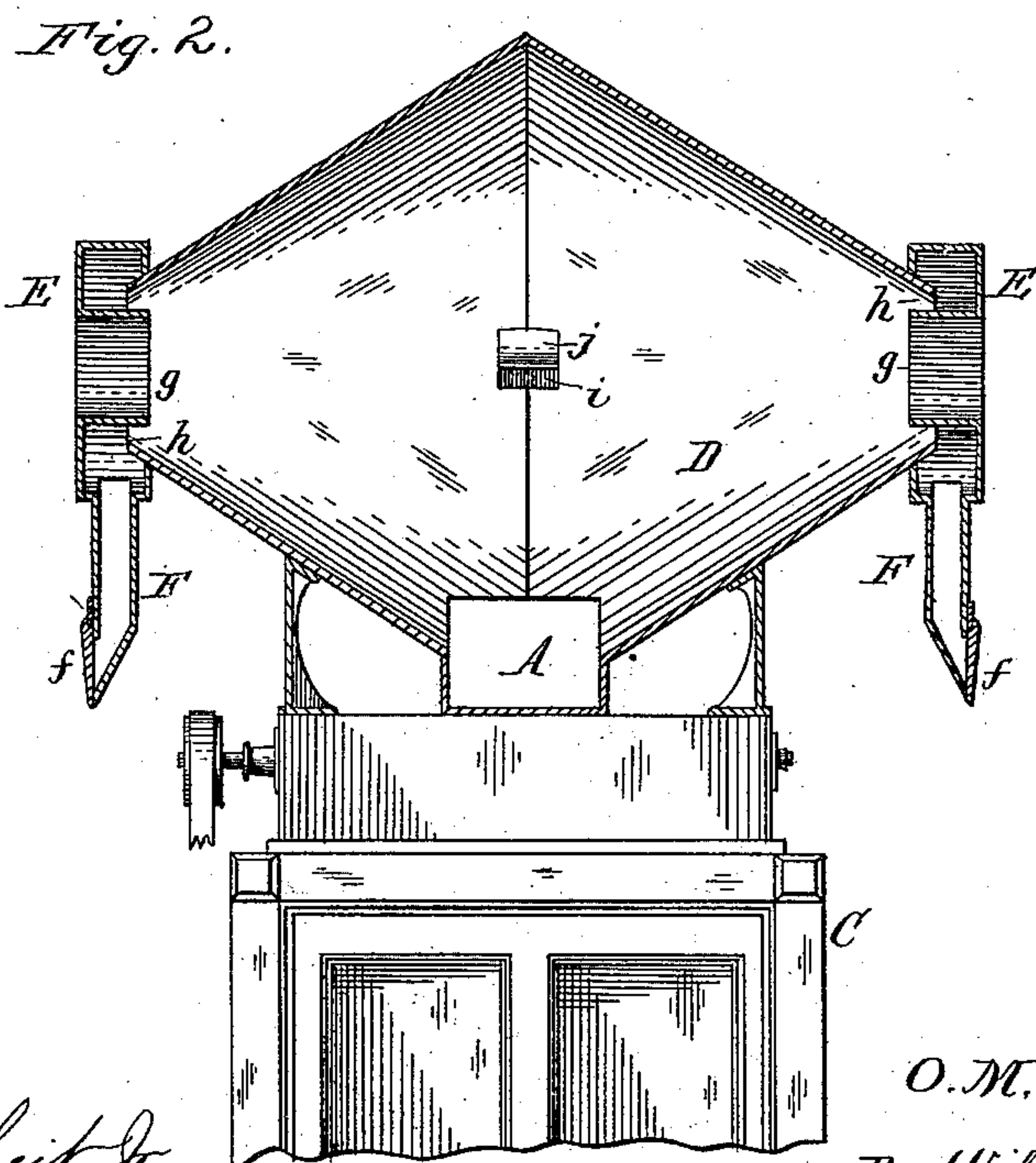
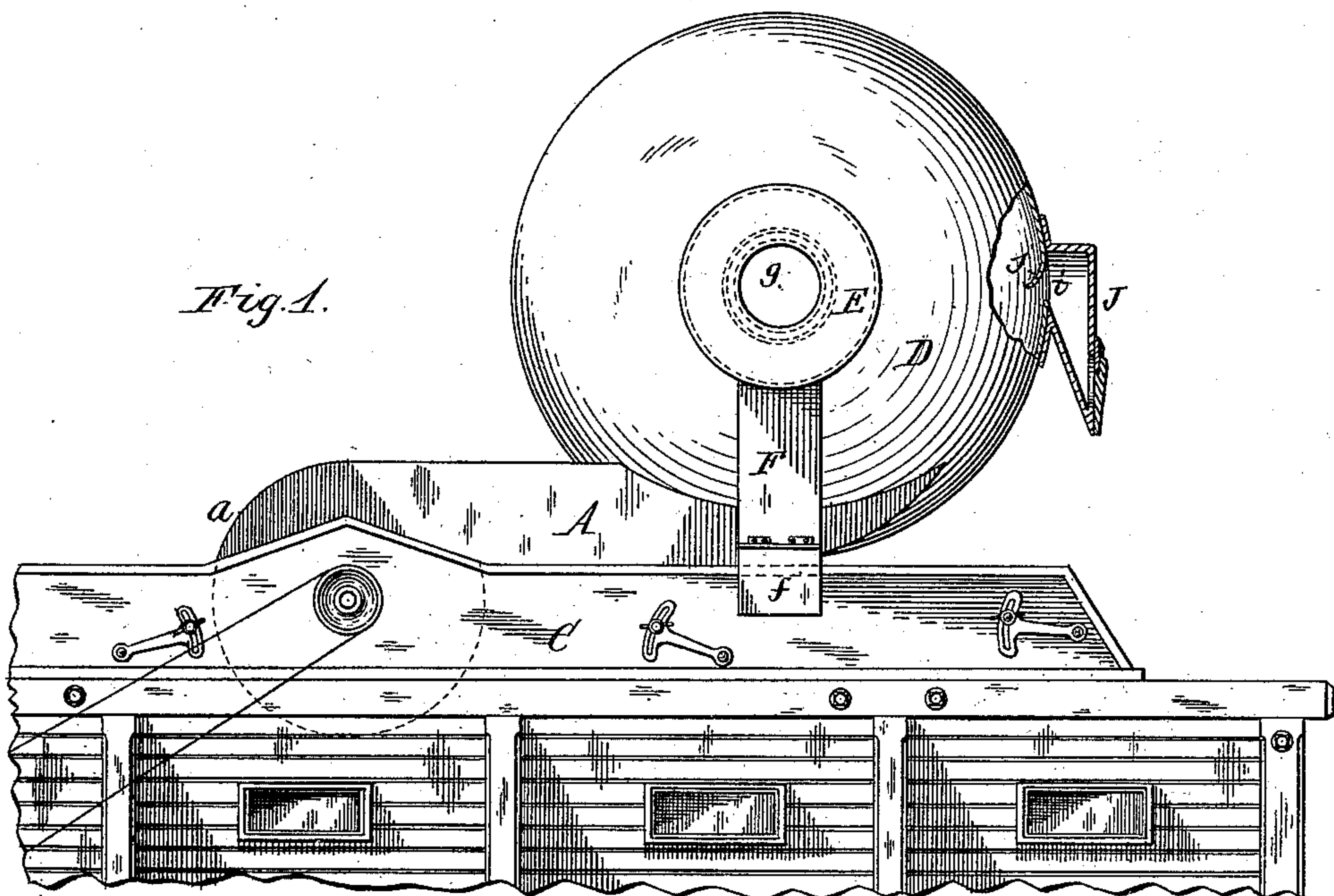


(No Model.)

O. M. MORSE.
DUST COLLECTOR.

No. 373,374.

Patented Nov. 15, 1887.



Witnesses:

Geo. J. Buchheit Jr.
Theodore L. Popp.

O. M. Morse, Inventor.

By Wilhelm Honner.
Attorneys.

UNITED STATES PATENT OFFICE.

ORVILLE M. MORSE, OF JACKSON, MICHIGAN, ASSIGNOR TO THE KNICKERBOCKER COMPANY, OF SAME PLACE.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 373,374, dated November 15, 1887.

Application filed April 18, 1887. Serial No. 235,215. (No model.)

To all whom it may concern:

Be it known that I, ORVILLE M. MORSE, of the city of Jackson, in the county of Jackson and State of Michigan, have invented a new and useful Improvement in Dust-Collectors, of which the following is a specification.

This invention relates to a dust-collector which contains a circular separating-case in which the dust-laden air-current assumes a whirling or gyrating motion, whereby the dust particles are driven to the outer layer of the whirling body of air and against the circular separating-case from which they are discharged into a suitable receptacle, while the purified air escapes in a different direction.

The object of the present invention is to produce a dust-collector of this kind which is very efficient in its operation and simple and compact in construction; and my invention consists of the improvements which will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved dust-collector, partly broken away; and Fig. 2 is a central vertical cross-section of the same.

Like letters of reference refer to like parts in the several figures.

A represents the spout through which the dust-laden air passes, and which is connected with a fan, *a*, by which the air-current is set in motion. As indicated in the drawings, this fan may be mounted upon the deck or cover of a middlings-purifier, C; but I do not wish to limit myself to this application of the dust-collector.

D represents the separating case or chamber of the dust-collector, with which the air-spout A is connected tangentially, or so that the air is caused to whirl or rotate in the case D. The spout A is connected with the middle of the case D, and the latter tapers in opposite directions from the spout A, as clearly represented in Fig. 2.

E E represent dust-receiving chambers, which surround the open outer ends of the case D, and which are provided with depending dust-receptacles F F, from which the dust is discharged through valves *f f* to conveyers or other suitable devices.

g g represent collars secured with their outer ends centrally to the dust-chambers E E, and

projecting into the open outer ends of the case D, forming annular openings *h h* between the ends of the case D and the collars *g*, through which the dust passes from the case D into the chambers E. The collars *g* are open at both ends and form passages through which the purified air escapes from the case D.

The dust-laden air enters the case D through the spout A, and assumes a whirling motion in the case, whereby the dust is thrown against the inner side of the case, and following the case toward its outer ends escapes through the annular openings *h* into the receptacles E, while the air freed from dust escapes through the collars *g*.

i represents an opening formed in the largest portion of the case D, and provided with an inwardly-projecting lip or skimmer, *j*, which intercepts the heavy material—such, for instance, as middlings—moving with the outermost layer of the whirling body of air, and directs this material into a receptacle, J, which is connected with the central portion of the case D. The opening *i* receives this heavy material, while the openings *h* at the ends of the case discharge the dust. In this manner a separation of the heavy valuable material from the dust, which is of less or no value, is effected.

When no separation of the heavy material from the dust is required, the separating-case may be made cylindrical instead of tapering; but I prefer a tapering case, as shown, for the reason that it causes a quicker movement of the dust toward the dust-discharge openings.

I do not wish to claim in this application the construction of the separating-chamber, *per se*, or any other improvement in the dust-collector herein described and shown, except the improvements specifically pointed out in the claims, and reserve the right to claim all other improvements in pending applications heretofore filed by me, especially application, Serial No. 197,307, filed March 31, 1886.

I claim as my invention—

1. In a dust-collector, a circular separating-chamber provided with dust-discharge openings in both ends, dust-collecting chambers surrounding said openings, and escape-conduits for the purified air arranged within said openings, substantially as set forth.

2. The combination, with a dust-separating

chamber tapering from its middle toward both
ends, of a tangential air-inlet spout connected
with the enlarged central portion of the case,
and dust-collecting chambers and air-exits ar-
5 ranged at both ends of the case, substantially
as set forth.

3. The combination, with a dust separating
chamber tapering from its middle toward both
ends and provided with dust-escape openings
10 and air-exits at both ends, of an air-inlet spout
connected with the enlarged central portion

of the separating chamber, and a dust-recep-
tacle communicating with the enlarged cen-
tral portion of the separating-case by an open-
ing provided with an inwardly-projecting lip, 15
substantially as set forth.

Witness my hand this 5th day of April,
1887.

ORVILLE M. MORSE.

Witnesses:

CARL F. GEYER,
F. C. GEYER.