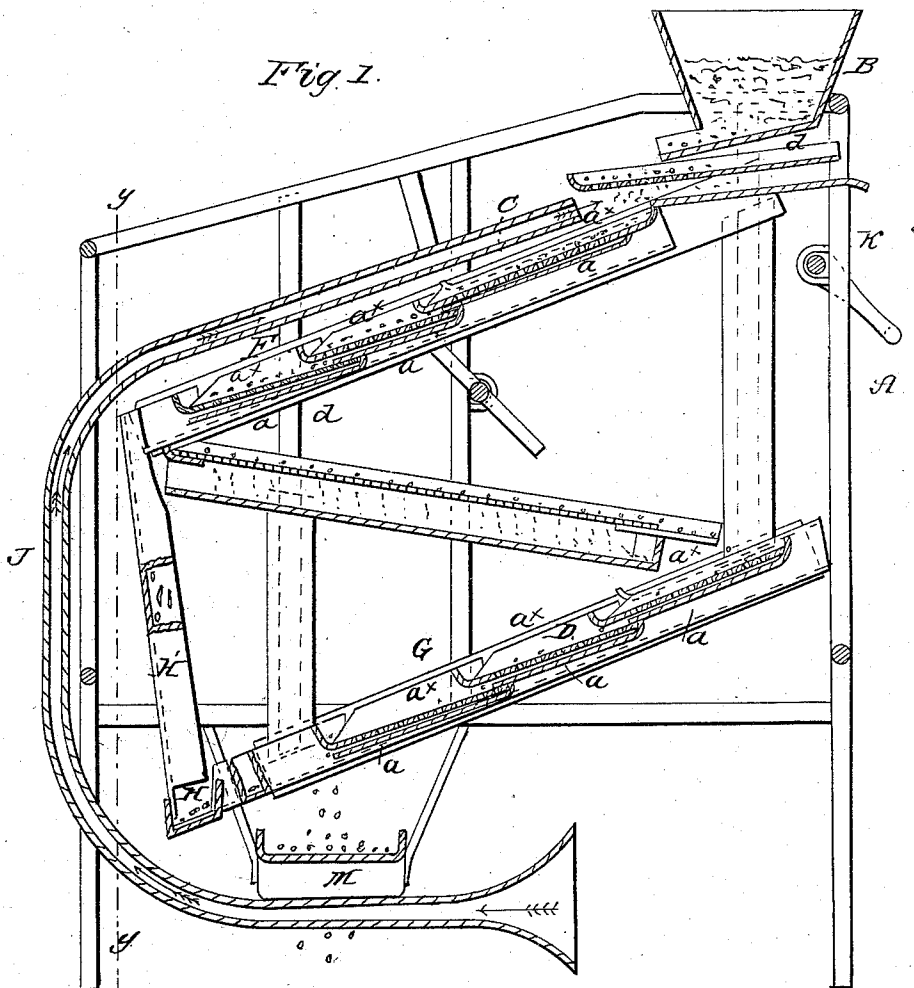


L. MERRILL.
Grain Winnower.

No. 31,989.

Patented April 9, 1861.



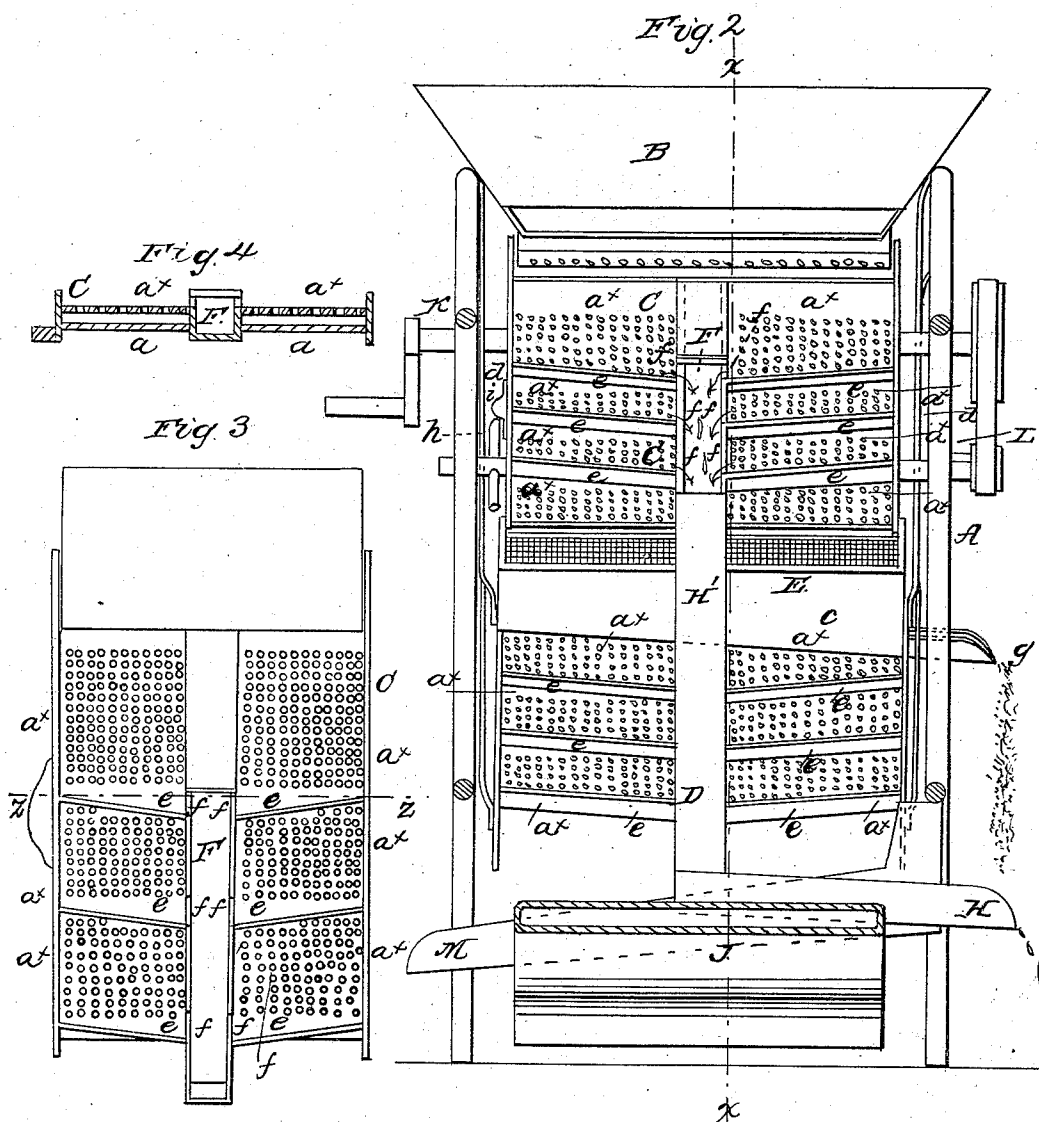
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UNITED STATES PATENT OFFICE.

LINUS MERRILL, OF JANESVILLE, WISCONSIN.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. 31,989, dated April 9, 1861.

To all whom it may concern:

Be it known that I, LINUS MERRILL, of Janesville, in the county of Rock and State of Wisconsin, have invented a new and Improved Grain-Separator; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *xx*, Fig. 2; Fig. 2, a transverse vertical section of the same, taken in the line *yy*, Fig. 1. Fig. 3, a detached plan or top view of the upper screen; Fig. 4, a transverse section of the same, taken in the line *zz*, Fig. 3.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a simple and efficient machine whereby foreign substances may be thoroughly separated from grain and different kinds of grain separated from each other, such as oats from wheat, &c.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a framing which may be constructed in any proper manner to support the working parts of the machine. On the upper part of the framing A there is placed a hopper B, and within the framing A there are placed three screens C D E, said screens being connected together in a zigzag manner, the two screens C D being inclined in the same direction and parallel with each other, the screen E being inclined in a reverse direction and connecting the lower end of screen C with the upper end of screen D, as shown clearly in Fig. 1.

Beneath the screens C D E there are placed, respectively, chutes *a a c*, and the three screens are suspended in the framing by vertical springs *d*. The screens C D are provided, respectively, with longitudinal central troughs F G, and the screens aforesaid are divided by oblique ledges or flanges *e* into a series of smaller screens *a**, which all communicate with the central troughs F G, as shown at *f* in Figs. 2 and 3, and a chute *a* is placed beneath each screen *a**, as shown clearly in Fig. 1, the chute *a* of the uppermost screen

*a** serving as a conductor to the screen *a**, immediately below it, and so on. The lower screen D is constructed precisely the same as the upper one C, the trough G of screen D leading into an inclined transverse trough H, which has its discharge end projecting from one side of the framing. The trough F of screen C leads into a spout H', which also communicates with trough H. The screen E has a chute *c* underneath it, the lower end of which is provided with a discharge-spout *g*, which projects from the side of the framing A.

J is a curved blast-spout which extends from below the lower screen D and up in front of the framing A and over the top of screen C to within a short distance of the hopper B.

K is a shaft which is placed in the upper part of the framing A, and from which a shaft L is driven, the latter having a wiper *h* on it, which acts against a projection *i* at the side of the upper screen C and gives a shake motion to the screens C D E.

The grain to be operated upon is placed in the hopper B and the shaft K rotated by any convenient power. The sound grain passes through the several screens *a** of the upper screen C, while oats and large impurities which cannot pass through the screens *a** are directed by the ledges or flanges *e* into the central trough F, and pass from thence into spout H, and are discharged from the machine through spout H. (See red arrows, Figs. 1 and 2.) The chutes *a* of the screens *a** conduct the grain to the several screens *a**, and the grain passes from the lower end of screen C on screen E, the good grain passing over screen E and onto the upper part of screen D, through the screens *a** of which it passes, and is discharged into an inclined transverse shaft M, all oats and other large impurities that might have passed through the screens *a** of the upper screen C being separated by the lower screen D, the meshes of which are a trifle smaller. A blast of air is forced through the spout J by the usual fan. This blast effectively separates all light impurities from the grain as the latter drops from the hopper B on the screen C, and the screen E separates the heavy small impurities which can pass through the upper screen C

and are too heavy to be removed by the blast from spout J.

I do not claim, separately, any of the within-described parts; but

I do claim as new and desire to secure by Letters Patent—

The screens C D, when subdivided into smaller screens α^* , provided with central

troughs F G and chutes α and used in connection with a screen E, to operate as and for the purpose set forth.

LINUS MERRILL.

Witnesses:

HIRAM POTTER,
E. L. SCOFIELD.