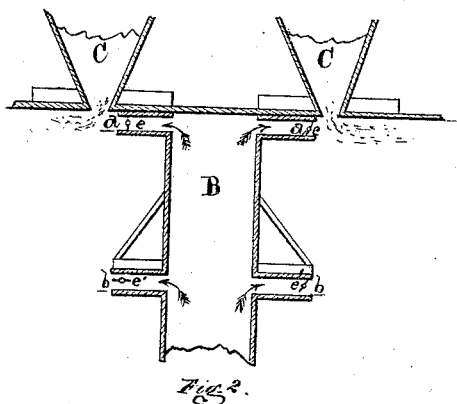
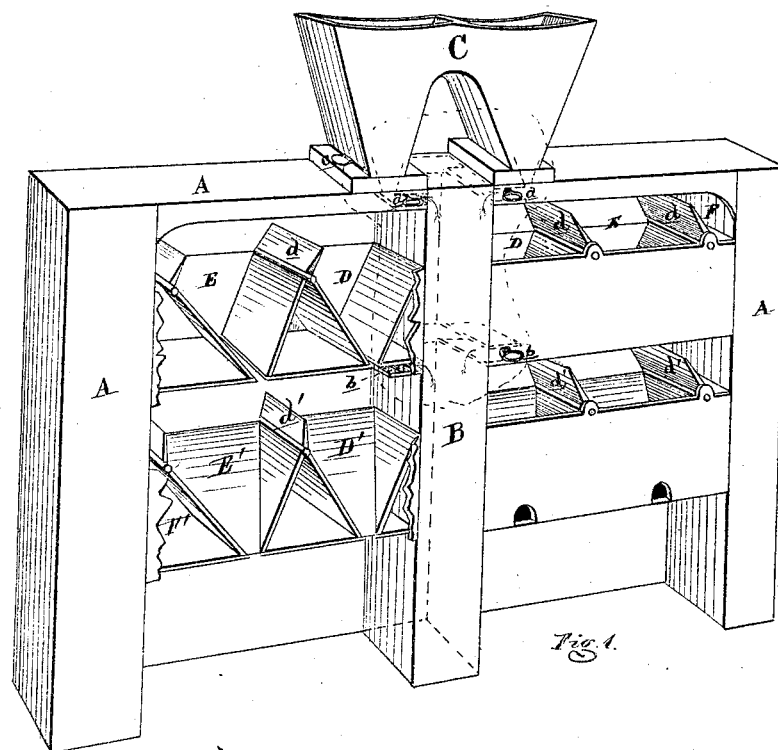


JOSEPH MILLER.
 Improvement in Grain-Separators.
 No. 114,023. Patented April 25, 1871.



ATTEST
 No. Stewart
 Frederick Sharp

INVENTOR
 J. Miller
 per Atty
 Thos. S. Hughes

United States Patent Office.

JOSEPH MILLER, OF DETROIT, MICHIGAN.

Letters Patent No. 114,023, dated April 25, 1871.

IMPROVEMENT IN GRAIN-SEPARATORS.

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

To whom it may concern :

Be it known that I, JOSEPH MILLER, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in a Grain-Separator; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a perspective view of my separator, with a portion of the front broken away to show the internal arrangement, and

Figure 2 is a vertical section of the hoppers and a portion of the blast-tube.

Like letters indicate like parts in each figure.

The nature of this invention relates to the construction of a device for separating chaff and other impurities from grain falling through it by means of a blast of air; and consists in the peculiar arrangement of a series of chutes through which the grain falls in thin sheets, and proper valves to govern the amount of blast delivered to the sheets of falling grain, whereby the chaff and impurities are eliminated therefrom and the light is separated from the heavy grain, as more fully hereinafter set forth.

In the drawing—

A represents a suitable frame, in the center of which a blast-tube, B, rises to the top, and up which is delivered a blast of air from a fan, the blast entering at the bottom of the tube and issuing above at the tuyeres *a b*.

C are hoppers at the top of the frame, which are provided with valves *c* to allow the grain to escape from them in thin streams in front of each of the tuyeres *a* into the hoppers D below, one hopper being placed at each side of the blast-tube.

At the side of each of the hoppers D are similar ones, E, and still beyond the last others, F.

At the top of the partitions, between the hoppers D and E and E and F, are pivoted adjustable wings *d*.

These hoppers are on the same horizontal plane, and just below the hoppers D the tuyeres *b* discharge the second blasts.

Below the upper series of hoppers are similar ones, D', E', and F', into which they discharge.

This last series is also provided with corresponding wings *d*.

e are valves in the tuyeres *a* to regulate the force of the blast, and *e'* are similar ones in the tuyeres *b* to govern the blast issuing therefrom.

The operation of the separator may be explained as follows:

Grain flowing in thin streams from the hoppers C is met by the blasts from the tuyeres *a*, which blow toward the ends of the frame the chaff and lighter grains, the latter falling into the hoppers E, the heavy grains dropping into the hoppers D, while the chaff and other light impurities are blown to the ends of the frame, where they are caught in the hoppers F, whence they fall to the floor or are conveyed away to a convenient receptacle. From the upper hoppers the grain falls into the lower ones, being winnowed a second time by the blasts from the tuyeres *b*. From the lower hoppers D' and E' the clean grain is drawn off as graded.

The wings *d d'* serve to regulate the flow of the light grain and chaff, so that the heavy grains will be retained and the light grains prevented from passing off with the chaff.

What I claim as my invention, and desire to secure by Letters Patent, is—

The construction and arrangement of the frame A, hoppers C, blast-tube B, tuyeres *a b*, valves *e e'*, hoppers D E F and D', E', and F', and the wings *d d'*, as and for the purpose set forth.

JOSEPH MILLER.

Witnesses:

FREDERICK EBERTS,
MYRON H. CHURCH.