W. M. REDD & E. M. SANFORD.

Grain-Separator.

No. 203,648. Patented May 14, 1878.

Fig: 1.

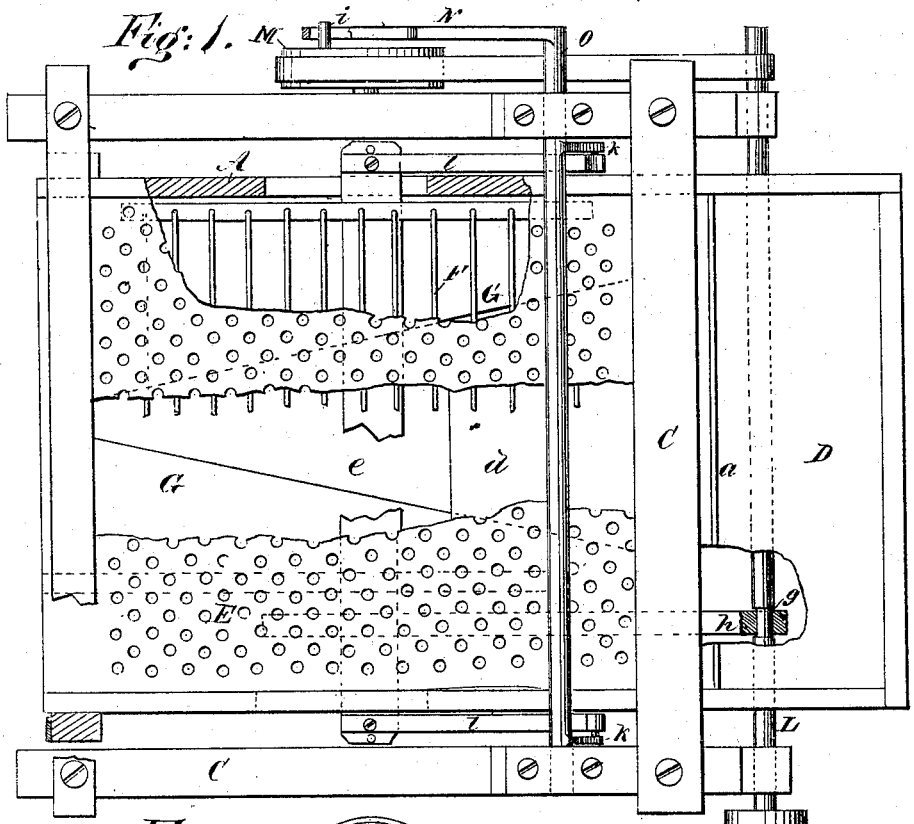
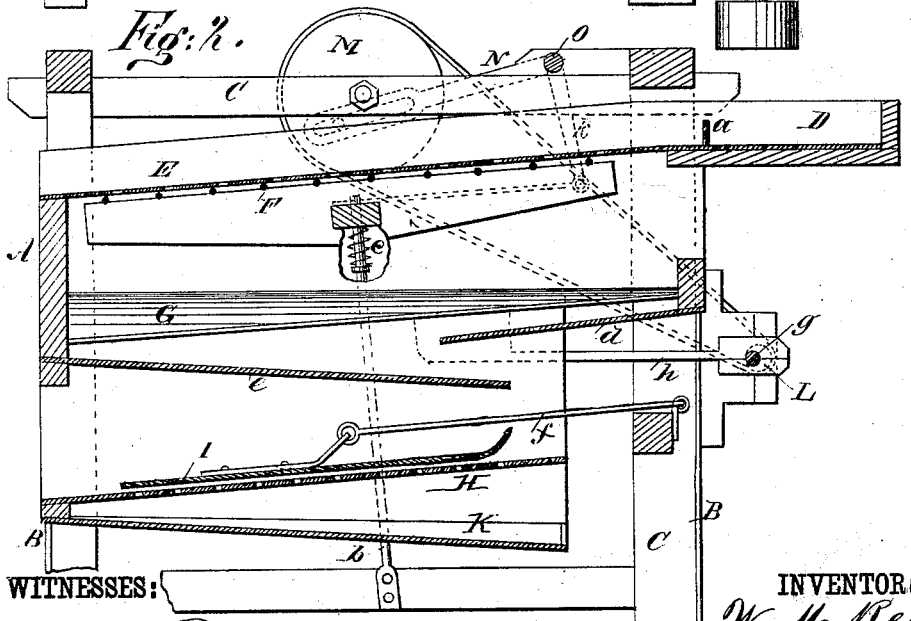


Fig: 2.



WITNESSES:

Chas. Nida

J. H. Scarborough.

INVENTORS

W. M. Redd.

E. M. Sanford

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM M. REDD AND ERASTUS M. SANFORD, OF DUNLEITH, ILLINOIS.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **203,648**, dated May 14, 1878; application filed June 25, 1877.

To all whom it may concern:

Be it known that we, WILLIAM M. REDD and ERASTUS M. SANFORD, of Dunleith, county of Jo Daviess, and State of Illinois, have invented a new and Improved Grain-Separator, of which the following is a specification:

Referring to the accompanying drawings, forming part of this specification, Figure 1 is a plan view, with parts broken away to show the internal construction; and Fig. 2, a central vertical section.

Similar letters of reference indicate corresp o g parts.

The invention will first be described, in connection with the drawings, and then pointed out in the claims.

In the drawings, A is a frame, supported by four springs, B, that are attached to the lower cross-pieces of the frame C. To the upper front portion of the frame A a trough, D, is attached, for receiving the grain and delivering it to the inclined perforated screen E.

The trough D is provided with a ledge, *a*, which is highest in the middle, and is tapered downward each way toward the end of the trough. This ledge insures an even distribution of the grain to the screen E.

Under the screen E a grating, F, is supported by the swing-bars *b*, which are rigidly secured to the frame C, and are each provided with a spring, *c*, that at its bottom rests on an annular lug of the bar and presses the grating upward into contact with the screen E. Below the screen E and grating F tapering pieces G are placed, and inclined toward the center of the frame. Below these tapering pieces inclined plates or chutes *d e* are placed. The plate *d* is parallel to the screen E, and is about half the length of the said screen.

The plate *e* is placed below the plane of the plate *d*, and inclines downward in the opposite direction from the opposite end of the frame A.

H is a screen placed in the frame A parallel to the screen E, and upon it a plate or cover, I, is placed. This cover is connected, by a rod, *f*, with a cross-bar of the frame C, and its upper end is curved upward to allow the grain to easily pass under it. A chute, K, is placed in the frame A under the screen H, and is inclined downward toward the front of the machine. A shaft, L, is journaled at the front of the frame, and is provided with two eccentrics, *g*, which are connected with the frame A by rods *h*.

A wheel, M, is journaled at the side of the frame, and is driven by a belt from the shaft L. A crank-pin, *i*, projects from the face of this wheel and carries a slotted lever, N, attached to the rocking shaft O, which shaft has fixed to it two similar arms, *k*, which are connected with a bar that supports the grating F.

The operation of our improved grain-separator is as follows: Motion being imparted to the shaft L in any convenient way, the frame A and the parts that are carried by it are rapidly reciprocated, while the grating F is moved back and forth slowly on the under surface of the screen E. Grain is supplied to the trough D and is spread by the ledge *a*, so that it flows evenly over the screen E. The coarser grains fall from the lower end of the screen; but the finer ones and small seed drop through the screen in their passage along its surface. The small grain and seeds are delivered by the inclined plates G and plate *d* to the plate *e*, from which they fall upon the upper end of the screen H and gradually work toward the lower end of the screen under the cover, which is prevented from vibrating with the screen by the rod *f*. The grain falls from the end of the screen, and the small seeds and dirt are carried to the front of the machine by the chute K.

The cover I prevents the grain on the screen H from passing through the perforations of the screen endwise, and the grating F, by constantly moving over the under surface of the screen E, prevents it from becoming clogged.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with screen H, of the cover I, suspended over said screen by a pivot-connection with rod *f*, to hold the grains flat on the screen, as and for the purpose specified.

2. The combination of the swing-bars *b* and springs *c* with the grating F, substantially as shown and described.

WILLIAM M. REDD.
ERASTUS M. SANFORD.

Witnesses:
C. S. BURT,
R. E. ODELL.