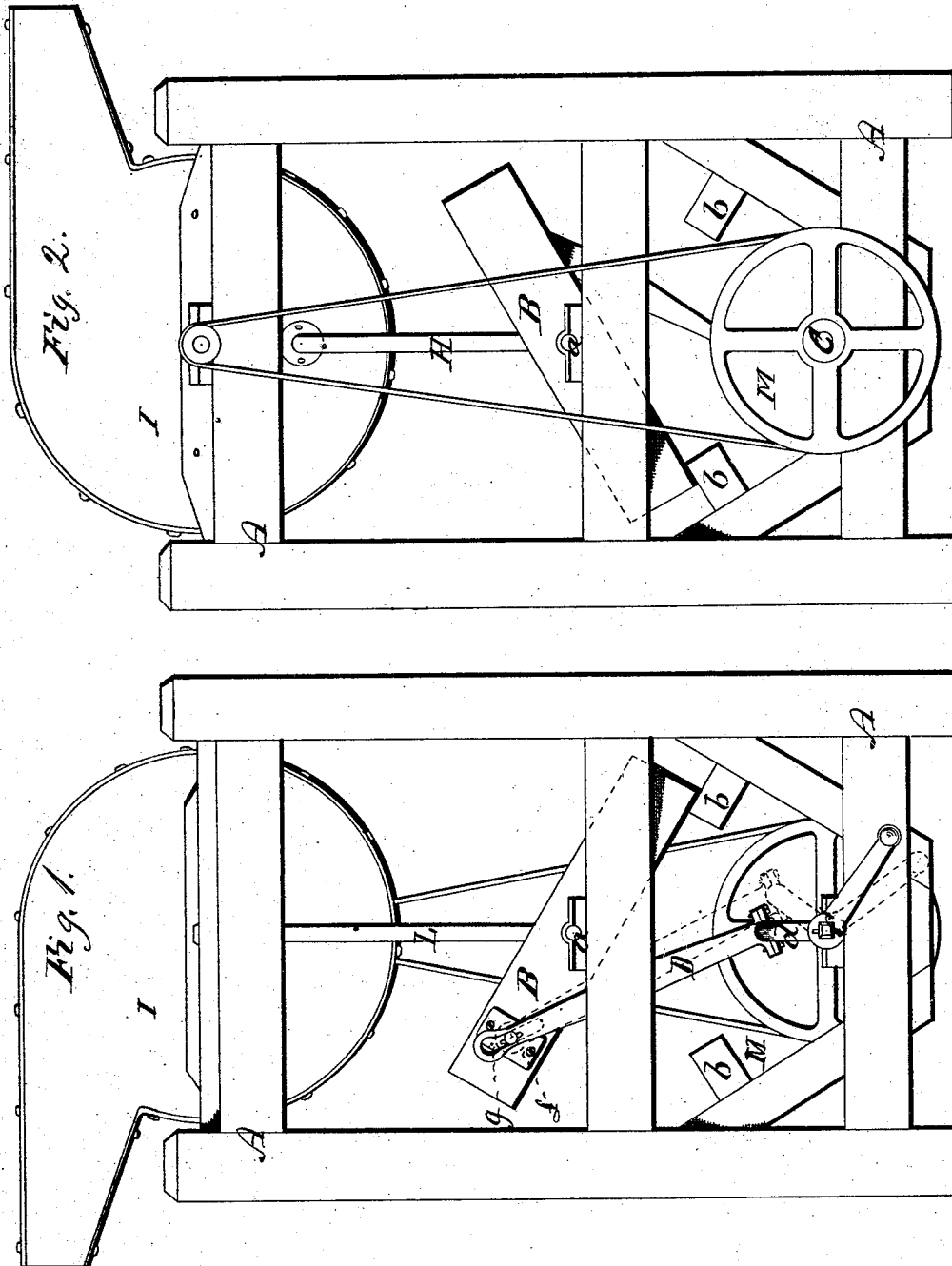


J. RIGBY.
Middlings-Purifier.

No. 160,351.

Patented March 2, 1875.



WITNESSES
C. McCallahan
Wm. D. Chaffin

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INVENTOR
James Rigby
J. D. Brown his Attorney

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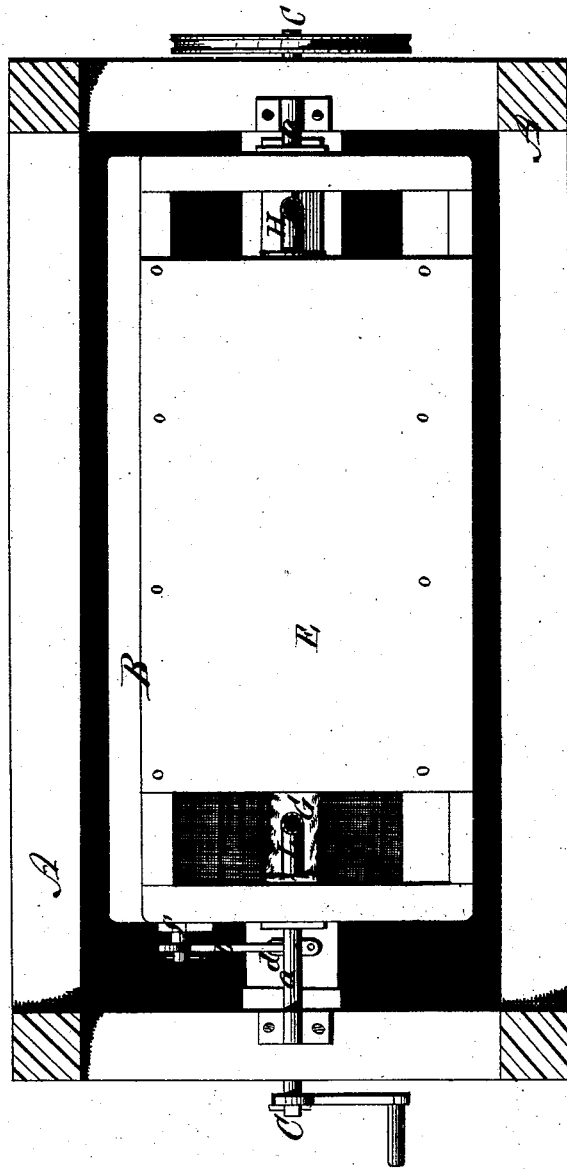


Fig. 3.

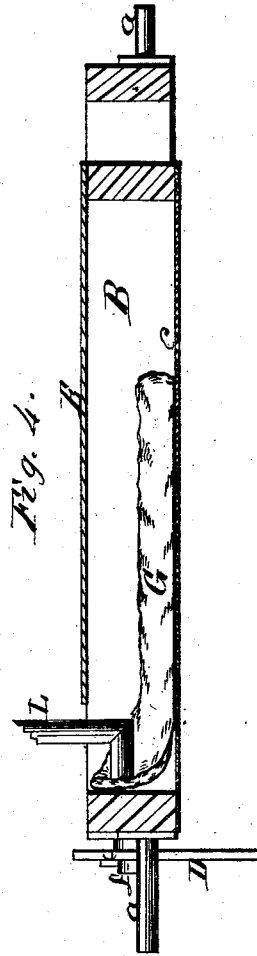


Fig. 4.

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UNITED STATES PATENT OFFICE.

JAMES RIGBY, OF SPRINGFIELD, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT
TO V. A. FARR, OF SAME PLACE.

IMPROVEMENT IN MIDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. **160,351**, dated March 2, 1875; application filed
January 9, 1875.

To all whom it may concern:

Be it known that I, JAMES RIGBY, of Springfield, in the county of Clark and State of Ohio, have invented certain Improvements in Middlings-Purifiers; 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 view in elevation of one end of the machine; Fig. 2, a similar view of the other end of the machine; Fig. 3, a horizontal section of the machine in a plane indicated by the line *x x*, Fig. 1; Fig. 4, a longitudinal vertical section of the oscillating sash thereof detached.

Like letters designate corresponding parts in all of the figures.

My invention consists in several features of improvement in and applied to axially oscillating screen or bolt sashes for middlings-purifiers, the uses and advantages of which improvements will be herein specified in succession.

In the accompanying drawings, A represents a suitable frame, in which is mounted a screen or bolt sash, B, consisting of a shallow frame, and bolt-cloth attached to and covering the under side thereof, the frame being only sufficient in height to contain and properly act on the materials received therein, whereby the sash is rendered light, and capable of any desired extent of axial oscillating movement upon a shaft or axis, *a*, the oscillating or see-saw motion being from an inclination between forty-five and eighty degrees from a horizontal position in one direction to an equal inclination in the other direction, and the limit of each movement being determined by suitable stops *b b*, as shown in the drawings, or by equivalent means. By this movement the material introduced into the sash is caused to slide over the bolt or screen *c* at the bottom of the sash alternately from side to side, and to come to a sudden or abrupt stop, so that the momentum thereof is suddenly checked, thereby not only freeing the flour from the middlings very effectually and quickly, but clearing the bolt at each oscillation, so that it is kept clear and without obstruction.

To communicate the oscillating motion to this sash, I employ a crank, *d*, on the driving-shaft C, under the sash, and connect the crank with the end of the sash near one side thereof, as at *f*, Figs. 1 and 3, by a connecting-rod, D. One feature of my improvement consists in a longitudinal slot, *g*, in the end of the connecting-rod D, to work over the sash-pivot *f*, as shown in Fig. 1. The effect of this slot, or equivalent connection between the connecting-rod and sash, is to allow the sash to remain motionless for a short time at the close of each axial oscillation, while the driving-crank *d* continues to turn and to move the connecting-rod, thus permitting sufficient time to intervene for the sash vibration to act on the material before it is moved in the next oscillation. I employ a cover, E, Figs. 3 and 4, upon the top of the sash, covering all or nearly all of the inner space thereof, so that the material being operated on in the sash may be retained therein without waste or escape, however near to a vertical position the sash may be turned in each oscillation. By this means I am enabled to give full effect to the axial oscillation in carrying it to the fullest extent desirable. Another improvement consists in what I have termed a "clearer," G, located in the sash, composed of a suitable flexible soft material, such as a long bag or tube of cloth filled with some stuffing to give it sufficient light weight to slide from side to side of the sash, over the bolt or screen, and thus keep the cloth clean and free, and to help the passage of the flour through the same. It is preferably attached loosely at one end to the sash, as shown, or even at both ends, to keep it in position, but so as to allow it a free sliding movement upon the cloth from side to side of the sash. In connection with the covered sash B, I employ, as another improvement, an exhaust air pipe or tube, H, leading from the discharge end of the sash, and, in combination therewith, an exhaust fan or blower, I, situated over the sash or in any other suitable position, all substantially as represented. This exhaust or suction, acting in connection with the covered oscillating sash, works in the most perfect manner, drawing out only the brown fuzz or light fibrous matter which floats in the

sash above the material operated upon, and not drawing out the flour adhering to the middlings, which is all passed down through the sash-cloth. The pipe or tube H is inserted into the rear end of the sash at a point in line with the axis of its motion, and therefore does not interfere with its axial oscillation; and, in addition to the exhaust pipe and fan, as a further improvement, I admit the air for the draft and the material to be treated through another pipe, L, at the head of the sash, which may be also inserted concentric with the axial motion of the sash, and allow the cover of the sash to entirely close; or the sash may have a small opening at the head, as indicated in Fig. 4. With this shallow closely-covered sash, and a tube or orifice at the head thereof to freely admit the air above the material therein, and a tube or passage at the tail end, through which the air is drawn from the sash, a light draft of air is caused to flow continually and closely over the whole surface of the middlings in the sash, from the head to the discharge end thereof, thereby acting with the greatest efficiency to remove all the fuzz and fibrous material as fast as disengaged from the middlings, and this with a very small amount of air and slight expenditure of power to produce the draft. The offal finally passes off through a suitable outlet at the tail end of the sash. The flour separated by the sash is collected in a receptacle, M, beneath.

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

1. In a middlings-purifier, the combination with a covered bolt-sash having an axially-oscillating motion to throw its contents from side to side, of an air-admitting tube or inlet at the head, and an air-exhausting tube or passage at the tail end of the sash, whereby a current of air is drawn over the whole surface of the material therein from the head to the discharge end thereof, substantially as and for the purpose herein specified.

2. In a middlings-purifier, the combination, with an axially-oscillating sash, B, and driving-crank *d*, of a connecting-rod, D, provided with a longitudinal slot playing upon the pivot, which connects it with the sash at the close of each oscillation, substantially as and for the purpose herein specified.

3. In a middlings-purifier, a clearer, G, constructed and arranged as described, in combination with an axially-oscillating bolt-sash, B, substantially as and for the purpose herein specified.

4. In a middlings-purifier, the combination of an axially-oscillating covered bolt-sash, B, a sliding clearer, G, an exhaust-pipe, H, exhaust-fan I, and air admitting and feeding tube L, substantially as and for the purpose herein specified.

JAMES RIGBY.

Witnesses:

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F. LANG.