B. WIRT & H. G. CLOUSER

Middlings-Separator.

No. 212,292. Patented Feb. 11, 1879.

Fig. 1

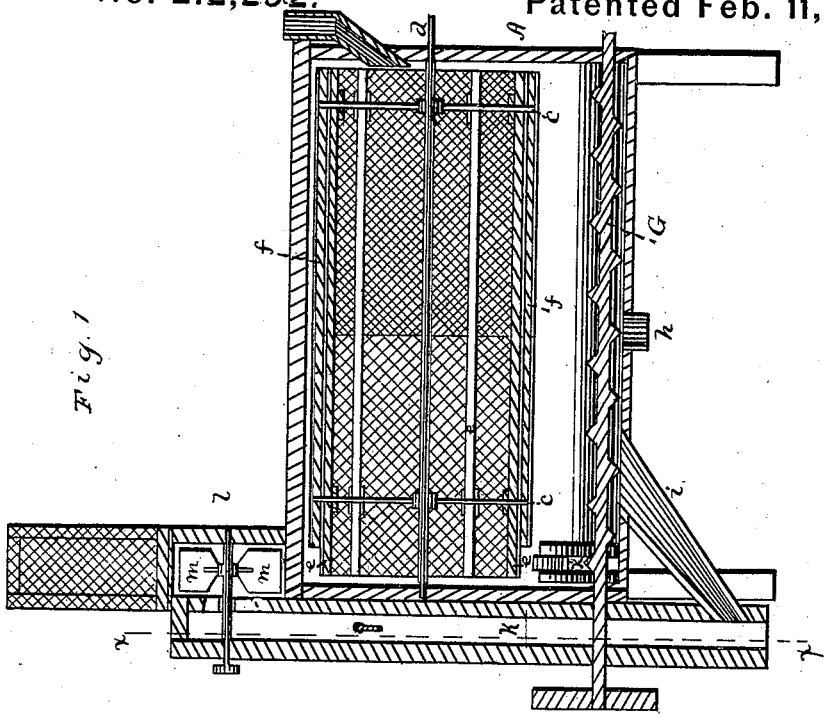
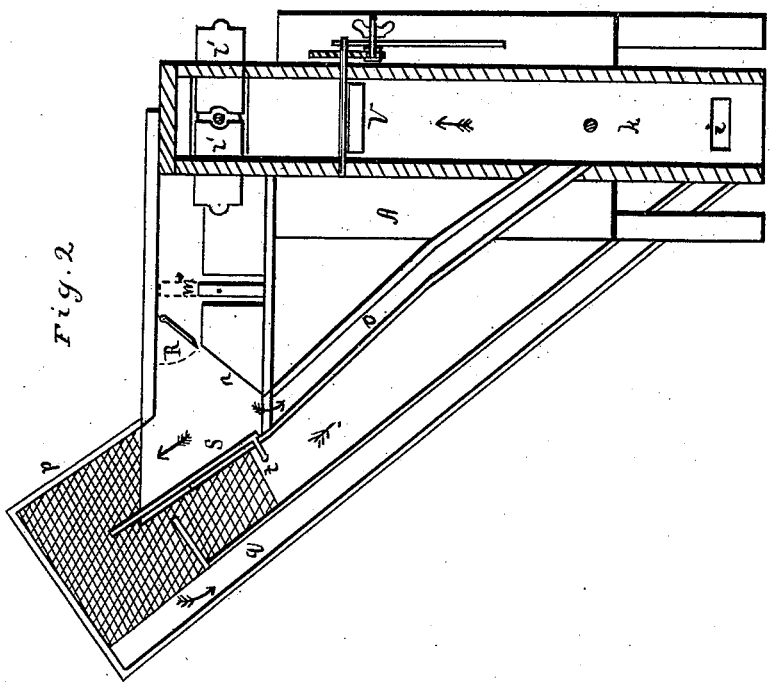


Fig. 2



Witnesses

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UNITED STATES PATENT OFFICE.

BEN WIRT AND HENRY G. CLOUSER, OF MILLERSBURG, PENNSYLVANIA.

IMPROVEMENT IN MIDDLINGS-SEPARATORS.

Specification forming part of Letters Patent No. **212,292**, dated February 11, 1879; application filed December 18, 1878.

To all whom it may concern:

Be it known that we, BEN WIRT and HENRY G. CLOUSER, of Millersburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Middlings-Separators; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In the accompanying drawings, Figure 1 is a vertical central section of a middlings-separating machine constructed in accordance with our invention. Fig. 2 represents a vertical section, taken through line *x x*, of passage *k*, Fig. 1, the sides being removed from passage which leads from the fan-blast box, and also from blast-box and discharge-spouts, in order that the internal construction thereof may be more clearly illustrated.

Referring to the accompanying drawings, which illustrate our improvements in middlings-separators, the frame-work of the machine is indicated by letter A. B represents the feed-spout, leading to the double-reel bolt. This double-reel bolt is composed of the rods or arms *c*, radiating from the axis *d*, and a series of strips, *e*, secured upon the ends of said rods, the frame thus formed being covered with bolting-cloth and constituting the inner bolt. Strips *f*, similar to the above-mentioned strips *e*, are secured in like manner around the exterior of this bolt, and these are in turn surrounded by bolting-cloth, whereby a double bolting-reel is obtained, substantially as herein shown.

Owing to the degree of fineness of the bolting-cloth from the spout B to the center of the bolt, the superfine flour only will be separated from the middlings, &c.; and owing to the texture of the cloth from the center to the tail end of the bolt, the middlings will be rendered still purer by the removal of the coarsest stuff.

The spiral conveyer G, provided with the usual driving-pulleys, conveys the superfine flour which sifts down through the bolt between its center and spout A to a spout, *h*, thus saving all this grade of flour from entering the suction and blast. In this way great waste is prevented.

The middlings which sift down through the bolt from center to tail are conveyed to a spout, *i*, which enters into the suction spout or passage *k*. At the rear end of the machine, and below the tail of the double reel, we form a spout, *k'*, which carries off the red ship-stuff from the reel, which is left therein after the middlings have been sifted through. The passage *k* extends upward to the drum *l*, wherein are mounted the fans *m*, for creating the requisite blast. The suction-passage *k* is provided with slides *l' l'*, whereby the opening in the drum may be enlarged or diminished, and the suction which draws the lighter middlings and blast-stuff into the drum thereby regulated. The middlings and blast-stuff, being driven by the rotating fans, pass over the regulating-slide *m'*, the middlings falling on the fall-board *n*, thence passing down through the spout *o* into the suction-spout *k* thoroughly purified, and thence passing from the spout *k* at its bottom. The blast-stuff is driven by the blast from the fan, and carried from the machine through the medium of the blast-box *p*, which, as shown, is covered with bolting-cloth, and is provided with a downward passage, *q*.

R represents a pivoted valve, which is adapted to regulate the blast so as not to permit the fine middlings to be carried off into the blast-box, by reason of its being adjusted at such angle as will admit of the middlings striking against its under side. S is a sliding fall-board, operated by a handle, *t*, or in any suitable way, and constitutes an auxiliary to the valve in retaining the fine middlings in the machine.

In connection with the suction-pipe *k*, we employ a valve, V, which regulates the suction and blast in case of any irregular speed of the mill, which in practice frequently occurs, especially in country or custom mills.

What we claim is—

1. The combination of the reel-bolt, blast-passage *k*, valve V, slides *i i*, and drum with rotating fans, all constructed and arranged as herein shown and described.

2. In combination with the suction-spout

and blast-fans, the blast-box *p*, passage *q*, fall-board *n*, spout *o*, and valve R, substantially as shown and described.

3. In combination with the blast-drum, valve R, fall-board *n*, downward spout for middlings, and blast-box *p*, the sliding fall-board S, substantially as shown and described.

4. In a blast-passage leading from the blast-drum to the blast-box, and to a downward passage for the middlings, the regulating-slide *m'* and valve R, located within the passage which leads from the blast-drum, containing the rotary upper blast and suction fan, the said valve R being arranged just above the fall-board, and adapted to regulate the blast so as not to permit the fine middlings to be carried into the blast-box, but to cause the same to strike against it and thereby fall into the spout *o*, all substantially as shown and described.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

BEN WIRT.
HENRY G. CLOUSER.

Witnesses:
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JOHN S. MUSSER.