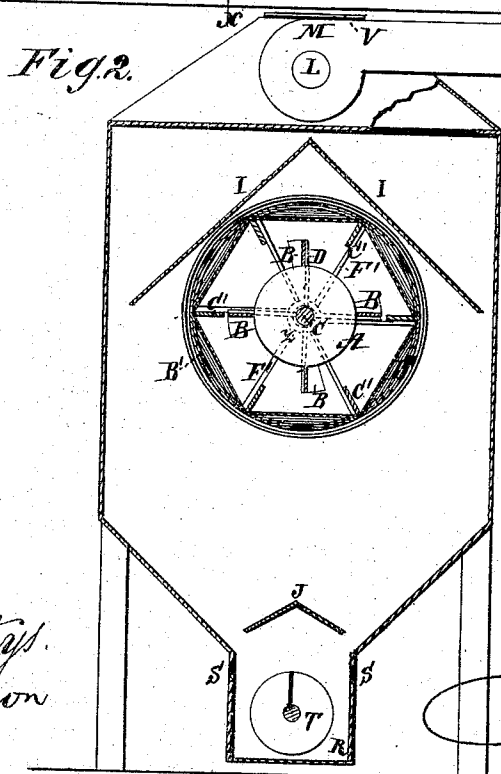
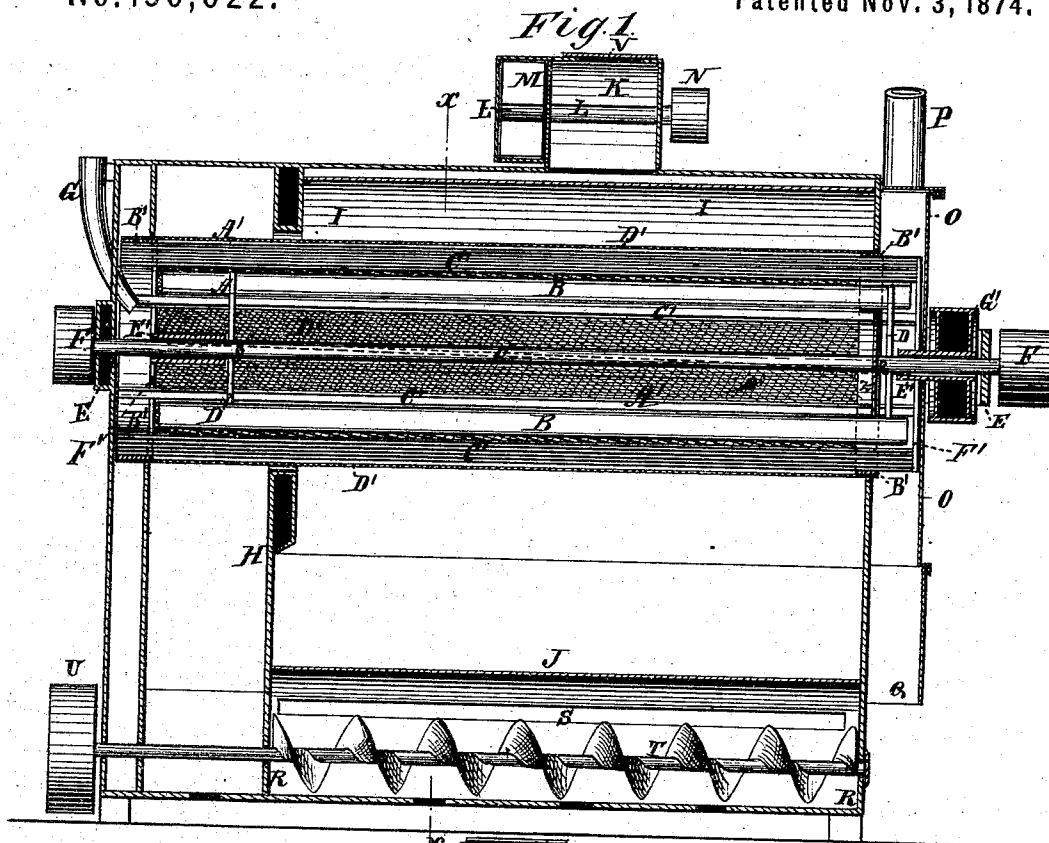


J. T. WRIGHT & E. BATEMAN.

Middlings-Purifiers.

No. 156,622.

Patented Nov. 3, 1874.



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UNITED STATES PATENT OFFICE.

JOHN T. WRIGHT, OF RICHMOND, AND ELKANAH BATEMAN, OF HOWARDSVILLE, VIRGINIA.

IMPROVEMENT IN MIDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. **156,622**, dated November 3, 1874; application filed May 19, 1874.

To all whom it may concern:

Be it known that we, ELKANAH BATEMAN, of Howardsville, in the county of Albemarle and State of Virginia, and JOHN T. WRIGHT, of Richmond, in the county of Henrico and State of Virginia, have invented a new and useful Improvement in Middlings Duster and Purifier; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a longitudinal section; Fig. 2, a transverse section.

This invention relates to that class of bolting-machines which are known as middlings-purifiers. It consists in the combination of a polygonal reel having bolting-cloth of different degrees of fineness, and ribs attached forming buckets, with the diagonally-set vanes of a fan, by which a blast is made in the direction of the vent, a suction fan and roof in the top of the casement, and a compartment in the end of the same, whereby the lighter and more worthless particles of the middlings are separated from the heavier grains, and the latter left in a better condition for regrinding.

In the drawing, A represents a fan with vanes B set slightly diagonal to its axis C, said vanes being attached to the axis by means of radial arms D, the extremities of the shaft C resting in bearings E E in the casing and terminating in the pulleys F F, which may be attached in the usual manner. Said shaft has also one or more circular disks, Z, near its end. Immediately surrounding this fan is the hexagonal reel A', constructed by means of annular rims B' connected by inwardly-projecting ribs C', which form ledges or buckets on the inside; and around said ribs is distended bolting-cloth, D', of different degrees of fineness, for the different grades of flour and middlings. These ribs C' are connected at their extremities by radial arms F' F' with jackets or sleeves E' E', which revolve around the bearings of the shaft C of the fan in the same or an opposite direction from the fan. Attached to one of the sleeves E' outside of the casing is

a drum or pulley, G', by means of which the reel is made to revolve. At the opposite extremity of the machine is the feed-pipe G, which leads into the reel. About one-sixth of the length of the reel from the feed is a partition, H, that divides the casement into two compartments. Above the reel in the larger compartment is a roof or screen, I, and below it another smaller one, J. In the top of this compartment is an aperture, with a drum, K, with valve V, in which drum revolves a shaft, L, with fan M and pulley N.

To one end of the machine is attached an extra compartment, O, which communicates with the inside of the reel and opens upward through a spout, P, and downward through a vent, Q. In the bottom of the machine running its entire length is a trough, R, with apertures S, in which revolves a spiral conveyer, T, driven by a pulley, U.

Having enumerated its parts I now proceed to give its mode of action: When the middlings enter the reel A' through the feed-pipe G they come in contact with the finest of the bolting-cloth, and being agitated by the fan A the fine flour is sifted out into the first compartment, the ledges or buckets C' agitating the contents of the reel thoroughly by retaining portions of the grist until they are immediately above the fan, when it is emptied upon the fan and blown against the bolting-cloth again. As the vanes B of the fan are set a little diagonally to the axis a rapid revolution causes a strong draft from the feed G toward the vent, and as the contents of the reel pass along they are alternately blown, sifted, and tilted by the revolution of the fan and the buckets attached to the reel. The contents that pass through the reel into the second compartment are held in suspension for some time by a draft from the inlets S induced by the fan M above, the smaller and more flocculent particles being carried off through the fan M; and the heavier grains, being obstructed by the screens I and J, are deposited in the bottom of the trough R, whence they are pushed out by the spiral conveyer T through holes in the bottom of trough into their respective bins ready for a second grinding. The draft of the fan M is

regulated by a valve, V, in the drum K, the opening of the valve destroying the effect of the fan upon the chamber of the second compartment. The portions of the grist which still remain in the reel, being now, from repeated siftings, coarse and large, are next blown out—the lighter through the spout P of the compartment O and the heavier through the vent Q, the circular disks Z on shaft C serving to keep the fine flour from passing out at the tail with the coarse particles. The reel A' is made hexagonal instead of circular, to prevent the bagging and caking of the flour, and the wearing of the cloth by abrasion in consequence of it.

Having thus described our invention, what we claim as new is—

1. The fan A, with diagonally-placed vanes B and disk Z, in combination with the hexagonal reel A', with projecting ledges C', as and for the purpose specified.

2. The casing divided into two compartments, in combination with the reel A', fan A, upper and lower roofs or screens I and J, fan M, and spiral-conveyer T, substantially as and for the purpose specified.

3. The compartment O, formed at the end of casing, and provided with a spout, P, and vent Q, in combination with the uncovered extension of the ribs of the reel and the fan A, whereby the ribs serve also as a fan to separate from the middlings such stuff as has failed to pass through the cloth of the reel, substantially as specified.

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