

W. H. FOOTE.  
Dust Collector.

No. 239,755.

Patented April 5, 1881.

Fig. 1.

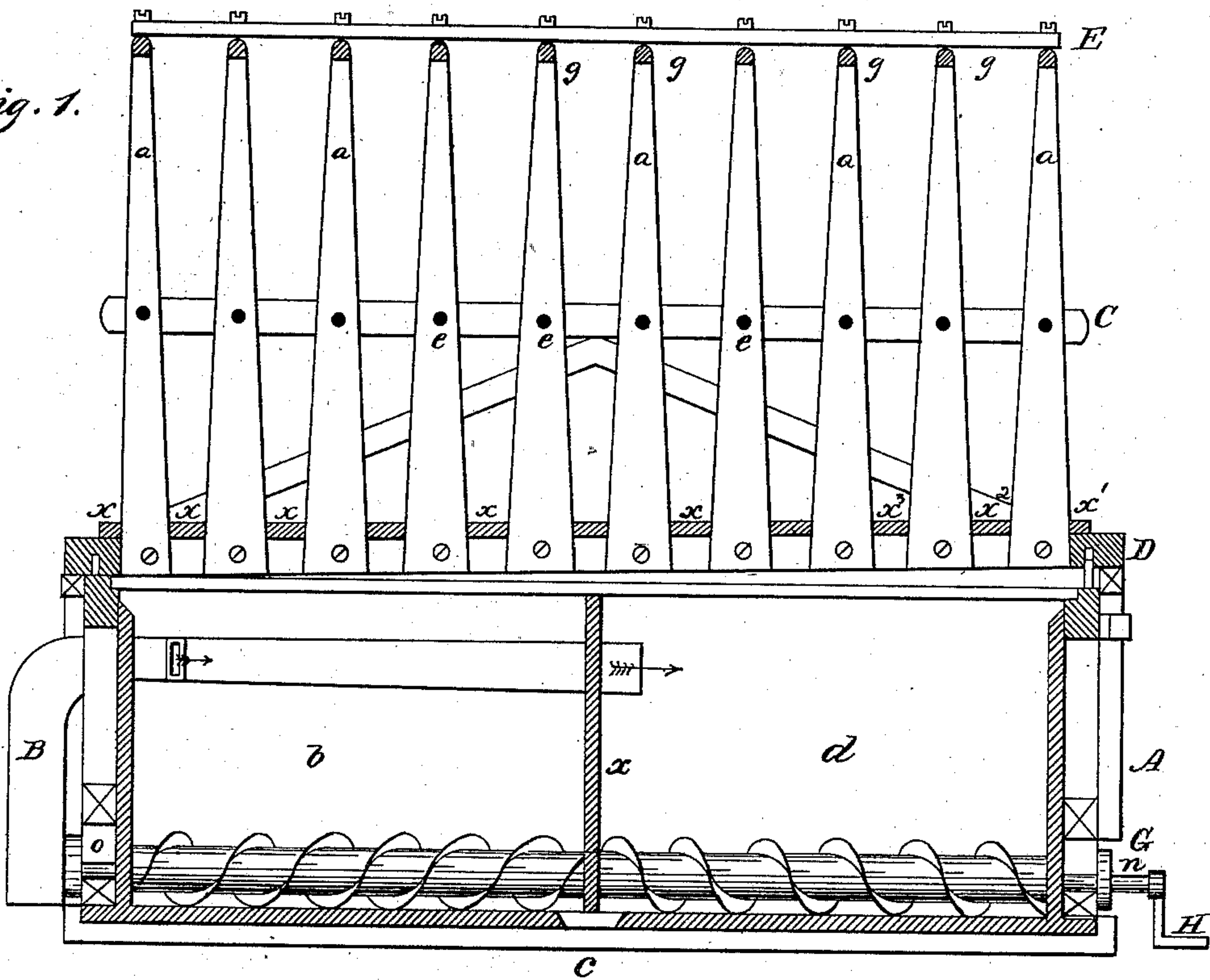
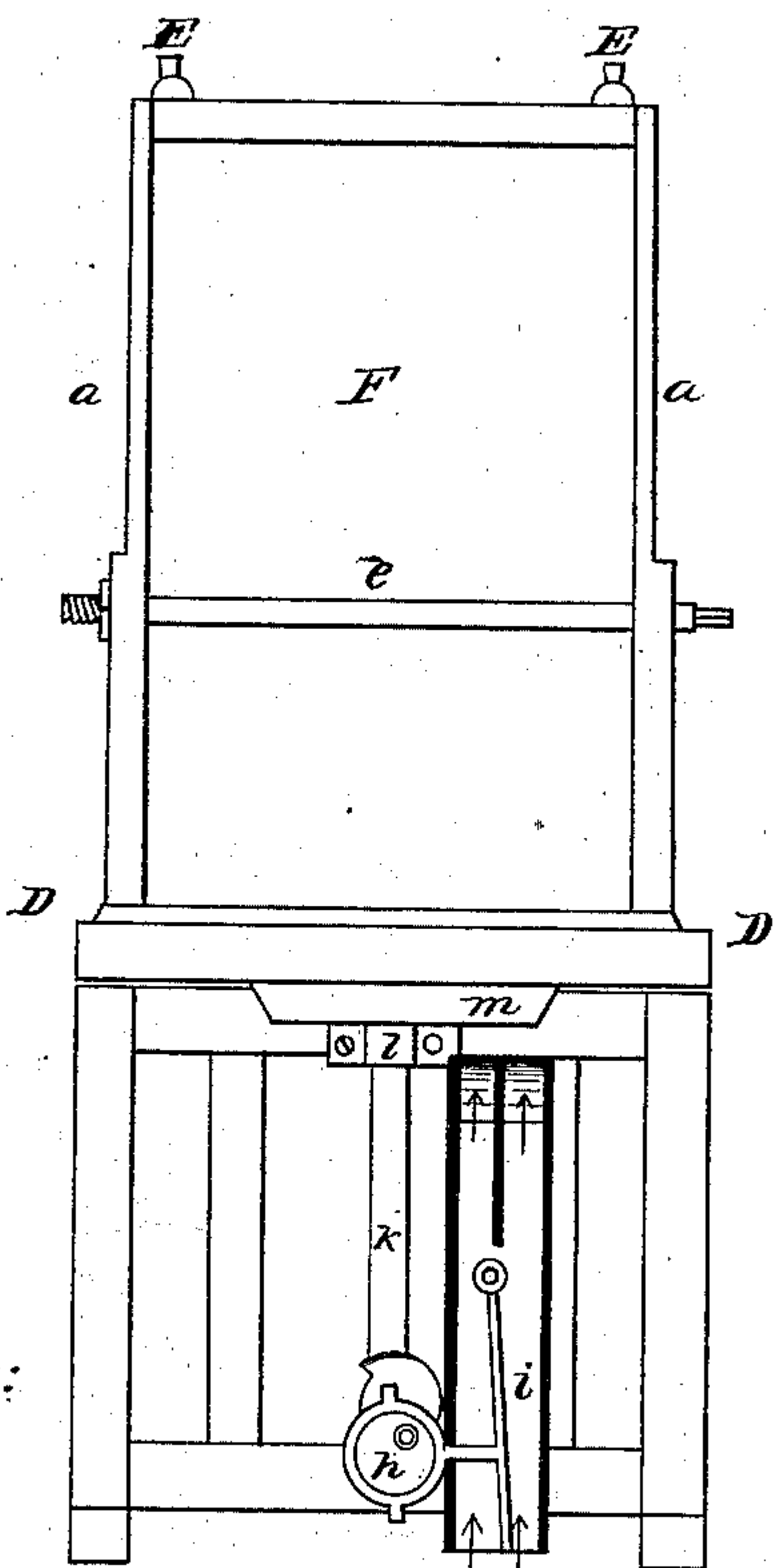


Fig. 2.



Witnesses:

H. N. Low.

J. S. Barker.

Inventor.

William H. Foote  
by W. H. Doubleday  
att'y



# UNITED STATES PATENT OFFICE.

WILLIAM H. FOOTE, OF MINNEAPOLIS, MINNESOTA.

## DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 239,755, dated April 5, 1881.

Application filed February 20, 1880.

*To all whom it may concern:*

Be it known that I, WILLIAM H. FOOTE, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain  
5 new and useful Improvements in Dust-Collectors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to  
10 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.

Figure 1 is a longitudinal vertical section of  
15 a dust-collector. Fig. 2 is an end view of the same.

In the drawings, A represents a box-like receptacle provided with hopper-bottom and divided into two apartments by a partition at  
20 its center, placed as shown in Fig. 1. A conveyer in each section leads to a discharge-opening, *c*, at the center of the bottom.

B is a wind trunk or passage, made double by a dividing-wall within it, and having one  
25 branch opening into the apartment *b* and the other into the apartment *d*. Over this box receptacle is placed a cloth frame-support or multiple-apartment chamber, C, formed of two  
30 sills, D, with end cross-pieces connecting them, and together forming a rectangular frame, which rests upon the upper edge of A.

A series of uprights, *a a a*, are firmly attached to D D, the same number upon each side, at equal distance apart, and facing each  
35 other in pairs. The opposite pairs of these uprights are connected together in pairs by cross-pieces *g g* at their tops. The uprights *a a a* are nearly triangular-shaped, as shown in Fig. 1.

Reaching from side to side of the frame and connecting sills D D are cross-pieces *x x'*,  
40 placed parallel with *g g*, and being of just sufficient width to occupy the space between the uprights *a a a*. These are shown in Fig. 1, and are marked *x x x'*.

A web of cloth just wide enough to reach from one upright *a* to its opposite, is fastened to the inside edge of the cross-piece *x'*, and fastened at its edge to the oblique edge of the first pair  
50 of uprights *a a*, passes over the first cross-piece *g*, and down under the next cross-piece *x*, and

then upward and over the next cross-piece, and so on to the other end of the frame, each pair of the uprights *a a* forming, together with the cloth, a triangular chamber, as will be  
55 readily seen, closed on all sides except its base, which opens into A. Half of these triangular cells or chambers open into *b* and the other half into *d*.

A rod provided with right and left handed  
60 screw-threads at its extremities may be employed to strain the cloth sides of the chambers. *e e e* are these rods, which connect the uprights *a a* each with its opposite neighbor. The cloth covering which I have thus far used  
65 is a closely-woven sheeting; but other kinds may be used without varying the principle of my device. The sills of this multiple chamber are formed to fit and rest upon the upper  
70 edges of A.

The conveyers in *b* and *d* are attached to a  
75 long horizontal shaft, G, and are turned by a pulley, H, on that shaft. As the shaft G turns, an eccentric, *h*, (see Fig. 2,) keyed to it, works a switching-damper, *i*, in B, by means of a  
suitable connecting-rod, and switches the air-current first into *b* and then into *d* alternately, at equal intervals. Two cams, *n* and *o*, are  
80 also keyed at the opposite ends of G, which, by means of lifting-heads *k m*, sliding vertically in bearings *l*, lift first one end of the chamber C and then the other, letting it fall  
back suddenly upon the top of A and jarring it. These falls are so timed that each end of  
85 the multiple chamber C falls at the time when the air-current is cut off from that end.

Having thus set forth the construction of my invention, I will now proceed to describe its operation, which is as follows: The fan, by its rapid motion, creates a current which drives  
90 or sucks all dust and all vapor, if there be any, into and along trunk B, and through it into A, half going into *b* and the remainder into *d*. The air escapes through the cloth sides of the chambers of which C is composed, and  
95 the cloth retains the dust adhering to it. The jarring shakes the dust down upon the conveyer, which discharges it at *c*. The current of air effectually dries all vapor or dampness which, at times, causes the dust and very fine  
100 flour to adhere to the inside of a millstone-curb. The same device serves to retain and

separate the dust (now generally blown into a room known as the "dust-room") discharged by the middlings or purifier.

I do not in this application claim anything  
5 except the specific inventions recited in the claims hereof, preferring to claim all other patentable features in another application, which I have already filed as a division of this case.

What I claim is—

- 10 1. In a dust-collector, two or more air-trunks or air-chambers, each provided with a gate or valve, and thereby adapted to receive alternately the dust-laden air from a middlings-purifier, substantially as set forth.
- 15 2. The divided dust-bin, an air-trunk with

openings, one for each compartment of the chamber, and means, substantially as described, for directing the blast alternately into each compartment, in combination with the shaking-chamber surmounting and communi- 20 cating with the dust-bin, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of February, 1880.

WILLIAM H. FOOTE.

Witnesses:

J. L. PARKER,  
H. J. WILBER.