(No Model.)

O. KUTSCHE.

DUST COLLECTOR.

No. 447,333. Patented Mar. 3, 1891.

Fig. 1.

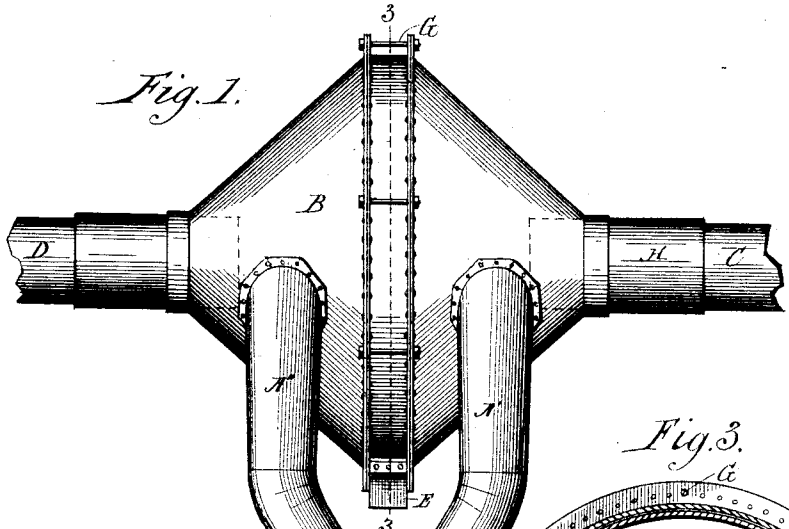


Fig. 3.

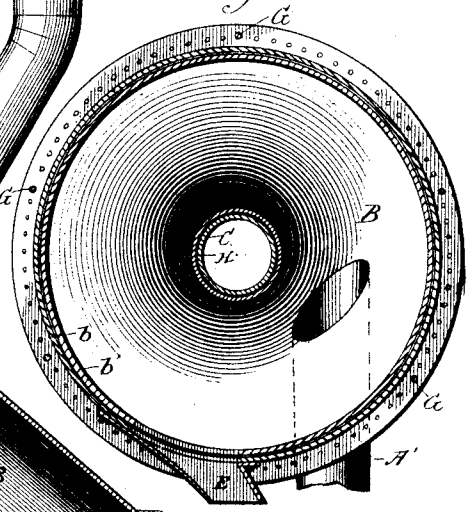
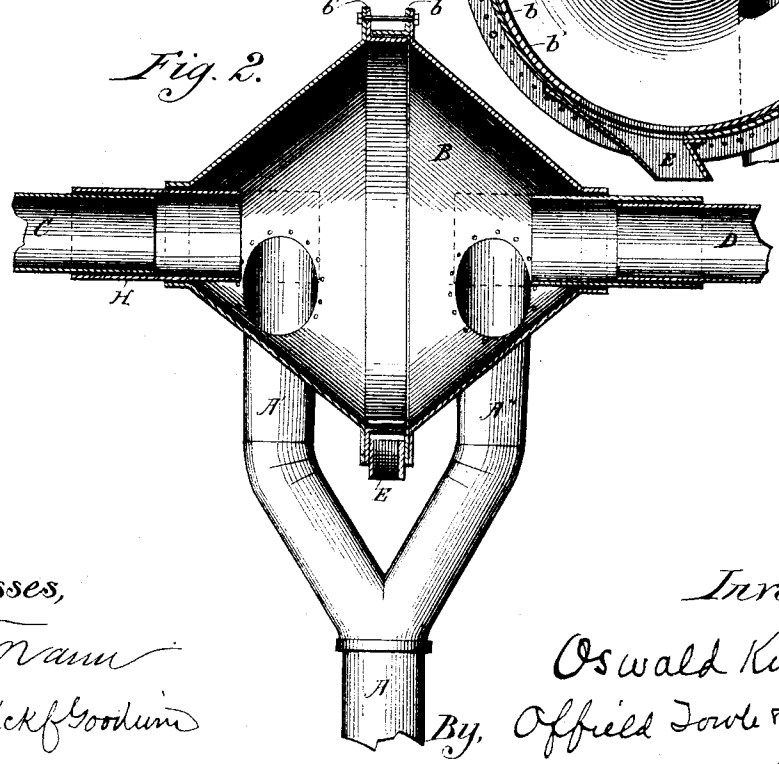


Fig. 2.



Witnesses,

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UNITED STATES PATENT OFFICE.

OSWALD KUTSCHE, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE ALLINGTON & CURTIS MANUFACTURING COMPANY, OF MICHIGAN.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 447,333, dated March 3, 1891.

Application filed October 11, 1886. Serial No. 215,946. (No model.)

To all whom it may concern:

Be it known that I, OSWALD KUTSCHE, a citizen of the United States, residing in the city of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Dust-Collectors, which I desire to protect by Letters Patent of the United States, and of which the following is a specification.

My invention relates to that class of dust-collectors in which the dust is separated from the air by centrifugal force and projected in one direction while the purified air is permitted to escape in another.

In the drawings annexed and forming a part of this specification, Figure 1 is a perspective view, Fig. 2 a central vertical section, and Fig. 3 a vertical cross-section on the line 3 3, Fig. 1, of my improved apparatus.

The dust-laden air is delivered through a main pipe A and its branches A′ A″ to a double cone-shaped chamber B, at the two apexes of which are discharge-pipes C and D for the air, and at its base the vent-orifice E for the dust and other material to be separated from the air in the chamber. The pipes A′ A″ are so fitted to the wall of the chamber that the dust-laden air as it enters has a tangential motion, and therefore circles about the walls of the chamber, completing one or more full revolutions before it passes out through the air-pipes C and D. As it starts upon these revolutions the dust and other waste which it contains is massed by centrifugal force against the curved walls of the chamber. As the mass moves rapidly around it has a tendency to move toward the center of the chamber, because of the greater diameter of the latter at that point, and when it reaches the center it is projected out through the vent-orifice E, the purified air meanwhile passing out through the pipes C and D.

The chamber B is formed of two conical pieces B′ B″, flanged at their bases, between which are placed two overlapping pieces of angle-iron *b b′*, the whole being held together by the bolts G passing through the flanges. That I may be able to regulate the air-pressure in the chamber I propose that the discharge-pipes C and D shall be adjustable in and out of the chamber, as indicated by broken lines, and for convenience in making this adjustment and to avoid moving the entire length of the pipes C and D, I make use of the sliding collars H, which can be pushed in or out to effect the adjustment without disturbing either of the discharge-pipes; but I do not claim said collar as my invention. Neither do I claim herein the adjustable discharge-pipes, as the same are claimed in my application, Serial No. 215,947, now pending.

The apparatus described makes use of the principle of centrifugal force both to separate the dust from the air-current and mass it against the wall of the chamber and also to direct its course of motion to the exit-orifice, this being accomplished by expanding the circle of rotation or centrifugal swing of the current in the vicinity of the vent-orifice, the waste or dust being thus impelled toward the orifice by its own centrifugal momentum.

While I have shown in the drawings and described a double-cone-shaped separating-chamber, it is apparent that one of the cones with its air-inlet and air-outlet may be omitted and the place thereof supplied by a suitable closure for the remaining cone.

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

1. In a dust-collector, the combination, with a cone-shaped separating-chamber, of a delivery-pipe entering the side of said chamber tangentially at a point between the base and apex thereof, said chamber having an air-outlet at the apex and a dust-discharge opening at the base, substantially as described,

2. The combination of a delivery-pipe for dust-laden air and a double-cone-shaped separating-chamber provided with outlets for purified air at its two apexes and an orifice for dust or waste at its middle, said pipe being forked and debouching into the chamber tangentially midway between the base and apex of each cone.

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Witnesses:

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