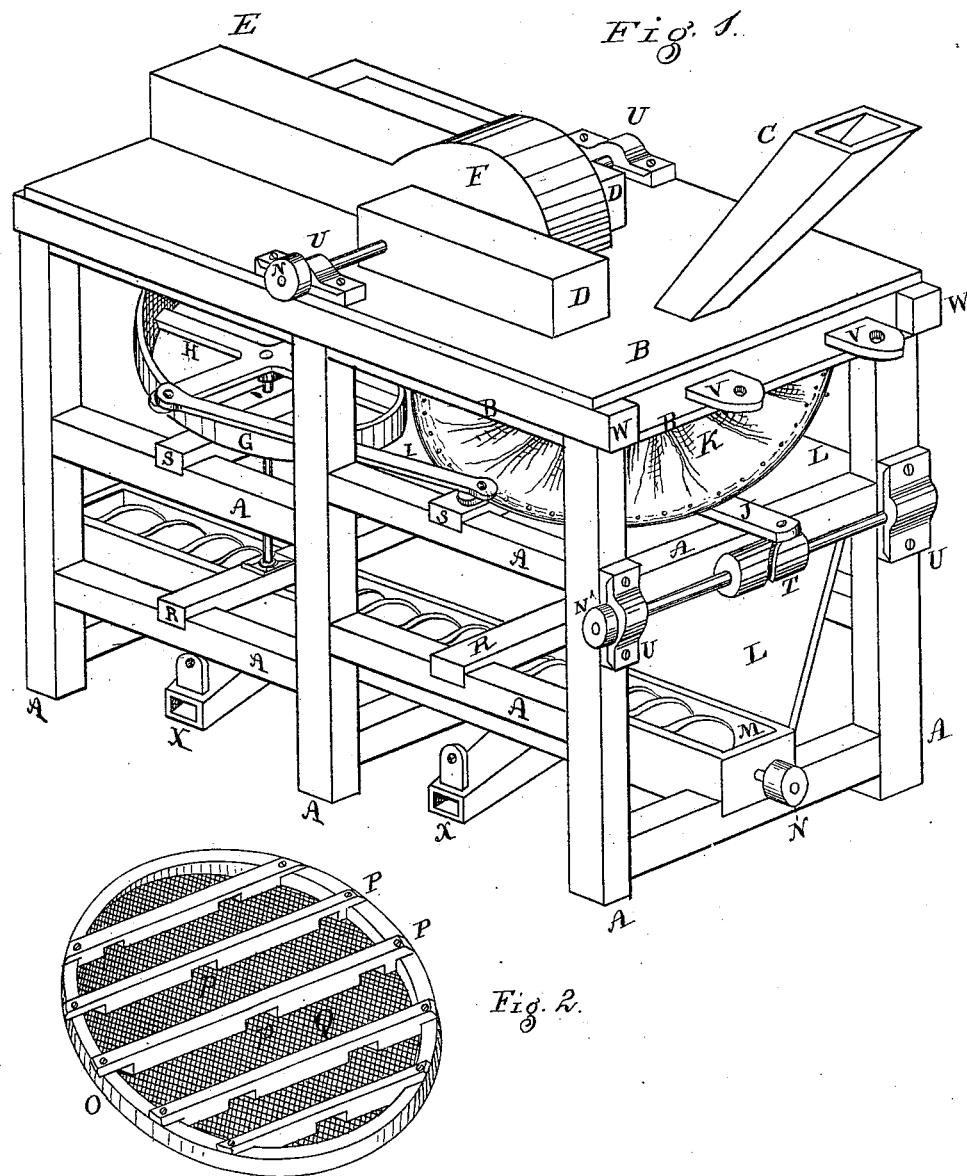


J. B. MECARTNEY.  
Middlings-Purifier.

2 Sheets—Sheet 1.

No. 217,891.

Patented July 29, 1879.



WITNESSES.

J. B. Mecartney  
Jacob Stauffer

INVENTOR.

J. B. Mecartney

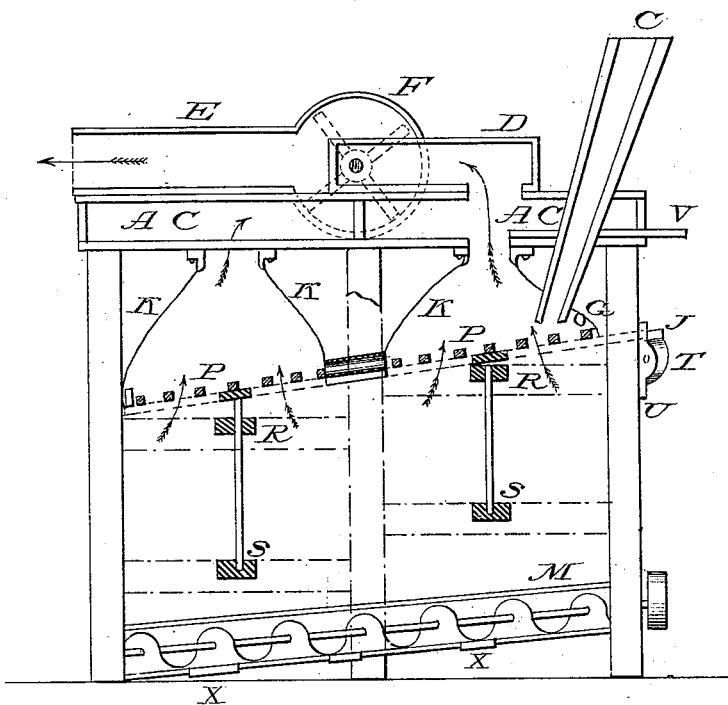
2 Sheets—Sheet 2.

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Fig. 3.



Witnesses:

W. B. Wiley  
Jacob Stauffer

Inventor:

J. B. McCartney

# UNITED STATES PATENT OFFICE.

JOHN B. MECARTNEY, OF STRASBURG, ASSIGNOR OF ONE-HALF HIS RIGHT  
TO JOHN W. ESHELMAN, OF WEST LAMPETER, PENNSYLVANIA.

## IMPROVEMENT IN MIDDLING-PURIFIERS.

Specification forming part of Letters Patent No. **217,891**, dated July 29, 1879; application filed  
May 28, 1879.

*To all whom it may concern:*

Be it known that I, JOHN B. MECARTNEY, of Strasburg, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Middlings-Purifiers, of which the following is a specification.

This invention relates to a class of machines for separating and purifying middlings from the bran into different grades of flour by means of sieves, fans, and conveyers variously combined and arranged.

The novelty consists in certain features hereinafter more fully described and explained, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the machine with the outer boards removed on the side and end to show the sieve-case, as also the canvas cover and the other working parts. Fig. 2 shows one of the sieves detached. Fig. 3, Sheet 2, is a longitudinal central vertical section, showing the two sieves in their respective holders, with cross-strips, flexible covering, the communication with the air-chambers A C, flues, and fan.

The arrows indicate the air-currents drawn through the sieves from below.

A is a suitable frame-work of uprights and cross-pieces. The top longitudinal pieces (marked W) are boarded or closed across the top and bottom B, leaving a space forming air-chambers between them. Separate openings are made in the bottom or floor of each division of these air-chambers directly over the center of each sieve. Valves V are used to regulate the draft of each independently of the other. In the upper floor of these air-chambers openings are made to communicate with flues D, placed along each side of a fan-case, F, and opening into the center of the fan within the case.

A spout or flue, E, extends back over the top of the machine, through which the fine dust and air are discharged.

U U show the boxes for the journals of the fan-shaft and pulley or cam-shaft, operated by a strap and pulley, or otherwise geared. If more than one sieve are used (I show two) I have the second sieve-receptacle G placed on lower cross-pieces, so that there is a gradual

inclination from the front to the rear sieve. These receptacles G are each centrally supported on a shaft, so as to allow a partial rotation. These shafts are in bearings supported on cross-pieces R S.

The sieve, Fig. 2, as also the receptacle, is of a circular form. I do not necessarily confine myself to that form when actuated in the manner herein below specified. These sieves, of various grades of fineness of cloth, are attached to the bottom of the rim O. A series of cross-pieces, P, set in this rim, having communications p cut out, permit the material, after due agitation by means of their intervention, to pass backward over the cloth, down the incline from one compartment or chamber to the next, and, by a yielding flue or spout, to be conveyed with the bran from one sieve to the other, and finally the bran and tailings are discharged in the rear of the machine.

In order to cause the suction of the fan to act only through the sieves a canvas or other flexible cover, K, is attached to the rim G below and to a hoop above, secured against the under side of their respective air-chambers in the top of the machine, so as to inclose the receptacle with its sieve.

The vibration of the sieves is imparted by a grooved cam, T, or other suitable device, to cause a rod, J, which is attached to the holder G, to vibrate rapidly. One or more central or side rods, I, connecting the two or more sieves, will transmit the vibrating motion from the first sieve.

L indicates one side of the double chute or hopper beneath to lead the bolted material into the conveyer-box M.

A series of spouts and valves, x x, at intervals draw off the different grades of fineness.

With respect to the gearing, hopper, conveyer, fan, and frame-work, I lay no special claim, as such are common and variously combined and arranged in purifying-machines.

The feed-spout C passes through the air-chamber and discharges on a scattering disk into the forward portion of the front sieve.

Experience proves that the partial rotation of the sieves is the most natural vibratory motion given for riddling by hand; and a cur-

rent of air from below upward through the meshes of the cloth, within the surrounding cover, and through the flues to the suction-fan, has the tendency to raise the light material while under the agitation due to the peculiar rotary motion of the sieves and the checking action of the cross-strips, which subject the material to the most perfect and thorough separation. These devices jointly prevent all tendency to clog the meshes of the cloth, however fine, so that they permit the air to pass through. Therefore,

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

1. The combination of sieve O, provided with slotted cross-strips P and flexible covering K, and mounted on a central pivot, with a

fan for producing an upward draft through the same, substantially as and for the purpose specified.

2. The combination of sieves O, each arranged to oscillate on a central pivot, said sieves being arranged to allow the material to flow from one to the other, and connected to each other by means of a rod, I, or its substantial equivalent, whereby the vibration imparted to the one is transmitted by it to the other, substantially in the manner and for the purpose set forth.

J. B. MECARTNEY.

Witnesses:

W. B. WILEY,  
JACOB STAUFFER.