E. T. ARCHIBALD.

MIDDLINGS-SEPARATOR.

No. 182,342. Patented Sept. 19, 1876.

Fig. 2

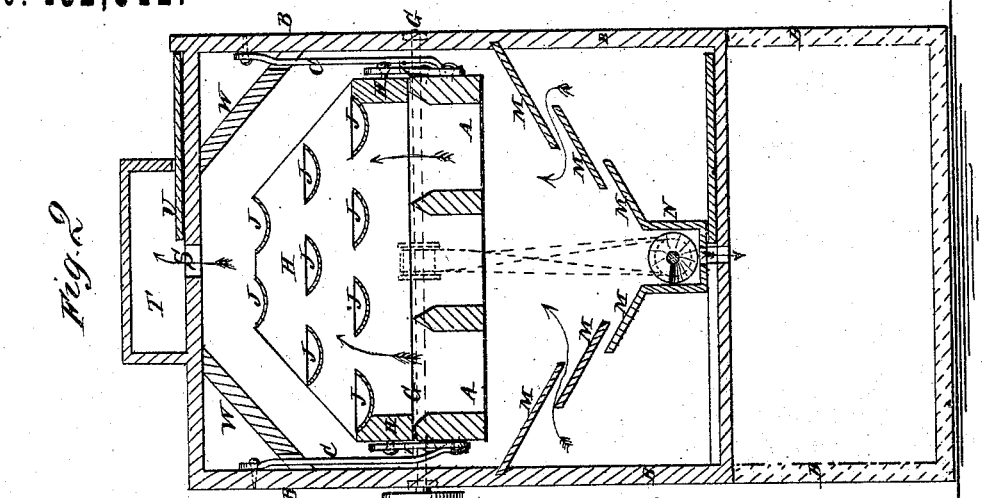
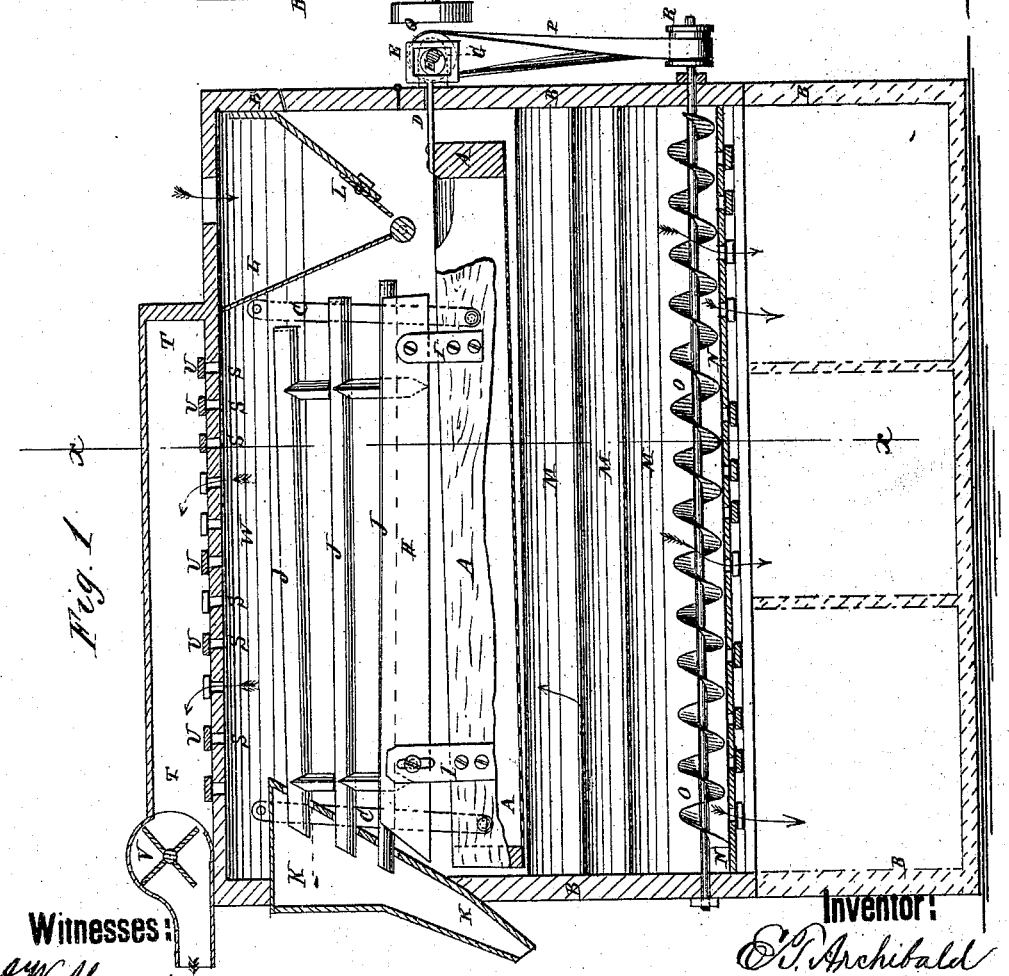


Fig. 1



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD T. ARCHIBALD, OF DUNDAS, MINNESOTA.

IMPROVEMENT IN MIDDLINGS-SEPARATORS.

Specification forming part of Letters Patent No. **182,342**, dated September 19, 1876; application filed July 5, 1873.

To all whom it may concern:

Be it known that I, EDWARD T. ARCHIBALD, of Dundas, in the county of Rice and State of Minnesota, have invented a new and useful Improvement in Flour and Middlings Bolt, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved device. Fig. 2 is a vertical cross-section of the same, taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to improve the construction of flour-bolts, so as to remove the bran, dust, and particles of other foreign matters that rise from the bolt, and thus prevent them from falling back upon the bolt to clog it, and thus impede its proper operation.

The invention consists in the troughs arranged in one or more series above the reciprocating bolt; in the inclined gather-boards arranged above the troughs and on each side of holes in the dome of bolt, and that lead into the fan-chamber to guide the air and dust.

A represents the bolt, which is placed and suspended in the bolt-box B by means of bars C, two or more upon each side, the lower ends of which are pivoted to the side bars of the bolt-frame A, and their upper ends are pivoted to the sides of the box B. To one end of the bolt A is attached a rod, D, which passes out through the end of the box B, and upon its end is formed, or to it is attached, a yoke, E, in which works an eccentric-wheel, F, attached to the shaft G, which is driven by any convenient power. H is a frame, which is connected with and supported from the bolt A by bars or plates I, the lower ends of which are secured to said bolt by screws or bolts. The upper ends of the rear straps I, or of both the rear and forward straps, have short slots formed in them to receive the fastening screws or bolts, so that the inclination or pitch of the frame H may be adjusted as required. With the frame H are connected one or more series of spouts or troughs J. When more than one series are used, the spouts of each upper series are placed directly over the spaces between the spouts of the next lower series, as shown in Fig. 2.

By this construction, the dust and other light impurities that rise from the bolt are received by the spouts J, and discharged into the hopper K, by which they are conducted out of the box B.

L is the hopper, through which the flour is introduced into the bolt A. As the different grades of flour escape from the bolt A they fall upon and slide down the inclined shelves M into the spout N, through the various openings of which the flour is pushed out by the swiveled screw O, which is driven from the shaft G by the belt P and pulleys Q R. Air enters the box A with the flour through the hopper L, and also through the spaces between the inclined shelves M, and escapes through openings S in the top of the box A into the spout T, which openings are closed with slides U, so that any desired number of them may be opened at a time.

In the outer end of the spout T is placed a fan-blower, V, by which the air is exhausted through the box B, so as to carry the light impurities with it. In the upper side corners of the box A are placed inclined guide or gather boards W, by which the air, and with it the dust and other light impurities, are guided toward the openings S as they are acted upon by the exhaust-fan V.

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

1. The troughs J, arranged in one or more series above a reciprocating bolt, A, substantially as herein shown and described.

2. The combination of the adjustable frame H, the troughs J, one or more series, the inclined gather-boards W, the openings S, slides U, spout T, and exhaust-fan V, with each other and with the reciprocating bolt A and box B, substantially as herein shown and described.

EDWARD T. ARCHIBALD.

Witnesses:

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