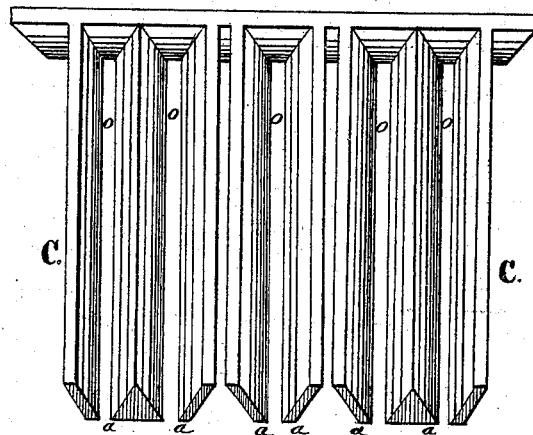


S. S. SHAVER.  
Middlings-Separators.

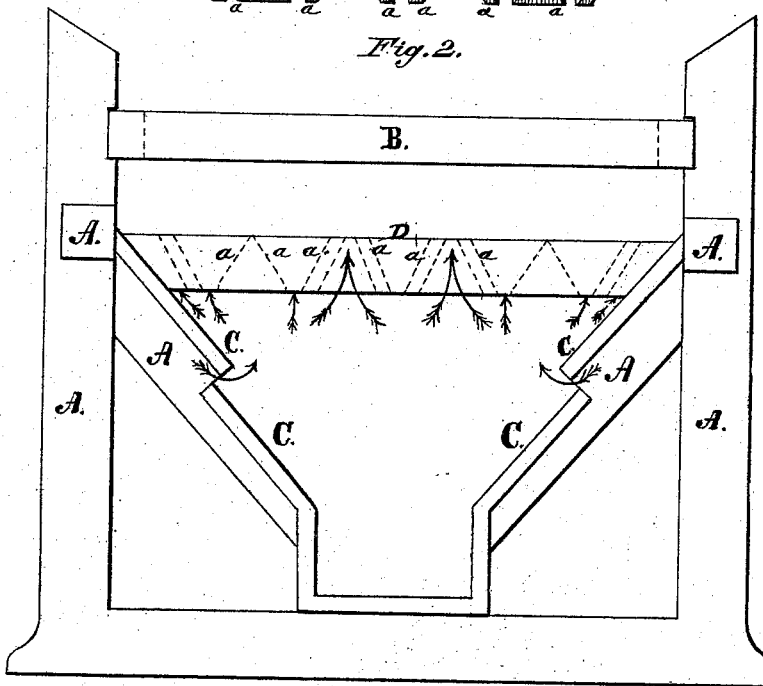
No. 214,717.

Patented April 22, 1879.

*Fig. 1.*



*Fig. 2.*



*Attest:*

*T. A. Thorpe.*  
*P. Jennings*

*Inventor*  
*Silas S. Shaver*  
*per R. H. Boynton*  
*Atty*

# UNITED STATES PATENT OFFICE.

SILAS S. SHAVER, OF MENASHA, WISCONSIN.

## IMPROVEMENT IN MIDLINGS-SEPARATORS.

Specification forming part of Letters Patent No. **214,717**, dated April 22, 1879; application filed November 13, 1878.

*To all whom it may concern:*

Be it known that I, **SILAS S. SHAVER**, of the city of Menasha, Wisconsin, have invented a new and useful Improvement in Middlings-Separators, of which the following is a specification.

It is a well-known fact that the tendency of the air received into the conveyer-chamber of a middlings-separator is toward the center of the sieve or bolting-cloth. This results from two causes—the position of the openings into the conveyer-chamber and the location of the exhaust-fan over the center of the machine.

As the machine has been heretofore constructed, the blast is too strong in the center and insufficient at the sides to produce as good work as when the air is equally distributed underneath the entire surface of the sieve or bolting-cloth. At the center, where the current of air is strongest, a portion of the middlings will be carried along with the offal into the "blow-chamber," and at the sides, where the current of air is weakest, the separating process will be incomplete, and a portion of the offal will fall through the sieve un-separated from the middlings.

The object of my invention is to equally distribute the air in its upward course through the sieve; and the invention consists in applying to middlings-separators a device for equalizing the draft of air, as hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a detached view of the air-equalizer in perspective. Fig. 2 is an end view of the lower portion of a middlings-separator with the casing removed, showing the relative position of the equalizer to the bolting-cloth.

The conveyer and fan, and the various devices employed to produce the several mechanical movements, are not shown or described, as they form no part of my invention.

A represents the frame-work of the machine, to which is attached the casing C, by which the operating parts of the machine are inclosed.

B represents the location of the bolting-cloth or sieve, and D D represent the air-equalizer.

The arrows show the direction of the air in its passage into and out of the conveyer-chamber of the machine.

The air equalizer or distributor consists of a diaphragm or frame, D, situated immediately under the bolt, and preferably made of

inclined boards, running in the longitudinal direction of the bolt, leaving an air-space between each set of inclines, the air-openings in the center being narrower than those at the sides, or fewer in number, so that the amount of blast received on the under face of the bolt will be equalized, or, in other words, that the bolt shall receive throughout the same quantity of air-blast in the operation of the separator.

In the drawings, *aa* are the inclined boards, with the graduated openings *o o*.

The openings may be either at the top or bottom of the inclines of the boards forming the diaphragm. In the latter case they admit air to a larger area, and in the former case they admit air to a smaller area.

The openings may vary in width, as shown in Fig. 1, or they may vary only in their relative distances.

The boards forming the diaphragm must be either inclined, as the middle ones shown in the drawings, or of an inverted-V form in cross-section, as the ones shown at the sides, for permitting the free escape of the middlings falling.

Although I have constructed my air-equalizer in the manner shown in the drawings, I claim that any change of form in the same that provides for an equal distribution of the air in its upward passage through the sieve to be within the scope of my invention.

What I claim, and wish to secure by Letters Patent, is—

1. In a middlings-separator having means for producing an upward draft of air through the bolt, an air-distributor consisting of a diaphragm or frame arranged immediately beneath the bolt, and provided with openings longitudinally of the bolt for the admission of air thereto, substantially as described.

2. In a middlings-separator having means for producing an upward draft of air through the bolt, an air-distributor consisting of a diaphragm or frame arranged immediately beneath the bolt, and provided with longitudinal openings, graduated according to their location with respect to the bolt, for the purpose of regulating the admission of air to the different parts of the bolt, substantially as set forth.

SILAS S. SHAVER.

Witnesses:

R. H. BOYNTON,  
G. H. CLARKE.