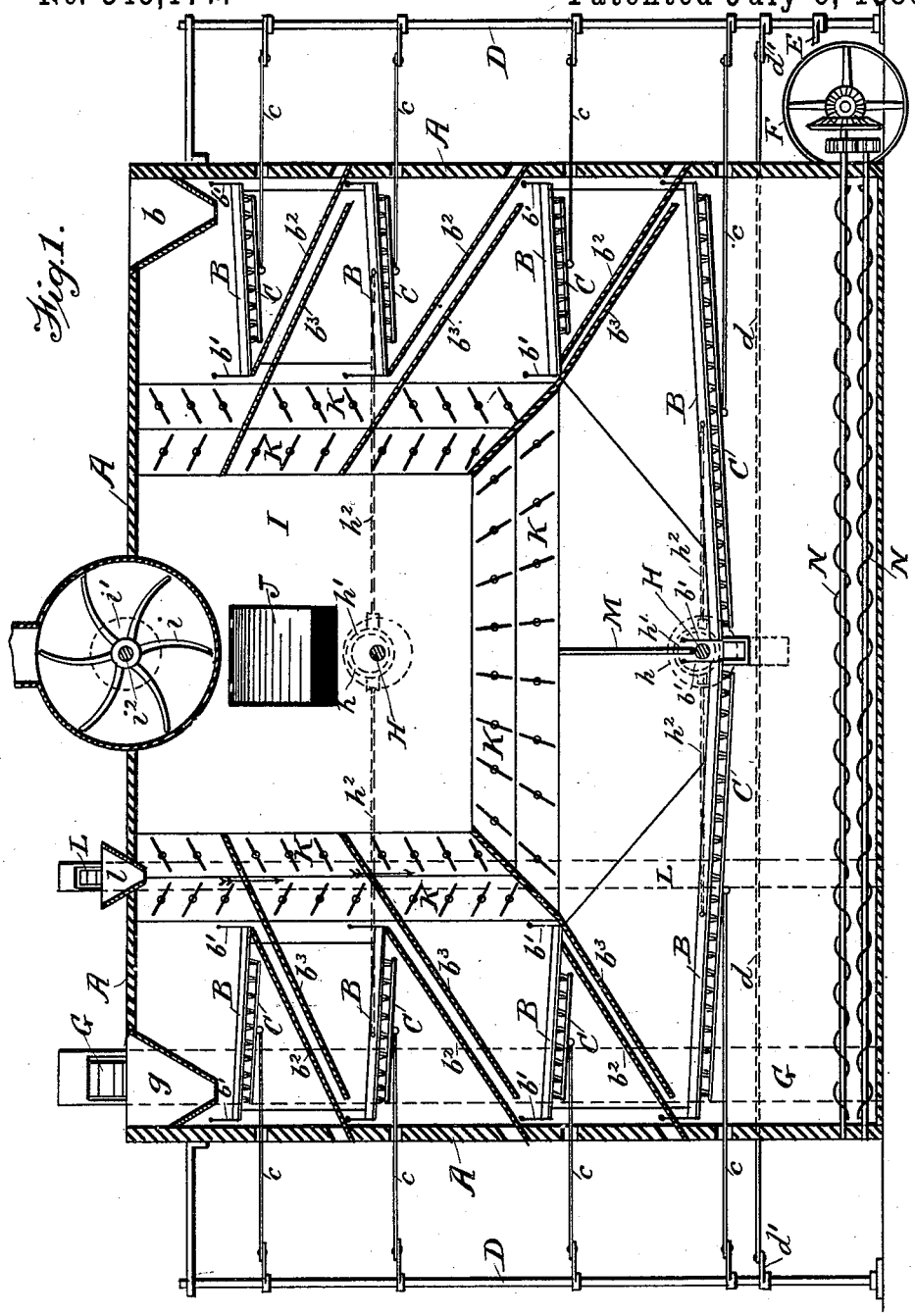
(No Model.) 2 Sheets—Sheet 1.

# R. A. REW.

## MIDDLINGS PURIFIER.

No. 345,177. Patented July 6, 1886.

Fig. 1.



WITNESSES:

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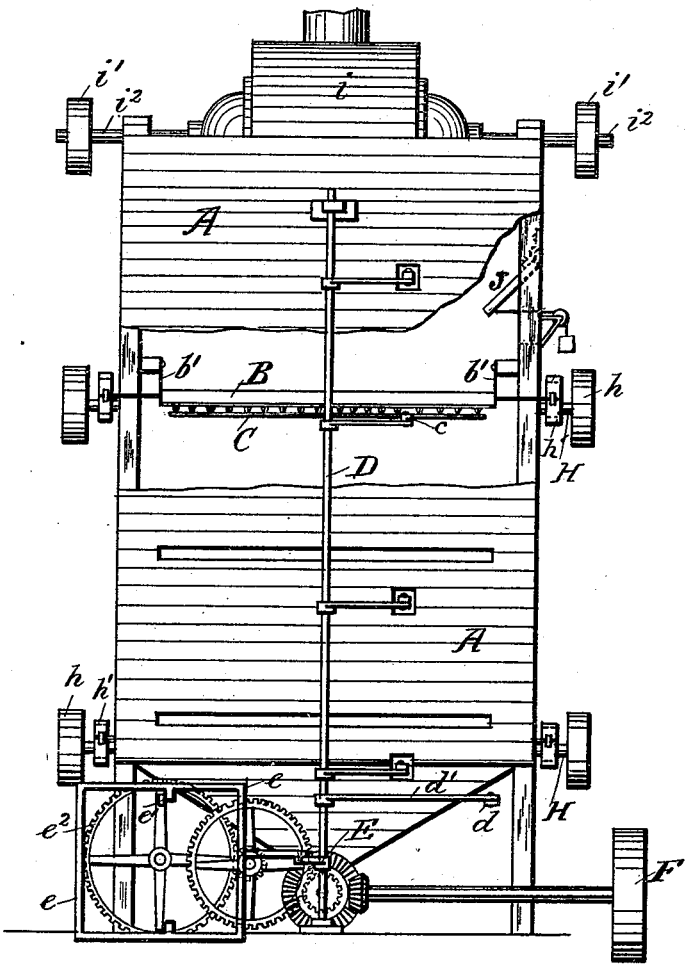
(No Model.) 2 Sheets—Sheet 2.

# R. A. REW.

## MIDDLINGS PURIFIER.

No. 345,177. Patented July 6, 1886.

Fig. 2

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# UNITED STATES PATENT OFFICE.

RICHARD ALLEN REW, OF POMEROY, WASHINGTON TERRITORY, ASSIGNOR OF ONE-HALF TO BENJAMIN B. DAY, JAMES W. HULL, AND CHARLES B. FOOTE, ALL OF SAME PLACE.

## MIDDLINGS-PURIFIER.

SPECIFICATION forming part of Letters Patent No. 345,177, dated July 6, 1886.

Application filed May 19, 1885. Serial No. 166,043. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD ALLEN REW, a citizen of the United States, residing at Pomeroy, in the county of Garfield, Washington Territory, have invented certain new and useful Improvements in Middlings-Purifiers, of which the following is a description.

Figure 1 is a longitudinal section through my improved middlings-purifier. Fig. 2 is an end view of the same, with the wood-work at the rear removed.

My invention relates to those middlings-purifiers which are provided with vibrating sieves through which the middlings are passed; and it consists in the detailed construction and combination of the parts hereinafter fully described, by which the efficiency of the machine is greatly increased, and by which it is made to occupy less floor-space than the machines at present in use.

In the accompanying drawings, similar letters of reference indicate corresponding parts in both the figures.

A is the framing of the machine, in which is arranged a series of vibrating sieves, B, which work in combination with the brushes C, situated on the under side of them. *c* are the arms which carry the brushes and connect them to the upright shafts D, from which they receive their motion. The upright shafts D are connected together by the bar *d*, fastened to the ends of arms *d'*, so that the brushes may always move in the same direction.

E is an arm fastened on one of the upright shafts D and connecting it to the sliding frame *e*, which receives its motion from the pin *e'*, situated on the side of the spur-wheel $e^2$, and projecting therefrom. This frame converts the rotary motion which the spur-wheel $e^2$ derives through a suitable train of gearing from the driving-pulley F into a reciprocating movement of arm E. The sieves B are fed from the hopper *b*, and are suspended by springs *b'*, which allow them to vibrate. The sieve next below hopper *b* is connected to the sieve immediately beneath it, and the remaining sieves are also similarly coupled together in pairs, so as to have the same vibrating motion. Gather-boards $b^2$ are provided to catch the clean middlings which fall through the sieves, and return-slides $b^3$ convey all the middlings which pass over the tail of each sieve to the head of that sieve next below it.

G is an elevator, which conveys the middlings from the bottom half of one side of the machine to the hopper *g* at the top of the other half of the machine.

H are shafts provided with driving-pulleys *h* and eccentrics *h'*, for working the sieves B through the springs $h^2$. One of these springs is connected to each side of the lower of each pair of sieves, and is provided with a separate eccentric for working it.

I is a chamber provided with a fan, *i*, driven by the pulley *i'* on the shaft $i^2$, which is supported in suitable bearings in the framework A.

J is an automatic regulating-valve, which keeps the air which passes through the machine always at a uniform velocity, however much its volume may be varied, by placing more of the sieves in communication with chamber I.

K are slats arranged in two separate series between chamber I and the sieves. The volume or indraft of air passing from the sieves to the fan can be regulated by opening these slats, more or less, as occasion requires.

L is an elevator, which conveys coarse middlings from the lower part of the machine to the hopper *l*, at the top and on the same side of it, from whence they descend between the slats, as shown by the arrows in the drawings, and are passed through the bottom sieve again.

M is a division-plate which separates the chamber in which the two bottom sieves work.

N are conveyers worked from the driving-pulley F through a suitable train of gearing. These conveyers remove the purified middlings from the bottom of the machine.

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

1. The combination of the series of sieves B, the series of brushes C, arms *c*, carrying said brushes, upright shafts D, bar *d*, and arms *d'*, arm E, sliding frame *e*, and spur-wheel $e^2$, provided with pin *e'*, for working said sliding

frame, substantially as described and shown, and for the purpose set forth.

2. The combination of the suspended sieves B, the driving-shafts H, provided with eccentrics $h'$, the pitmen $h^2$, the upright shafts D, the brushes C, the arms $c$, carrying said brushes, the bar $d$, arms $d'$ E, sliding frame $e$, and spur-wheel $e^2$, provided with a pin, $e'$, substantially as and for the purpose set forth.

3. The combination of the sieves B, gather-boards $b^2$, return-slides $b^3$, double series of valves K, chamber I, the fan $i$, the elevator L, and the hopper $l$, arranged in a plane intermediate of said valves for returning the coarse middlings a second time to the head of the bottom sieve, substantially as described and shown.

RICHARD ALLEN REW.

Witnesses:
JOHN W. RAUCH,
E. M. RAUCH.