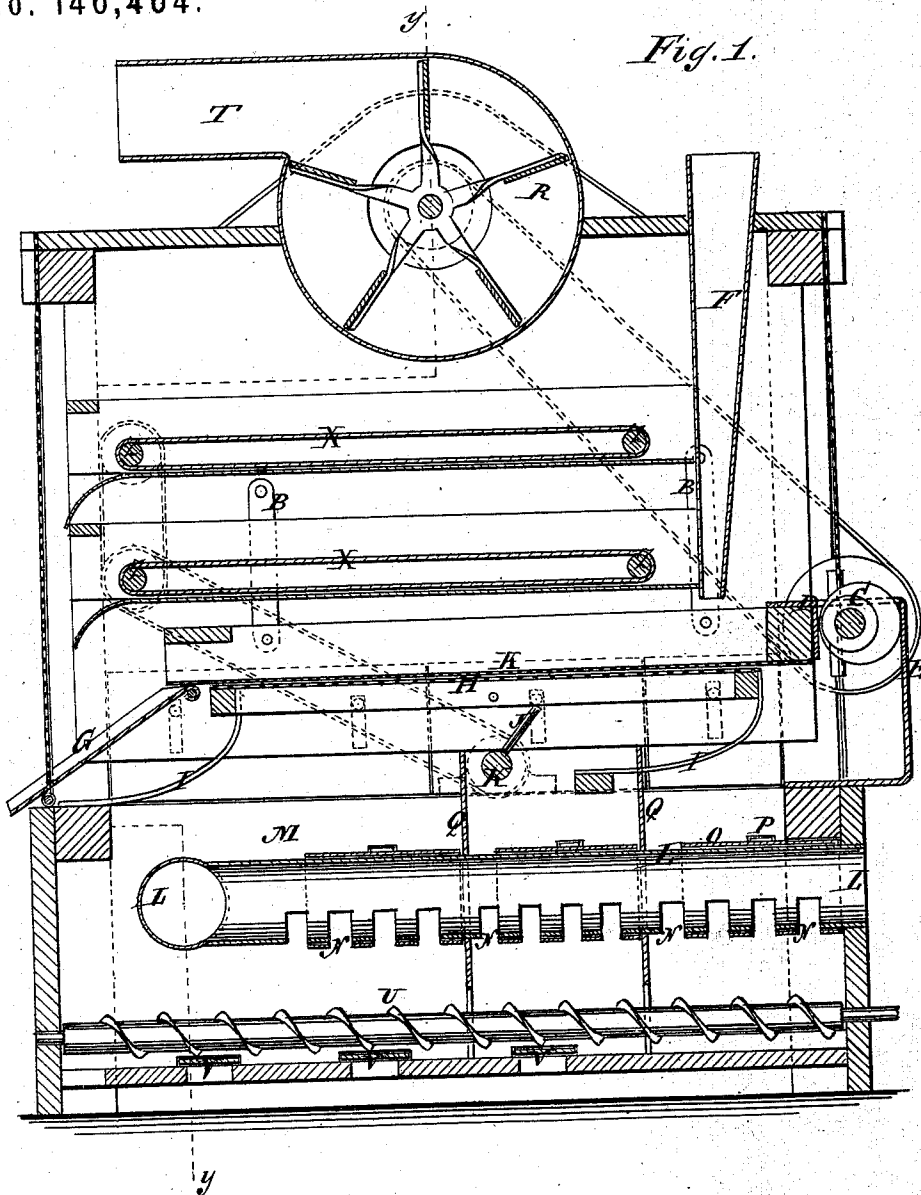


D. S. MACKEY.
Middlings-Purifiers.

No. 146,464.

Patented Jan. 13, 1874.

Fig. 1.



Witnesses.

E. Wolff.
C. Sedgwick

Inventor.

D. S. Mackay

Per

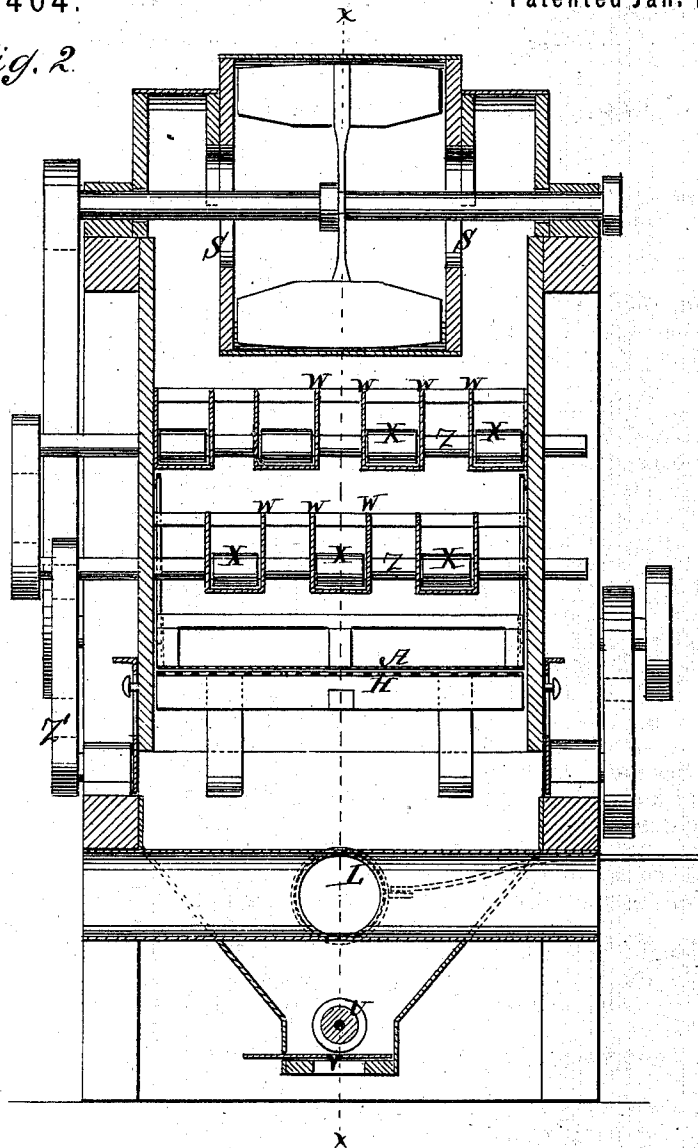
Attorneys,

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Fig. 2



Witnesses.

E. Wolff.
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UNITED STATES PATENT OFFICE.

DAVID S. MACKEY, OF BATAVIA, NEW YORK, ASSIGNOR TO HIMSELF AND
JAMES M. MACKEY, OF SAME PLACE.

IMPROVEMENT IN MIDLINGS-PURIFIERS.

Specification forming part of Letters Patent No. **146,464**, dated January 13, 1874; application filed
June 7, 1873.

To all whom it may concern:

Be it known that I, DAVID S. MACKEY, of Batavia, in the county of Genesee and State of New York, have invented a new and useful Improvement in Middlings-Purifier, of which the following is a specification:

The first part of the invention consists of a clearing-bolt combined with the bolt for sifting the middlings in such manner as to clear it periodically by rising under the said sifting-bolt, so that the latter rubs against said clearing-bolt for a short time. The clearing-bolt has coarse meshes, which allow the middlings falling from the sifter to pass through it readily. The second part consists of a wind-spout, regulating-gates, and partitions in the lower part of the case to regulate the application of the air-blast used for separating the specks and other light matters by passing upward through the bolt; and the third part consists of a system of endless carriers in the chamber above the bolt to receive the coarse refuse matters falling from the wind-currents, and discharge them through a spout at one end of the case.

Figure 1 is a longitudinal section of my improved machine on the line *xx* of Fig. 2. Fig. 2 is a transverse sectional elevation taken on the line *yy* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A is a flat bolt for sifting the middlings. It is suspended by the hangers B, so as to reciprocate endwise, and is reciprocated by the eccentric C acting against the end D of said bolt and the yoke E attached to it. The middlings are discharged upon it near the end D from the spout F. From the end D said bolt descends a little to the other end, and it discharges the coarse heavy matters upon the spout G. H is the clearing screw or bolt. It is arranged a half inch, or thereabout, below bolt A on flexible supports I, and is lifted up against A periodically, and held a short time by the lappet J on the slowly-revolving shaft K. The bolt A rubs against it while so held up, and is thereby cleared self-actingly. L is the pipe for admitting the air to the loose chamber M, to be sucked up through the bolt

to carry off the light specks, &c. Said pipe has slots N in the lower side, through which the air enters the lower part of the chamber, to facilitate the even distribution; and sliding gates O, with operating-levers P, are provided with said openings to regulate or localize the admission. Besides these gates, the chamber is separated into several compartments by partitions Q, to allow of directing the air more or less upon different parts of the bolt. The fan R, for causing the air-currents through the bolt, is located at the top of the case, and draws the air up to the center openings S on each side, and expels it through the spout T into the dust-room. In the chamber M, below the air-spout L, is a conveyer, U, for gathering the middlings which fall to the bottom of the chamber, and conveying them along to the spouts V, of which there are several, to discharge at different points for grading the middlings, and they have gates to open or close them to change the grade. Above the bolt A I arrange a series of carriers, X, formed of endless belts passing around rotary shafts Z, and extending longitudinally of the case. They are arranged in tiers, preferably so that those of one tier alternate with the spaces of the next, to allow the air to pass up between them, and yet receive or catch the coarse light matters which are taken up from the bolt by the air-currents, and fall before arriving at the fan.

The carriers are shown in the drawing arranged in troughs W, but the latter may be dispensed with in practice.

The shafts Z are operated by a belt, Z', on the slow-revolving shafts K.

I do not claim, broadly, the combination, with a bolting apparatus, of an air-induction pipe and gates for regulating the admission of air; nor the arrangement of troughs in the manner herein specified, so as to allow air-currents to pass up between them.

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

1. The combination of the clearing-bolt H and mechanism which periodically lifts it up to and holds it against the middlings-bolt, and

thus causes the latter to automatically clear itself, substantially as specified.

2. The arrangement of the air-induction pipe L, openings N, gates O, and the partitions Q in the chamber below the bolt, substantially as specified.

3. The arrangement, between a bolting device and a fan, of a series of endless traveling

carriers, formed of belts arranged on parallel and opposite shafts, substantially as shown and described.

DAVID S. MACKEY.

Witnesses:

GEO. H. ROBERTSON,

WM. C. BUXTON.