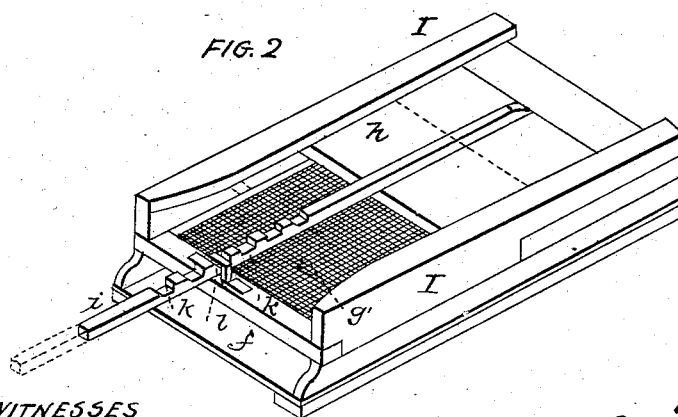
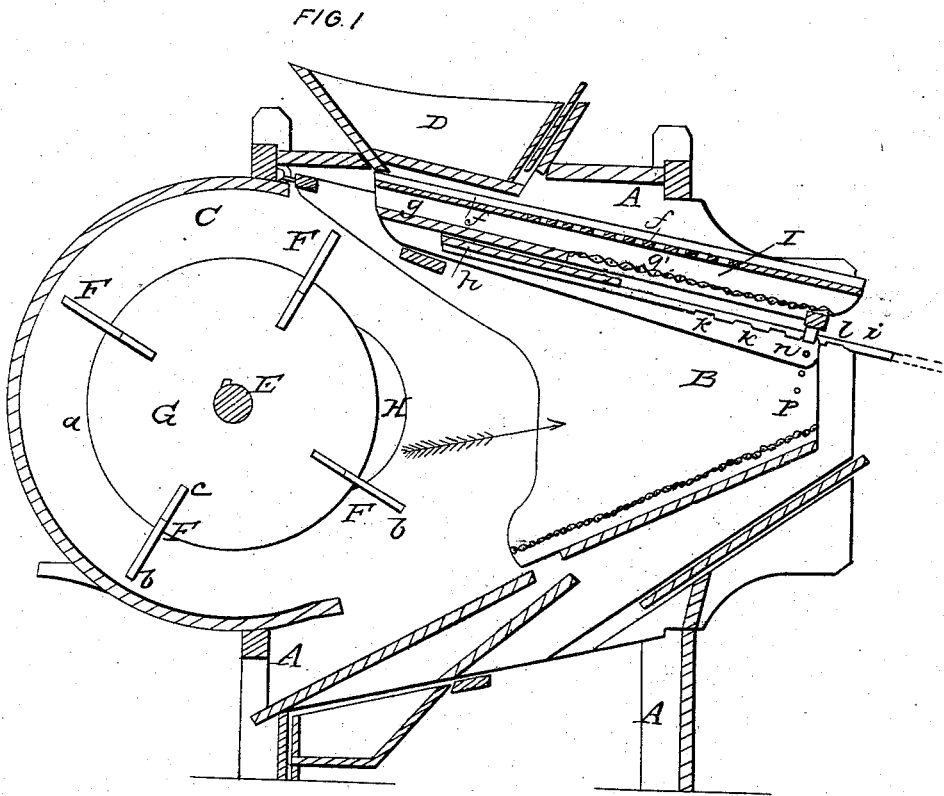


G. LEACH.  
Fanning Mill.

No. 47,839.

Patented May 23, 1865.



WITNESSES  
J. W. Kerr  
Jas. Bryant.

INVENTOR  
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# UNITED STATES PATENT OFFICE.

GEORGE LEACH, OF ELMIRA, NEW YORK.

## IMPROVEMENT IN FANNING-MILLS.

Specification forming part of Letters Patent No. 47,839, dated May 22, 1865.

*To all whom it may concern:*

Be it known that I, GEORGE LEACH, of Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Fanning-Mills; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a longitudinal vertical section of my improved machine; Fig 2, a perspective view of the fan and a portion of the fan-case; Fig. 3, a perspective view of the separating-screens inverted.

Like letters designate corresponding parts in all the figures.

My invention consists in an improved arrangement of the upper or separating screens and slide, whereby the fall of the grain on the discharge of the shoe is adjusted nearer to or farther from the tail of the machine, and the whole is combined in a portable frame.

In its general arrangement, the machine is similar to others of its class, being composed of the ordinary frame A, shoe B, fan-case C, and hopper D.

In ordinary machines the shaft of the fan is provided near each end with radial arms, to which the wings are secured and by which they are sustained, and the air to supply the fan enters at openings at each end of the fan-case. In the rapid revolutions of the fan these radial arms have a tendency to cut off the ingress of the air to the middle of the case, acting in this respect similarly to a solid disk at each end of the fan. The consequence is that the greater portion of the air confined at the ends of the fan is driven back through the shoe at the sides of the latter, leaving the center comparatively still, or rather creating counter-currents or "swirls," that have a tendency to draw a portion at least of the chaff and dust back with the grain, instead of driving it out, as should be the case. The result is a very imperfect separation of the impurities, and it is impossible to accomplish the purpose desired.

The separating device consists of a frame, I, Figs. 1 and 3, in the top of which is an ordinary perforated zinc screen, *f*, beneath this a floor, *g*, of suitable extent, and abutting with this a wire-mesh screen, *g'*, and still beneath this a sliding board, *h*, having a spring-handle,

*i*, extending back, and provided with notches, *k*, or equivalent, that engage with a guide-catch, *l*. These parts are all combined in a whole, so as to be put in or taken out of the machine at once.

The frame is secured in place in the shoe in any desirable manner, that represented in the drawings being by resting at the inner end on a ledge, *m*, and supported at the outer end by a pin, *n*, passing through the frame and the side of the shoe. The upper screen, *f*, carries off the coarse and rough impurities—such as straws, &c.—allowing the grain to pass through the perforations. The lower screen, *g'*, also carries off such coarse impurities as pass the upper one.

The object of the sliding board *h* is to adjust back to a greater or less degree, (as indicated by red lines, Figs. 1 and 3,) so as to throw the grain nearer to or farther from the tail or discharge end P of the machine, through which the blast passes. This is necessary to adapt the device to the cleaning of different kinds or conditions of grain. For instance, if the grain is very heavy, it is desirable that it should fall through the blast and strike the discharge-board Q of the shoe near the point P, but if the grain is light, it is necessary that it should fall farther in, so as not to be blown over.

I am aware that slide-boards in connection with screens have been before used, but they are usually placed at the outer end and slide inward, or are made stationary and are employed for a different purpose.

The combining of all the screens and the slide board in one device enables me to easily apply or detach the same.

I am aware that it is not new to place a sliding board below the upper sieve, (*g* in my drawings,) the said board being adjustable forward and backward so as to act upon the grain as required. When the board is pushed back it causes the grain to fall upon a lower portion of the cheat-screen, so as to cause a larger portion of the grain to find its way downward to the opening A. By drawing the board forward a proportionately smaller quantity (the quality of the grain being the same) finds its way down to the said opening.

As I before observed, I am aware that in other machines the said regulating-board has been used, but in none of them, so far as I am

aware, has the said board been operative for the whole effective length of the upper sieve,  $g'$ , but in all cases where it has been used it has only been operative for a certain portion of its outer length. In mine, the board  $h$  is effective for the whole length of the sieve  $g'$ , and its range is adapted to the varying requirements of the work to be performed.

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

The slide-board  $h$ , whose front edge is adjustable and operative for the purpose described at all points longitudinally of the effective length of the sieve  $g'$ , in combination with the notched adjusting-handle  $i$ .

I have withdrawn from this specification all the matter pertaining to the structure of the fan, and, having made it the subject of a separate application, filed April 29, 1865, I respectfully disclaim, so far as the present application is concerned, any claim in the special features involved in the construction of the fan.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

GEORGE LEACH.

Witnesses:

JAY HYATT,

E. W. REDMOND.