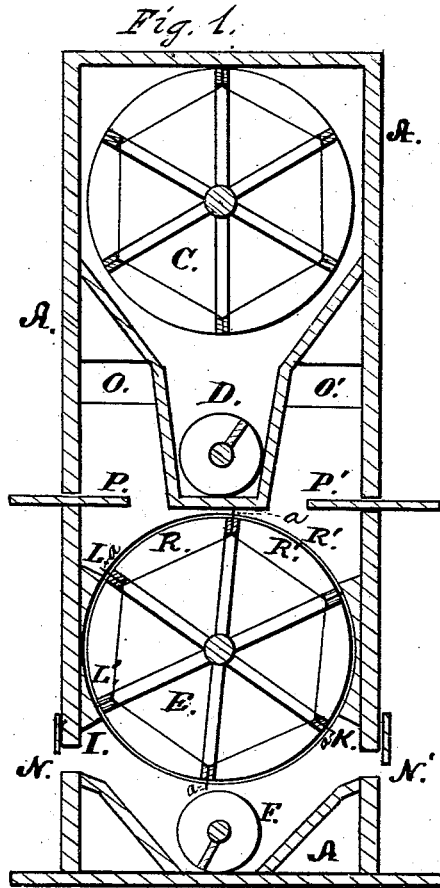
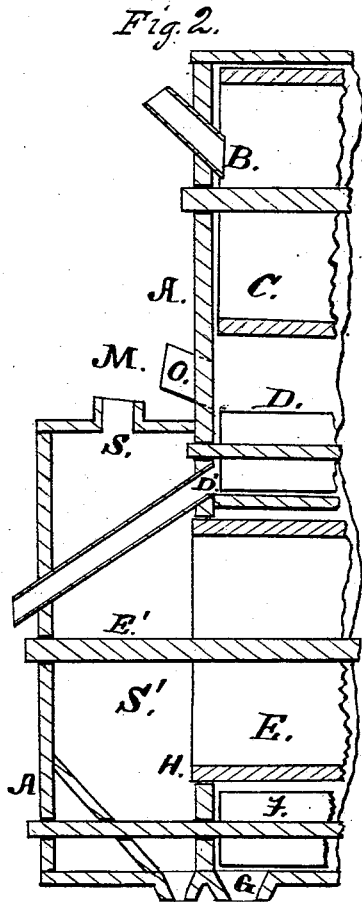


C. T. HANNA.  
Middlings Purifier.

No. 161,227.

Patented March 23, 1875



Witnesses:  
 F. M. Tate  
 S. T. Marshall.

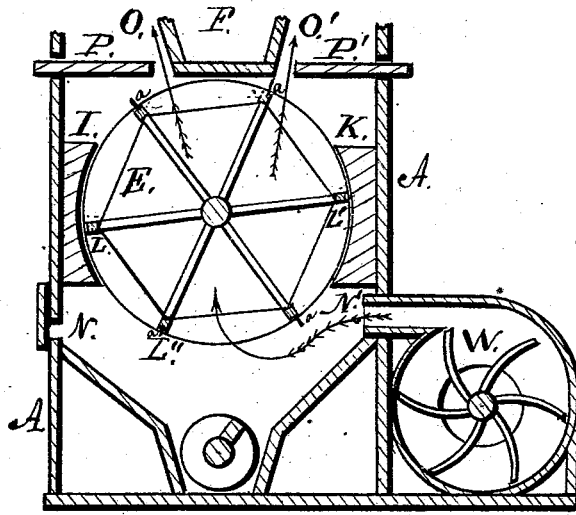
Inventor =  
 Cyrus T. Hanna.  
 By Saml. J. Wallace,  
 Attorney.

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Fig. 3.



Witness:  
 E. M. Tate  
 R. M. Marshall

Inventor: -  
 Cyrus Thompson Hanna,  
 By Saind. J. Wallace,  
 Attorney -

# UNITED STATES PATENT OFFICE.

CYRUS T. HANNA, OF KEOKUK, IOWA.

## IMPROVEMENT IN MIDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. **161,227**, dated March 23, 1875; application filed November 1, 1872.

*To all whom it may concern:*

Be it known that I, CYRUS THOMPSON HANNA, of Keokuk, Lee county, Iowa, have made an Improvement in Middlings-Purifiers for Mills, of which the following is a specification:

This invention relates to apparatus for preparing middlings for regrinding in flouring-mills. It is made substantially as set forth hereinafter, referring to the accompanying drawings, in which—

Figure 1 is a vertical cross-section of the apparatus. Fig. 2 is a partial longitudinal section of same. Fig. 3, Sheet 2, is a partial cross-section, likewise with additional details.

The apparatus has an outside shell, A, inclosing and bearing the several internal parts. The middlings, as they come from the ordinary bolting apparatus, enter this apparatus at spout B, discharging into the upper bolt-reel C, which removes the fine light stuff from them preparatory to the action of the lower or main bolt E. They pass down from the discharge of bolt C to bolt E by a passage-way at the ends of the bolts, so as to enter bolt E at the end opposite spout B. The bolt E is made of bolt-cloth sufficiently coarse to let pass all the particles of meal that require regrinding, and is designed to retain therefrom the fine bran that has escaped the bran-bolt, but which will deteriorate the quality of the product when reground. To do this the contents of the bolt are subjected to a blast of air from below, while the bolt is in action, which keeps the light stuff suspended in the bolt, while the heavier particles pass through. The bran and light stuff pass into a chamber, H, at the end, and the heavier particles for regrinding fall into chamber F below the bolt. The chambers F H are both made to be closed tight when in use, but with suitable provisions for discharge of contents, &c. A blast of air is produced by means of the fan W, or

by any suitable means, and enters the closed chamber F below the moving bolt E, so as to pass up through the lower part or side of the bolt, to keep the light bran suspended therein. At the sides of the moving bolt are air-stops I K, connecting with the sides of chamber F, to keep the air from passing up at the sides of the bolt from this closed chamber. These stops are concave in shape to fit the track of the reel-ribs as they turn, and of such width that each reaches between two ribs, so that one will always be passing against it to complete the stoppage of the air. To cause the reel-ribs L L to fit against the stops I K, so as to prevent the air passing between them, the ribs have flexible packing-strips *a* projecting to meet the stops I K as they pass. The outlet S of chamber H may be opened and let the air-current pass into an additional settling-chamber; or, to save this, it may be kept closed, so as to confine the air within the bolt-reel, and make it pass a second time through the bolt-cloth, and escape through the upper side of the reel above the stops I K.

This will save the need of a settling-chamber, and improve the action of the apparatus and clean the cloth. A suction can be made to act through opening S or O O', instead of a blast.

I claim—

1. The flexible strips *a* on the ribs L L of the revolving mill-bolt E, in combination with the air-stops I K at the sides of the bolt, substantially as and for the purpose set forth.

2. The combination of the flexible stops *a* on the ribs of the revolving bolt, the air-stops I K, and the fan W, for producing an air-blast below and through the bolt, substantially as set forth.

CYRUS THOMPSON HANNA.

Witnesses:

SAML. J. WALLACE,  
H. B. TEN EyCK.