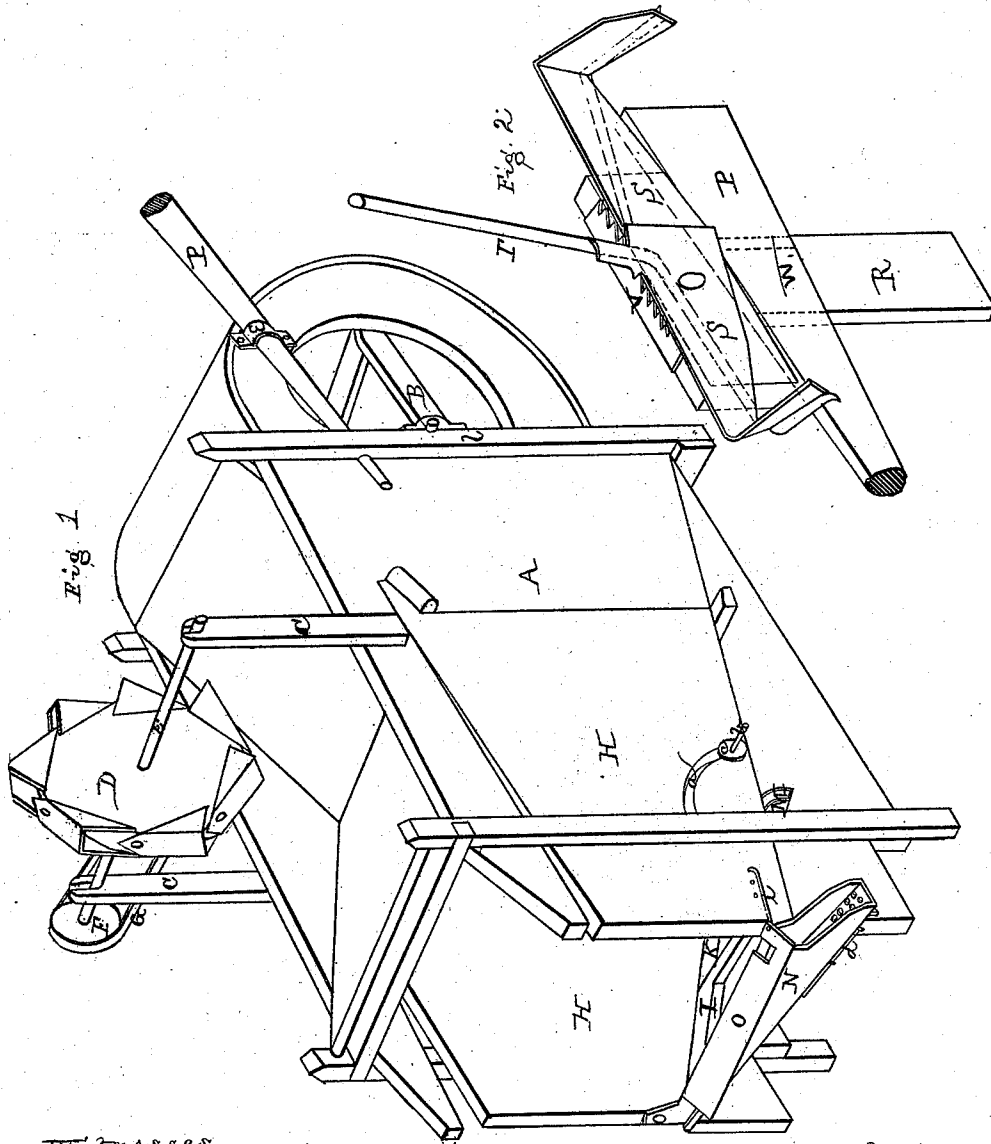


J. McPHAIL.

Grain Fan.

No. 100,434.

Patented Mar. 1, 1870.



Witnesses  
*F. Lehmann*  
*E. H. Topley*

Inventor  
*Jas. McPhail*  
*per Alexander Thomson*  
*att'y*

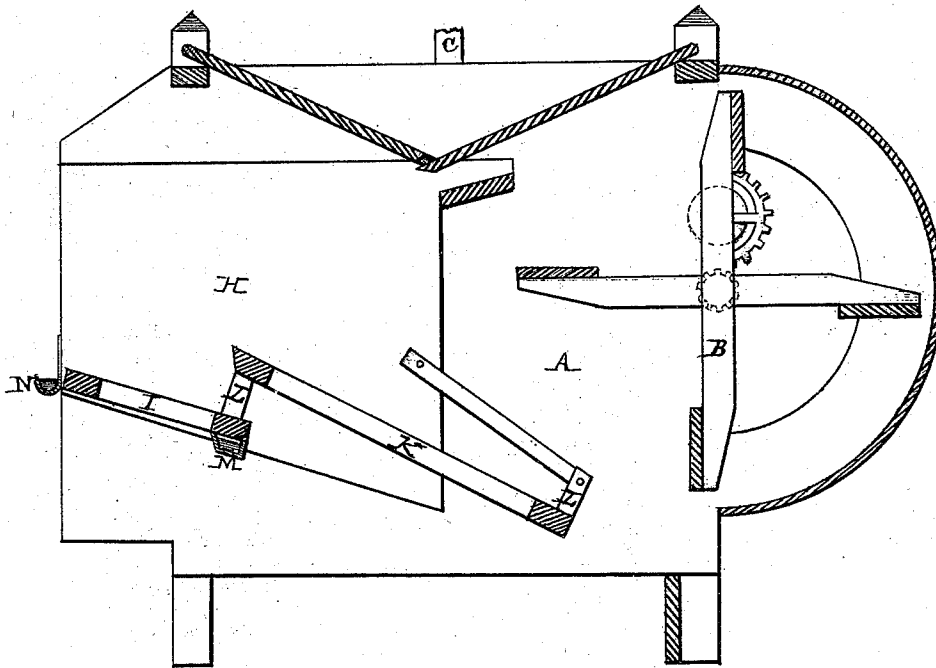
J. McPHAIL.

Grain Fan.

No. 100,434.

Patented Mar. 1, 1870.

Fig. 3.



Witnesses  
*J. Lehmann*  
*J. E. M. Crosby*

Inventor  
*Jas. McPhail*  
*per Alexander Thomson*  
 Atty

# United States Patent Office.

JAMES McPHAIL, OF CHARLES CITY, IOWA.

Letters Patent No. 100,434, dated March 1, 1870.

## IMPROVED GRAIN-FAN.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern :

Be it known that I, JAMES McPHAIL, of Charles City, in the county of Floyd, and in the State of Iowa, have invented certain new and useful Improvements in Grain-Fan; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the arrangement and construction of a grain-fan, in providing the screens with pivots so that they may be adjusted at any desired angle, as will hereafter be more fully set forth and explained.

Figure 1 is a perspective of my invention.

Figure 2 is a similar view of the bag-holder detached from the frame.

Figure 3 is a section view of my grain-fan.

Letter A represents the frame, which is constructed of any desired shape or size, and which has the fan B placed in its front end.

Extending upward from each side of the frame is a standard, C, which supports the revolving buckets D immediately above the hopper, so that as the grain falls from the spout it fills the buckets, and thus causes them to revolve, thereby generating the power which is to revolve the fan.

Attached to one end of the shaft E which passes through the overshot-wheel D, and which has its bearings upon the standard C, is a pulley, F, around which passes the belt G, and thus communicates the rotary motion of the buckets to the fan.

Secured to the shoe H there are two screens, one of which is stationary, while the second one is loose, and can be adjusted at pleasure.

The stationary screen I is smaller than the adjustable one K, which is pivoted to the shoe by a pivot, L, at each corner, so that it can be lowered or raised in such a manner as to decrease the number of screens usually required in grading the grain.

When the screen K is lowered, so as to be on a level with the smaller one, the whole quantity of grain will flow out at the front end under the fan.

When raised only partly, then but a portion flows to the front, while that on the stationary screen flows into the trough M, placed just under its lower end, and passes out the side, and when raised to its full height, the larger portion flows to the front, and only a small portion into the trough.

In one or each side of the shoe there is a circular slot, a, cut, through which a small screw-rod, b, projects from the side of the screen K, and is provided with a nut, c, so that the screen can be adjusted and held at any desired point.

Secured to the rear end of the shoe is a trough, N,

which is intended to catch all the grain which may be driven over the end of the screen.

The mouth of this trough is lower than the opposite end, and has a number of perforations made through it, and is provided on its under side with a movable slide, d, so that the openings may be partly or entirely closed.

All the larger and coarser dirt, together with the straw, will flow over past these openings, while the grain will drop through them into a receptacle prepared for it.

If desired, there may be one or more additional spouts placed under the one N, so as to still farther sift the grain.

Hinged to the top of the trough there is an adjustable cover, O, which may be secured at any desired point by means of the rod i, so as to prevent the chaff from being driven into the trough, thus making the grain still easier to clean.

Passing through a loop, e, attached to the side of the frame, at the front end, and through a hole in the post l, is a wooden bar or rod, P, to which the bag-holder is attached.

In the rear side of the bar there is a dovetail groove cut, so that the upright standard R, to which the two wings of the bag-holder are fastened, can be raised or lowered to any desired height, or can be entirely removed.

To the top of the standard R there are secured two wings, S, which form the holder, one of them being stationary, while the other is loosely pivoted, and has a lever, T, attached to it, so that it can be moved back and forth in order to bring the ends of the wings nearer or farther apart, so as to accommodate the mouths of different-sized bags. These wings may be constructed of sheet-iron, and have metal braces passed around their sides, so as to strengthen them, upon which sharp points are formed, so that the bags can be more securely held.

Upon the top of the standard R there is placed the serrated plate V, which catches the lever, and holds the wings at any desired point.

If it is desired, the whole bottom of the trough N may be perforated from end to end, so as to form a regular sieve.

Having thus described my invention,

What I claim; and desire to secure by Letters Patent, is—

1. The perforated trough N, attached to the rear end of the shoe, and provided with the slide d, substantially in the manner and for the purpose set forth.

2. The adjustable cover O, provided with the rod i, for securing it at any desired point, in combination with the trough N, substantially as specified.

3. The adjustable screen K, provided with the piv-

ots L, so that the flow of the grain may be changed from the front end to the side, substantially as specified.

4. In combination with the screen K, provided with pivots L, the screen I and trough M, substantially as set forth.

5. In combination with the screen K and pivots L, the circular slot *a*, screw-rod *b*, and nut or thumb-screw *c*, when so arranged as to support the screen at any desired point, substantially as described.

6. The standards *c*, shaft E, revolving buckets D, and pulley F, when arranged to operate substantially in the manner and for the purpose specified.

In testimony that I claim the foregoing, I have hereunto set my hand this 8th day of November, 1869.

JAMES MCPHAIL.

Witnesses:

GEO. F. BOULTON,  
A. H. MCKALLOR,