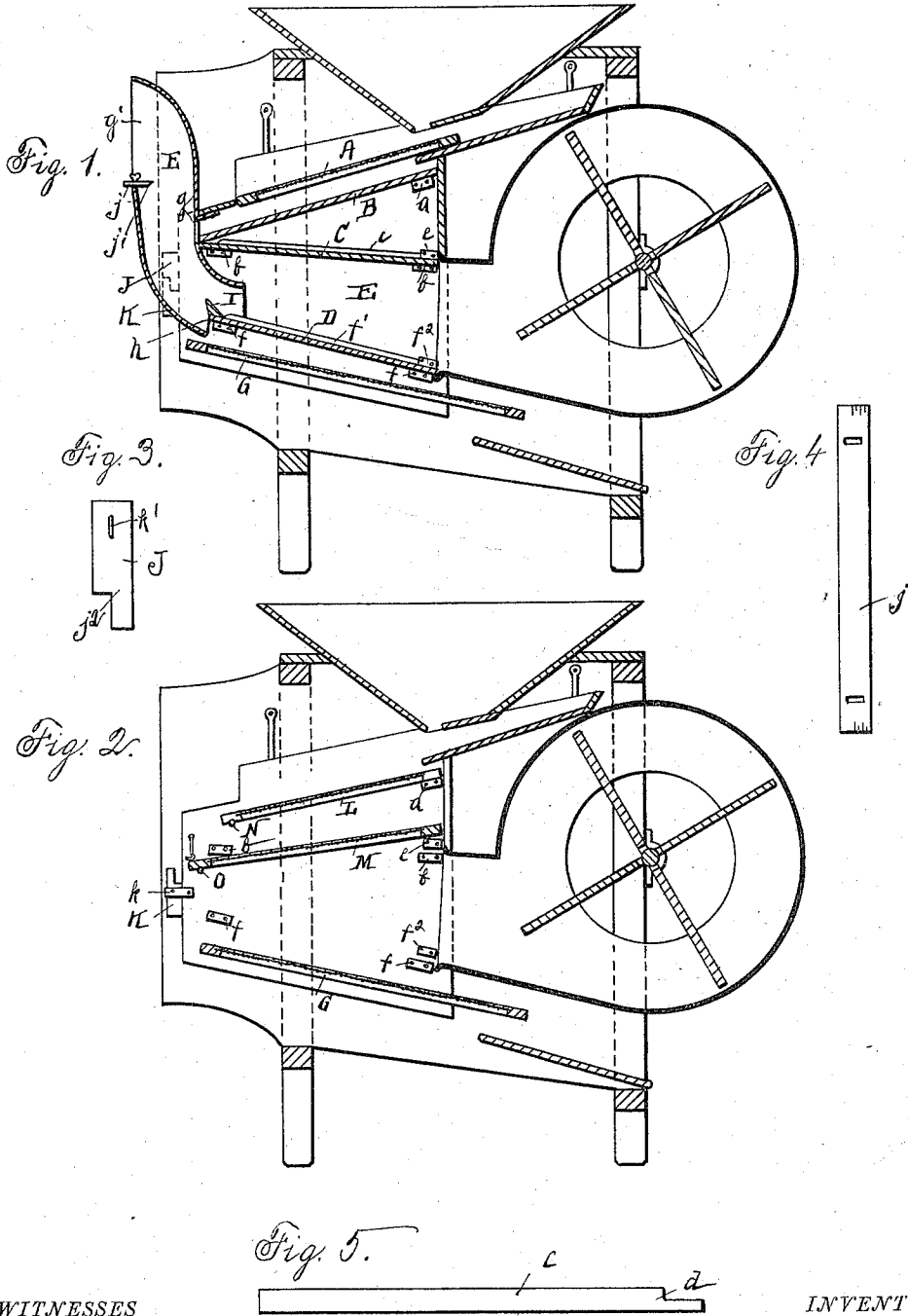


(No Model.)

J. S. CONSTANT.
FANNING MILL.

No. 579,258.

Patented Mar. 23, 1897.



WITNESSES

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UNITED STATES PATENT OFFICE.

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FANNING-MILL.

SPECIFICATION forming part of Letters Patent No. 579,258, dated March 23, 1897.

Application filed January 20, 1894. Renewed April 1, 1896. Serial No. 585,830. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. CONSTANT, a citizen of the United States, and a resident of New Burlington, in the county of Clinton and State of Ohio, have invented certain new and useful Improvements in Fanning-Mills; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a vertical section of the machine embodying my invention. Fig. 2 is a similar view in modified form. Fig. 3 is a detail view of one of the blocks J. Fig. 4 is a similar view of the adjustable grain-stop, and Fig. 5 is a similar view of one of the holding-strips.

This invention has relation to certain new and useful improvements in grain-cleaning machines; and it consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the accompanying claims.

The invention, while applicable to many different styles and forms of grain-cleaners, is more especially designed as an improvement upon the machine set forth in my Patent No. 358,543, dated March 1, 1887, and has for its object the provision of means whereby the screens, wind-boards, and other parts may be readily removed, replaced, or adjusted and the machine adapted to different uses.

A further object consists in the provision of an improved grading-flue having means for a more effectual employment of the blast and which may be readily removed and replaced to suit the different purposes of the mill.

Referring to the accompanying drawings, the letter A designates the upper screen, and B the grain-board thereunder, said screen and board being removable. The upper end of the board B is supported upon blocks *a*, one at each side and rigidly secured to the shoe-frame, while its lower end is supported upon the upper end of the upwardly-inclined upper flue-board C, which is also made removable, being supported at both end portions upon blocks *b*, which are rigidly secured to the

frame, one at each side. Said board C is prevented from slipping downwardly by means of longitudinal strips *c*, secured one to each lateral edge of the board and having at their rear end portions notches or shoulders *d*, which engage with blocks *e*, secured to the frame.

D is the lower flue-board, which is inclined upwardly, forming with the board C the air-flue E, which by this arrangement of the boards decreases in area from the blast-chamber E' to the discharge E², causing the blast to be compressed. This lower board D is removably supported upon blocks *f* in the same manner as the board C and is held against downward movement by strips *f'* and blocks *f*², similar to the strips *c* and blocks *e*.

F designates the grading-flue, which is of somewhat similar form to that shown in the patent above referred to, but is made to gradually increase in area from the point *g*, where the grain from the board B enters, to its discharge at *g'*. The blast enters this flue at the lower end thereof from the flue E, and owing to this peculiar form of the flue is allowed to gradually expand as it passes upwardly therethrough. The purpose of this arrangement is as follows: The air being compressed where it enters the said flue F, it will strike the grain or seed at the discharge *g* with great force, scattering it and destroying its compactness, allowing the heavy grain to fall at once down through the discharge *h* onto the lower screen G, while the lighter grades are lifted up into the expanded part of the flue, where there is more room for the blast to handle them, the heavier seeds or grains being more perfectly weighed or suspended and the separation more perfectly made, the lighter particles only being carried out at the discharge *g'*.

In order to effectually guard against any good grain or seeds from being blown out at this discharge, the lower edge of said discharge is provided with a horizontally-adjustable transverse guard-strip *j*, projecting inwardly into the flue. Owing to the slight curvature of the walls of the flue and the direction in which the blast takes therein it will be apparent that this guard will effectually prevent any good seed or grain from being carried over, as in order to do that the grain must

be lifted around and over the guard. The inner face of the said guard is beveled, as shown at *j*".

On the outer end of the lower flue-board D is a deflector-strip I, whose upper surface is beveled upwardly in such a manner as to throw the blast upwardly into the flue F, and thereby preventing it from striking directly the farther wall of the said flue.

The flue E is secured to the mill by means of blocks J J, secured one to each side portion thereof, said blocks at their lower outer portions having a cut-away portion *j*², which seats upon and over the similarly-shaped portions *a*, blocks K are secured to the screen-shoe by a strap *k*. On the blocks J J are staples *k*¹ *k*², which are engaged by hooks *k*³ on the shoe-frame, thus securing the flue in place in such a manner as to permit it to be readily and quickly removed and replaced. The flue also serves to hold the board B against downward movement.

In Fig. 1 the parts are shown in position to adapt the mill for use as an air-mill; but by means of the construction described they may be readily changed to adapt it for use as a chaffing-mill, as in Fig. 2. To accomplish this, the screen A, board B, and the flue-boards C and D are removed, as is also the grading-flue F, and screens L and M are substituted. The upper screen L is supported at its upper end upon the blocks *a* and at its lower end upon a transverse rod or wire N.

The inner end of the lower screen M is supported upon the blocks *e* and its outer end upon a transverse rod or wire O.

The improvements as above described may be readily built into many existing forms of mills, as well as in new mills, the arrangement of the blast and grading flue being particularly effective in producing a perfect separation,

while the removability and adjustability of the parts whereby the mill may be adapted for different uses is of great utility.

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

1. In a grain-cleaner, the removable upper screen A, the removable grain-board B, its supporting-blocks, the removable flue-boards C and D, their supporting-blocks, the longitudinal strips secured to the lateral portions of said boards C and D, and blocks on the mill engaged by the said strips to prevent the said boards from endwise movement, substantially as specified.

2. In a grain-cleaner, the lower flue-board D having a deflector at its outer end portion, the upwardly-carried and gradually-expanded grading-flue E, into which the blast is directed by said deflector, a grain-discharge at the lower portion of said flue, a grain-entrance opening above said deflector, and a transverse, adjustable guard-strip at the inner lower edge of the discharge at the upper end of said flue, substantially as specified.

3. In a grain-cleaner, a detachable grading-flue gradually expanded from its lower to its upper end, a lower flue-board having a deflector at its outer end portion arranged to direct the blast upwardly into said flue, and a guard-strip at the upper discharge of said chute arranged to check any grain carried upwardly by the upward blast, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN S. CONSTANT.

Witnesses:

J. W. MOORE,

T. C. HAYDOCK, Jr.