

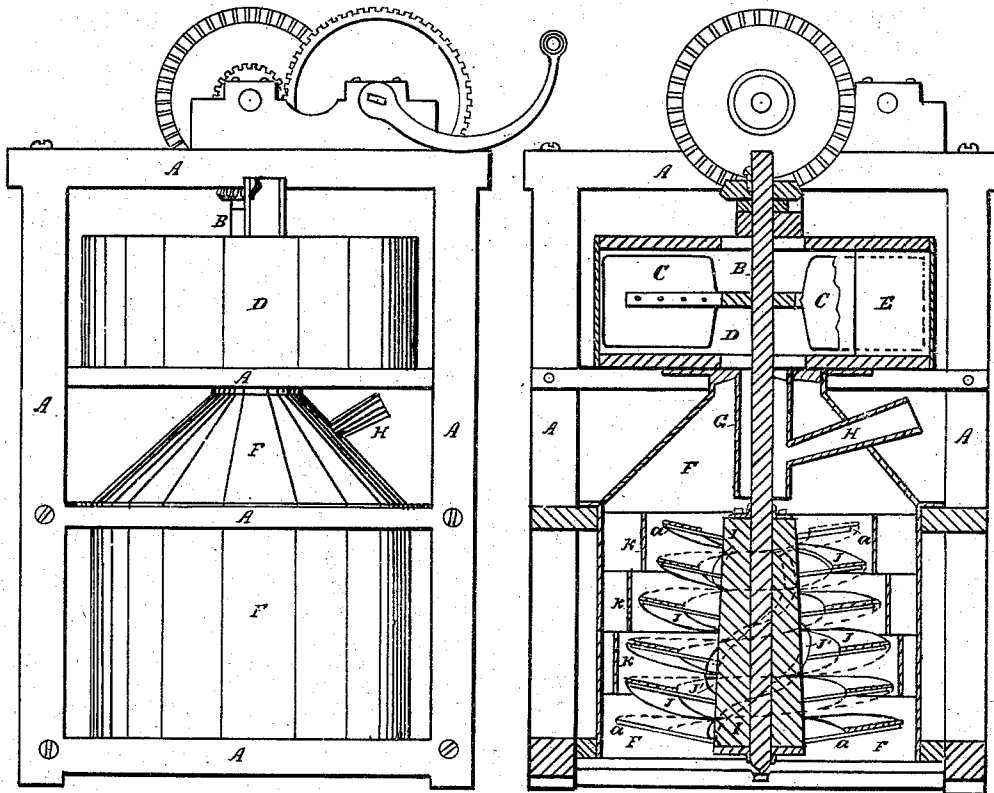
J. H. DEDRICK.
Middlings-Purifiers.

No. 152,730.

Patented July 7, 1874.

Fig. 1

Fig. 2



WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN H. DEDRICK, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF HIS RIGHT TO MEDBERY, STEVENS & CO., OF SAME PLACE.

IMPROVEMENT IN MIDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. 152,730, dated July 7, 1874; application filed May 9, 1874.

To all whom it may concern:

Be it known that I, JOHN H. DEDRICK, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Middlings-Purifiers, of which improvements the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part hereof, and in which—

Figure 1 represents a side elevation of a middlings-purifier embodying my invention, and Fig. 2 a vertical central section of the same.

Like letters of reference indicate like parts.

My object is to improve the construction and operation of that class of devices employed to purify middlings, and I aim to make a cheap and effective apparatus for that purpose. To this end my invention consists in certain novel features, substantially as herein-after described and set forth, relating to the construction of devices of this class.

In the drawing, A represents the frame of the apparatus. B is a vertical rotary shaft resting in bearings in the frame, and rotated by means of suitable driving mechanism. C is an exhaust-fan, carried by the shaft B. D is the exhaust-chamber, which is provided with a mouth or eduction in the usual manner, as represented at E. F is a bottomless chamber arranged below the chamber D. The walls of the chamber F are supported by the frame. G is a vertical tubular piece entering the chambers D and F. H is a feed-pipe entering the tube G. I is a core or hub attached to the shaft. *a a* are small arms extending radially from the part I. J is a spiral wing supported on the arms *a a*, and winding about the part I. A space exists between the inner edge of the wing J and the part I, as shown. J' is also a spiral wing attached directly to the part I, and having a much more steep inclination than the spiral J. K K are rings or annular walls arranged one above the other around the inner face of the vertical wall of the chamber F. A space exists between the

wall of the chamber F and the parts K K, the space between the upper rings and the said wall being the greatest, as shown. The parts K K are not essential, but I deem it best to employ them in the manner shown and described, for the purpose hereinafter mentioned.

The middlings are fed into the pipe H, from which they pass into the tube G, and then fall upon the spirals J and J'. The action of the exhaust-fan produces a strong current of air upward through the chamber F and through the tube G. The middlings, when they fall upon the spirals, are scattered and thoroughly separated, and all the lighter particles, such as fuzz, &c., are carried out through the eduction of the exhaust-chamber by reason of the currents produced by the movement of the parts. The movement of the spirals (especially of the spiral J') not only scatters the middlings, but produces lateral currents which operate in aid of the function performed by the exhaust-fan. While being operated upon in this manner, the middlings are thrown against the rings K K, from which they rebound, being thus returned to the spirals and again agitated, and gradually finding their way out through the open bottom, where they are again subjected to the action of the entering currents.

It will be observed from reference to the drawing that both spirals present a broad surface to the falling middlings, and that this is especially true of the spirals J. The spirals not only act as beaters to scatter the middlings during the exposure of the latter to the upward current, but they also aid in producing an upward current through the chamber F, and the result upon the middlings of the centrifugal force of the spirals is not counteracted except by the walls of the separating-chamber, or by the rings K K, when the latter are employed.

I am aware that radial teeth, projecting from a hub corresponding to the part I, and arranged in a spiral line thereon, and so curved that the outer end of each tooth will extend beyond the inner end of each other tooth, have heretofore been employed as beat-

ers or whippers in devices of this class, and I do not claim such.

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

1. In combination, the bottomless separating-chamber, the exhaust fan and chamber, the feedway, and the rotary vertical shaft carrying a spiral wing or flange having a broad working surface or face included between its outer and inner edges, and gradually diminishing in width toward the top, substantially as and for the purposes specified.

2. In combination, the bottomless separat-

ing-chamber, the exhaust fan and chamber, the feedway, the rotary spiral wing or flange J having a space between its inner edge and its hub, and the rotary spiral wing or flange J' having a steeper inclination than the flange J, and arranged in the said space, the said flanges diminishing in width toward the top, all substantially as and for the purposes specified.

JOHN H. DEDRICK.

Witnesses:

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JOSEPH LEE.