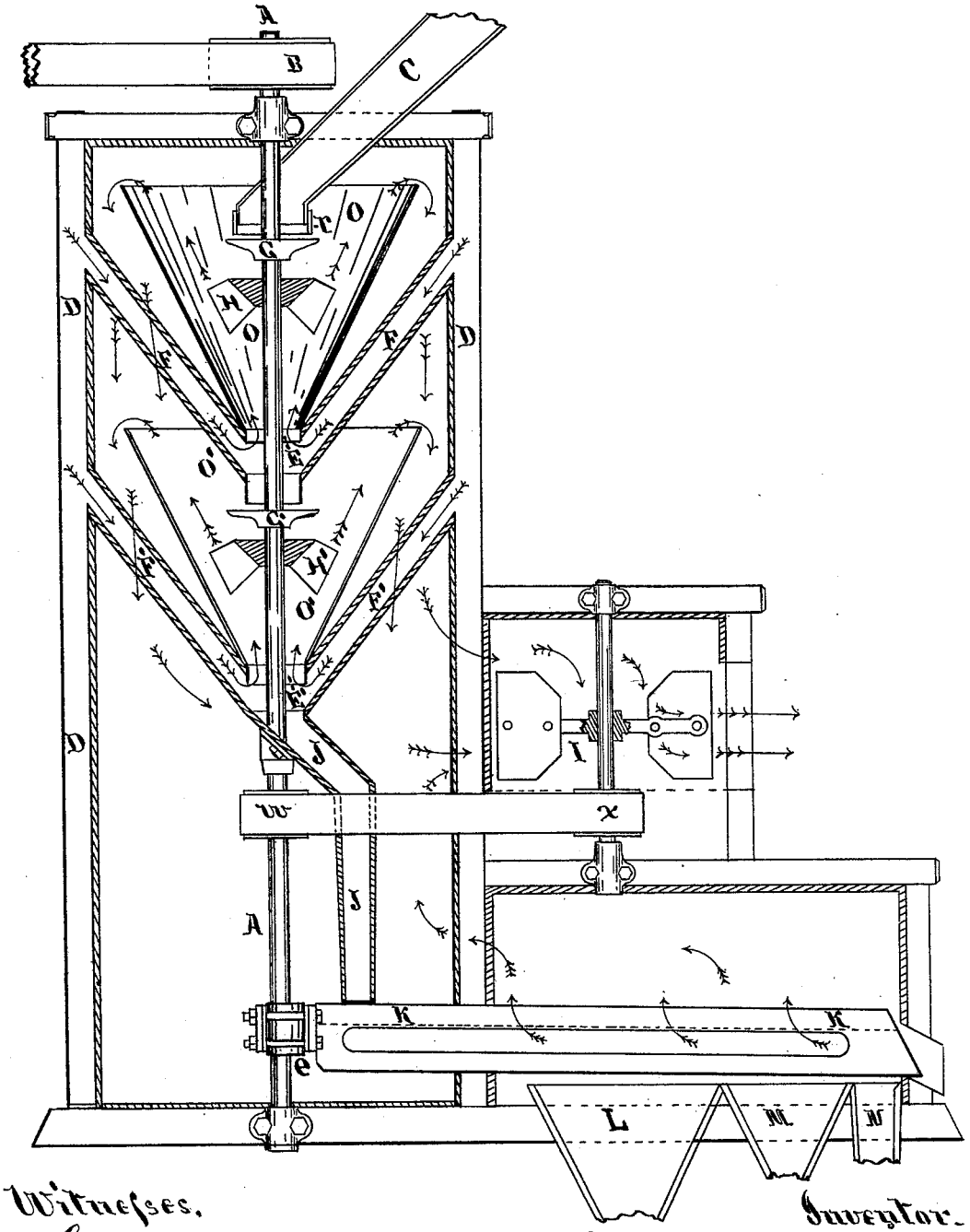
T. NEWELL.

Middlings-Separators.

No. 204,681. Patented June 11, 1878.



Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS NEWELL, OF SACRAMENTO, CALIFORNIA.

IMPROVEMENT IN MIDDLINGS-SEPARATORS.

Specification forming part of Letters Patent No. **204,681**, dated June 11, 1878; application filed April 9, 1878.

To all whom it may concern:

Be it known that I, THOMAS NEWELL, of the city and county of Sacramento, State of California, have invented a new and useful Improvement in Middlings-Purifiers, of which the following is a specification:

The invention relates to that class of machinery used in flour-mills for the purpose of purifying middlings; and it consists of a combination of hoppers and wind-fans, so arranged and operated as to expel the lighter and impure material from the middlings which pass through the purifier.

The object of the invention is to provide a simple and compact machine for the purposes set forth.

In the accompanying drawing, A is the upright shaft, passing through the machine; B, the driving-pulley; C, the spout leading from the middlings-garner; D, frame of the machine; *r*, adjustable sleeve on spout C, to regulate the feed of middlings; F F′, air ducts or spouts; G G′, disks or saucers, for scattering the middlings against the funnels O O′. H H′ are fans, for blowing the light fuzz from the middlings; I, suction-fan; J, spout for conducting the middlings into the sieve K, said sieve being run or shaken by the eccentric *e*. L is a spout for purified middlings; M, spout for inferior middlings; N, spout for tailings.

The shaft A, being run by the pulley B, is used for the purposes of rotating the saucers G G′, the fans H H′, the pulley W, from which a belt is run to *x* of the fan I, and the eccentric *e* that shakes the sieve K.

The purpose of the saucers G G′ is to scatter the middlings in a thin sheet against the funnels or hoppers O O′.

The purpose of the fans H H′ is to force the air in the direction shown by the darts out and over the rim of the funnels O O′, while at the same time drawing the air in through the spouts F F′, and up through the bottom of the funnels E E′, the effect of the air on the middlings, when scattered by the saucers G G′, being to carry the light material and fuzz over the funnels O O′, and down in the direction shown by the darts, and out through the fan I into a proper receptacle for such material; the object of the fan I being to suck the air out of the machine while it passes in at F F′, up through O O′, and down, as shown by darts, also to draw the air up through the sieve K, and from thence into I, as shown by darts, for the purpose of drawing from the middlings all impurities that they may be relieved of while passing through the machine.

The communication between the middlings-purifier proper and the suction-fan I need not be confined to the place shown by the arrows, but can, in practice, be located at or near the upper part of the frame D, while the object of the fans H H′ is to cause the wind to impinge directly on the thin sheet of middlings that is formed by the action of the saucers G G′.

The middlings, in passing through the machine, first start from the spout C and pass through the adjustable sleeve *r*, which is made to slide down close to the saucer G, so as to control the feed or delivery of middlings to suit the capacity of the machine. After passing through the sleeve on the rotating saucer G, it is thrown in a thin sheet against the inner surface of the funnel O. While passing from G to O it is struck by the wind from the fan H, which separates the fuzz and light impurities from the middlings, which pass downward through E and on the saucer G′, where the action of the saucer G′ and fan H′ is again repeated, the same as above; from thence down through the passage E and through the spout J into K, the sieve-frame K being provided with a polished-metal bottom, which answers in place of a conveyer, with a port at the tail, made movable, so as to be made to cut off more or less of the middlings for the inferior spout M. Both of the saucers G G′ and the fans can be moved up or down on the shaft A, as may be required, to blow the middlings either light or hard, as the case may require.

In presenting the invention I have shown the machine in the drawings made in duplex form—that is, composed of two funnels, O O′, two saucers, G G′, and fans H H′, with suitable air-passages F for each; but whenever it will suffice for the quality of work required, it will do to form a single machine composed of only one funnel, O, saucer G, and fan H,

with air-spouts to correspond. In both cases the spouts F are to be provided with swinging caps at their outer ends, so that the inflow of air can be controlled to suit the work to be performed.

What I claim as new and as my invention, and desire to secure by Letters Patent, is—

1. The combination of the shaft A, the saucer or saucers G, and the fan or fans H with the suction-fan I, substantially as and for the purpose hereinbefore set forth.

2. The combination of the saucer or saucers G and fan or fans H with the funnel or funnels O, substantially as above set forth.

3. The combination of the saucer G, fan H, and funnel O with the suction-fan I and sieve K, substantially as above set forth.

THOMAS NEWELL.

Witnesses:
GEORGE B. BEATY,
JOHN WHITELAW.