

(No Model.)

O. M. MORSE.
DUST COLLECTOR.

No. 408,987.

Patented Aug. 13, 1889.

Fig. 1.

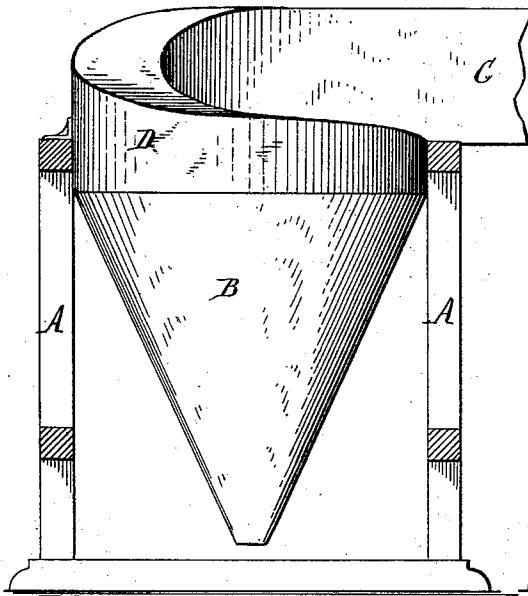


Fig. 3.

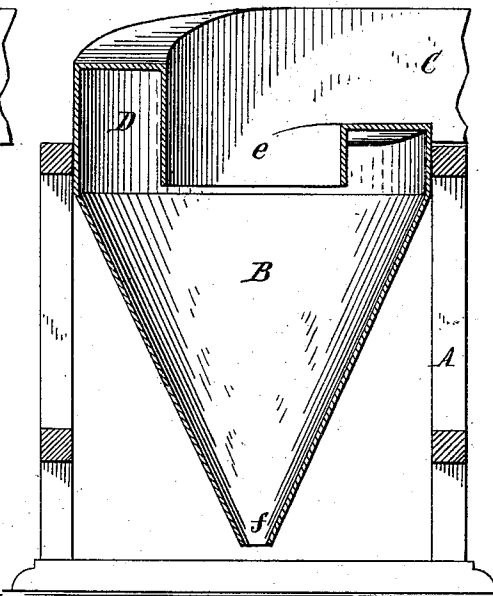


Fig. 2.

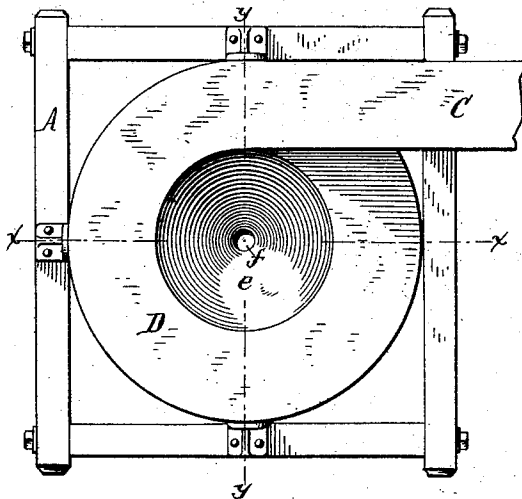
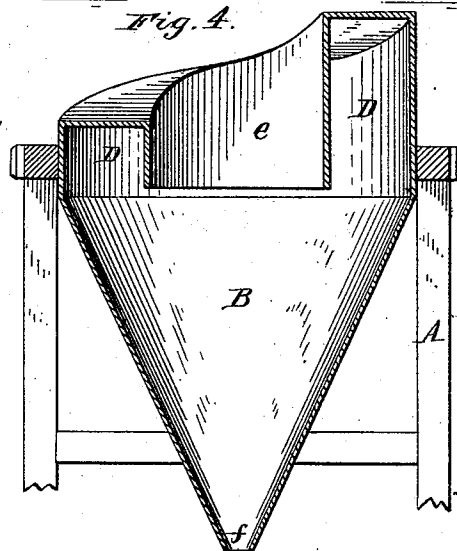


Fig. 4.



Witnesses:

Theo. L. Popp
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UNITED STATES PATENT OFFICE.

ORVILLE M. MORSE, OF JACKSON, MICHIGAN, ASSIGNOR TO THE KNICKER-
BOCKER COMPANY, OF SAME PLACE.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 408,987, dated August 13, 1889.

Application filed September 2, 1887. Serial No. 248,584. (No model.)

To all whom it may concern:

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

This invention relates to a dust-collector which is provided with a separating-chamber, into which the dust-laden air is delivered
10 from a tangential inlet-spout, whereby the air is caused to assume a whirling or gyrating motion in the separating-chamber. This motion of the air causes the solid particles to pass into the outer layer of the whirling body
15 of air and to be deposited against the inner surface of the separating-chamber, which latter is provided with a discharge-opening for the separated dust and an escape-opening for the purified air. A dust-collector of this kind
20 is described and claimed in an application for patent filed by me March 31, 1886, Serial No. 197,307.

The object of the present invention is to compel all the air and dust particles to take
25 part in the whirling motion of the vortex in the separating-chamber before any of the air particles reach the air-exit passage, and to impart to the dust particles at the same time a motion in the direction of the dust-dis-
30 charge opening.

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
35 a side elevation of my improved dust-collector. Fig. 2 is a top plan view thereof. Figs. 3 and 4 are vertical sections in lines x and y y , Fig. 2, respectively.

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

A represents the frame of the machine, B the tapering separating-chamber, and C the supply-spout through which the dust-laden air passes to the dust-collector.

45 D represents a spiral passage or conduit which connects the spout C with the large end of the tapering chamber B, and which surrounds the tubular passage e , through which the purified air escapes from the ma-
50 chine.

f represents the dust-discharge opening formed at the apex or small end of the tapering chamber B.

The dust-laden air passes from the supply-spout C into the spiral passage D, and thence
55 into the large end of the tapering separating-chamber B. As the air-current passes through the spiral passage D, all of the air and dust particles take part in the whirling motion, so that this motion is fully estab-
60 lished when the dust-laden air reaches the large end of the tapering separating-chamber. The whirling motion continues in the tapering chamber, whereby the dust is driven to the discharge-opening f while the purified
65 air escapes from the inner portion of the vortex through the central exit-passage e , which is surrounded by the spiral passage D. The latter imparts to the dust and air particles a motion toward the dust-discharge opening f ,
70 which reduces the tendency of these particles to pass directly to the exit-passage e .

I do not wish to claim in this application any patentable features except those specifically set forth in the claims, and I reserve the
75 right to claim all other patentable features in other applications for patent heretofore filed by me, particularly the following applications: Serial No. 197,307, filed March 31, 1886, and Serial Nos. 204,684 and 204,686, filed
80 June 9, 1886.

I claim as my invention—

1. The combination, with the separating chamber having a dust-discharge opening and provided at one end with an exit-pas-
85 sage for the purified air, of a supply-spout and a spiral passage connecting said spout with the separating-chamber and surrounding the air-exit passage, substantially as set forth.
90

2. The combination, with the tapering separating-chamber provided at its large end with an exit-passage for the purified air and at its small end with a dust-discharge opening, of a supply-spout and a spiral passage
95 connecting said spout with the large end of the tapering chamber and surrounding the air-exit passage, substantially as set forth.

Witness my hand this 29th day of August, 1887.

ORVILLE M. MORSE.

Witnesses:

C. H. BENNETT,
SAML. H. CAMP.