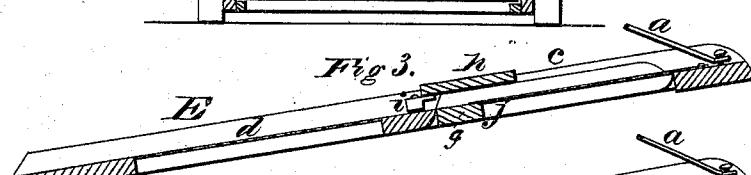
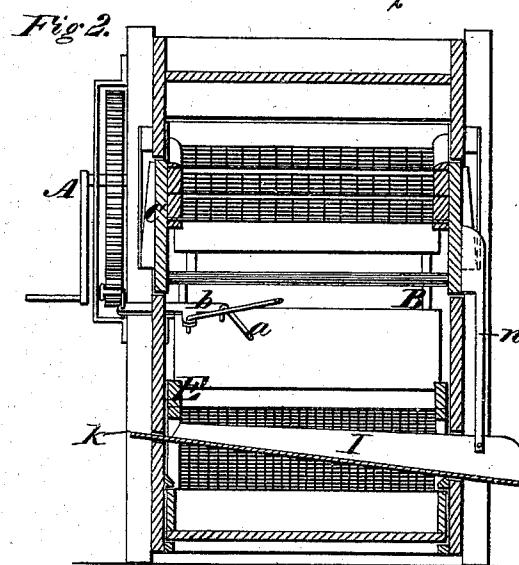
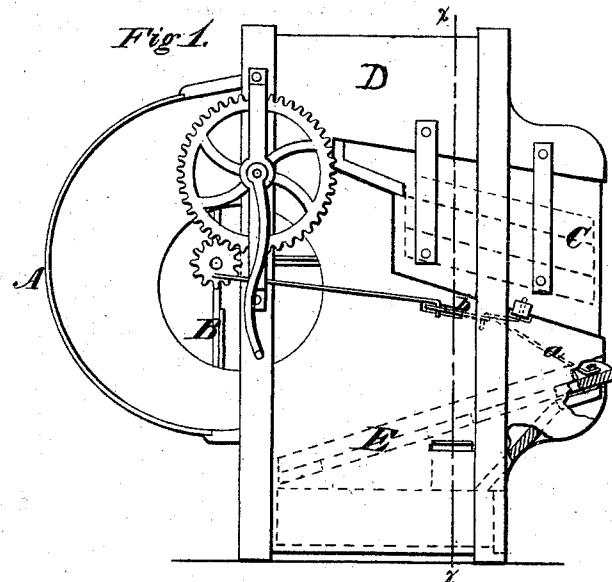


L. M. BOARDMAN.  
Fanning-Mills.

No. 142,197.

Patented August 26, 1873.



Witnesses.

Harry King  
A. H. Dodge.

L. M. Boardman  
By his atty  
Dodge & Son

# UNITED STATES PATENT OFFICE.

LORENZO M. BOARDMAN, OF OTTAWA, MINNESOTA.

## IMPROVEMENT IN FANNING-MILLS.

Specification forming part of Letters Patent No. 142,197, dated August 26, 1873; application filed March 12, 1873.

*To all whom it may concern:*

Be it known that I, LORENZO M. BOARDMAN, of Ottawa, in the county of Le Sueur and State of Minnesota, have invented certain Improvements in Fanning-Mills, of which the following is a specification:

The object of my invention is to effect the complete separation of the heavy perfect wheat from the lighter qualities, and from all other light matters, as oats, chess, &c.; and it consists in arranging below the screens of the main shoe or shaker an extra screen, made in two parts, and so arranged that it may be used as a continuous long screen or as two short ones; and, also, in a novel manner of arranging and operating a spout, into which the upper section of my screen discharges when it is used as a separate screen.

Figure 1 is a side elevation of a fanning-mill having my improvements embodied therein, a portion being broken away in order to afford a view of the interior. Fig. 2 is a transverse vertical section of the machine on the line *xx*. Fig. 3 is a longitudinal vertical section of my screen with its two parts arranged to operate in connection with each other; Fig. 4, a section of the same with its parts arranged to operate as two separate short screens.

In carrying out my invention, I take an ordinary fanning-mill, A, having a fan, B, at one end, a shoe or shaker, C, provided with a series of screens, in the other end, and a hopper, D, on top to receive the grain. In the lower part of the mill, below the shoe and its sieves, I mount a long screen, E, inclining from the rear end of the machine downward toward the fan. The screen is mounted on guides or ways, and connected by a rod, *a*, with the elbow-lever *b*, which communicates motion to the main shoe, so that, when the machine is set in motion, my screen receives a shaking or reciprocating movement endwise. The screen is divided transversely into two parts or sections, *c* and *d*, forming the upper and lower ends, respectively. The lower part or section *d* is secured rigidly in the screen-frame; but the upper part, *c*, is mounted in a light frame, *g*, which is hinged at its upper edge within the screen-frame, as shown in Figs. 3 and 4. This arrangement permits the section *c* to be raised up flush with section *d*, so as to form a con-

tinuation thereof, and discharge thereon, as shown in Fig. 3, or to be depressed at its lower edge, so as to discharge under the upper edge of section *d*, as shown in Fig. 4. In the one case the two sections together form one long screen, while in the other case they form two short separate screens. The frame of the upper hinged section *c* has a wide board, *h*, secured across its lower end above the face of the screen, so that the grain can pass under it. When the edge of the frame or section is depressed, the board *h* bears upon the upper edge of the section *d*, and serves both as a support for the hinged section and as a guard to prevent matter from passing over by accident onto the lower section *d*. In order to provide for locking the hinged section *c*, the lower section *d* is provided with a button, *i*, which may be locked under the board *h* to hold the hinged section up, or over the board to lock the section down, as shown in Figs. 3 and 4. Under the lower edge of the section *c*, I mount a transverse spout, *l*, the upper end of which is supported by an arm, *k*, sliding through the side of the frame, while the lower end is supported by a depending arm, *m*, rigidly attached to the shoe or shaker C, as shown in Fig. 2, so that the shoe or shaker communicates a longitudinal vibration to the spout, the end of which passes through and discharges outside of the body.

It will be observed that my screen E is inclined in the opposite direction from those in the shoe or shaker, or, in other words, that it is inclined downward toward the front end of the machine, while they are inclined downward toward the rear.

When the machine is in operation, the upper section *c* of the screen E is ordinarily lowered or depressed, as in Fig. 4. The heavy wheat falls through the upper ends of the screens in the shoe or shaker C, and upon the lower or cockle section *d* of the screen E, while the inferior wheat and other light matters pass down over the ends of the screens in the shoe, and fall upon the upper or chess section *c* of the screen E. Any light matters which may chance to fall through with the heavy wheat are carried by the blast from the fan backward upon the upper section *c* of the screen E, from whence they pass into the

spout I, which discharges them outside of the machine, thereby leaving that portion of the wheat at the end of the machine perfectly clean.

When operating on certain qualities of wheat, and on wheat containing certain impurities, it is not desirable to have the section c discharge into the spout I. In such case the lower edge of the section is raised and fastened, as before described, and as shown in Fig. 3, so that matters lodging thereon pass down over the lower section d, and are discharged at the front end of the machine.

Having thus described my invention, what I claim is—

1. The screen E, having its upper end or section hinged and arranged to drop down, when constructed and arranged to operate as shown and described.

2. In combination with the screen E, the transverse spout I, operated by the rigid depending arm m, attached to the shoe or shaker C, as shown and described.

LORENZO M. BOARDMAN.

Witnesses:

GEORGE D. SNOW,  
GEORGE W. MAHOOD.