled in the art to which they appertain to make and use the same, reference being had to the accompanying drawings.

My invention relates to an adjuster for rendering the operation of the screens more efficient.

Figure 1 is a longitudinal vertical central section of a fanning-mill embodying my improvements; Fig. 2, a view, in perspective, of the upper sieve; Fig. 3, a like view of one of the adjusting devices for canting the screens; and Fig. 4, a similar view of the sieve for separating the grain from other seed and impurities, and conveying away the screenings.

A is a double-sloping sieve, extending under the hopper, and covered at its inner end, where the grain falls from the hopper, by a double sloping metallic plate, *a*. This sieve and plate slope or decline to the rear of the mill, and are elevated in the center, so as to form double inclines or slope each way laterally. B is a sloping screen, also inclined from the side to the center, provided with a like double-sloping tight bottom, B′, which catches the screenings and prevents their further direct descent. In the sides of the frame of this screen, at the opposite lower corners, are apertures *b b*, through which, by shaking, the screenings pass into chutes or spouts C C, and thence drop on the chess-board C′, and pass down into the drawer or chess-box D. The sieves A and B are the same illustrated in my patent of December 15, 1857. E E are two ordinary screens, the former being adjustable over the latter in the usual way, so as to project below it, and convey the perfect seed-grain onto the grain-board to be delivered in front of the mill. The screen E′ projects farther to the rear than the screen E, so that the lighter grain will be blown over the latter and fall upon the former. At its inner end the screen E′ connects with the laterally-inclined box or spout F′, into which it delivers its grain, that passes out of the spout at the side of the mill.

Set-screws G, preferably forked at their ends, are employed for the purpose of adjusting the screens in such a position as to evenly spread the grain and foul matter to be separated therefrom over their surfaces.

In practice it is found that a nice lateral adjustment of the screens is essential to prevent the uneven distribution of the uncleaned grain falling from the hopper; otherwise, it being of differing specific gravity, portions of it will mass on one side, and thus the cleaning be imperfectly accomplished. In general this massing of the grain and its impurities is liable to occur on the side opposite to where the shaking mechanism is attached. Hence it will be found sufficient to apply the screen-adjuster on that side, and it is in practice found expedient to so adjust the screens that they shall incline in some slight degree to the opposite side.

The object of providing the ends of the set-screws with prongs or forks is, that they may enter the floor on which the mill rests, and prevent the screws from unscrewing and losing their adjustment, and also to prevent the mill itself from getting out of position. A convenient method of applying the set-screws is by attaching screw-threaded brackets to the feet or lower ends of the mill-posts, as shown in the drawings.

The operation of my invention is as follows: The screen-adjuster being properly set, the hopper will drop the uncleaned grain upon the double-sloping plate *a*, where it will be partially spread, and then delivered and distributed upon the double-sloping sieve A. This sieve permits all the wheat and small impurities to pass through it, and only carries off larger matter to be deposited with the tailings. The wheat and small impurities fall upon the double-sloping screen B, which separates such of the latter (chess, cockle, &c.) as will naturally fall through it, and thence pass down the side chutes into the chess-box. The grain and lighter impurities will pass over this screen B, and in falling the chaff will be blown to the rear, and the best seed-grain will drop upon the screen E and be delivered in front of the mill, while the lighter merchantable grain will drop on screen E′, and be delivered into the laterally-inclined

box or spout F, and thence to the side of the mill. Screen E′ performs a further screening function similar to that set forth respecting screen B, the screenings from it dropping onto the cheat-board, and being thence delivered into the chess-box D.

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

The forked or pronged screen-adjusting screw G, substantially as described.

In testimony whereof I have hereunto subscribed my name.

THOS. J. DOYLE.

Witnesses:
WM. A. SKINKLE,
F. STITH.