(No Model.)

2 Sheets—Sheet 1.

O. KUTSCHE.

DUST COLLECTOR.

No. 414,980. Patented Nov. 12, 1889.

Fig. 1.

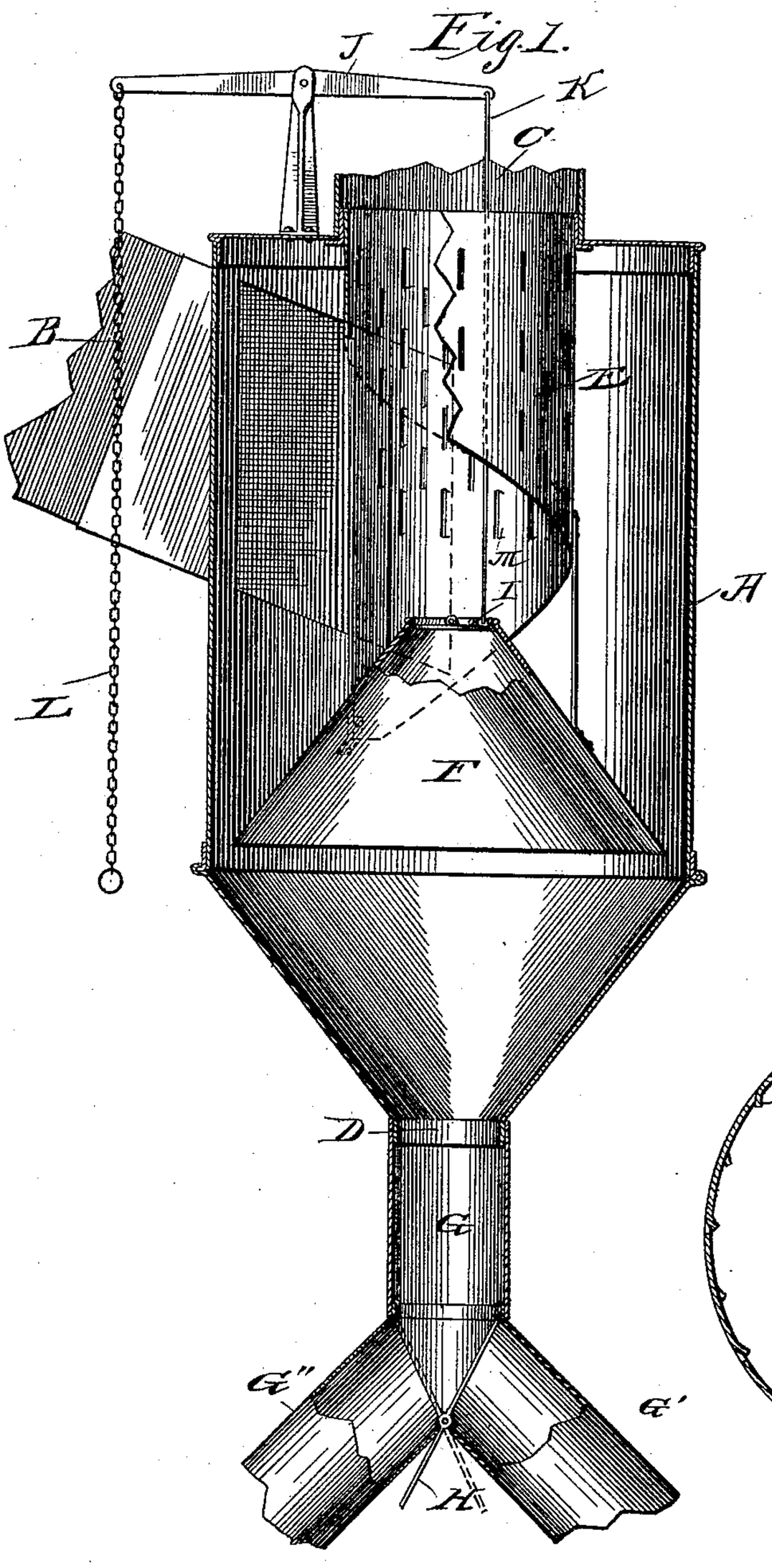
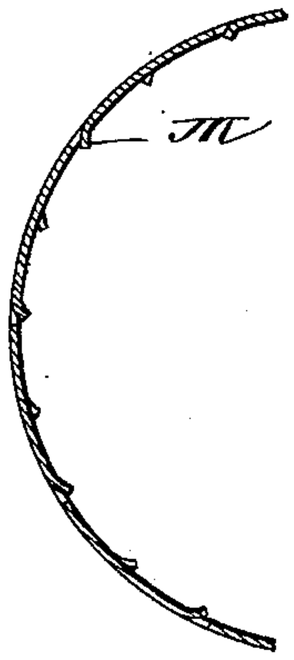


Fig. 2.



Witnesses,
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(No Model.)

2 Sheets—Sheet 2.

O. KUTSCHE.

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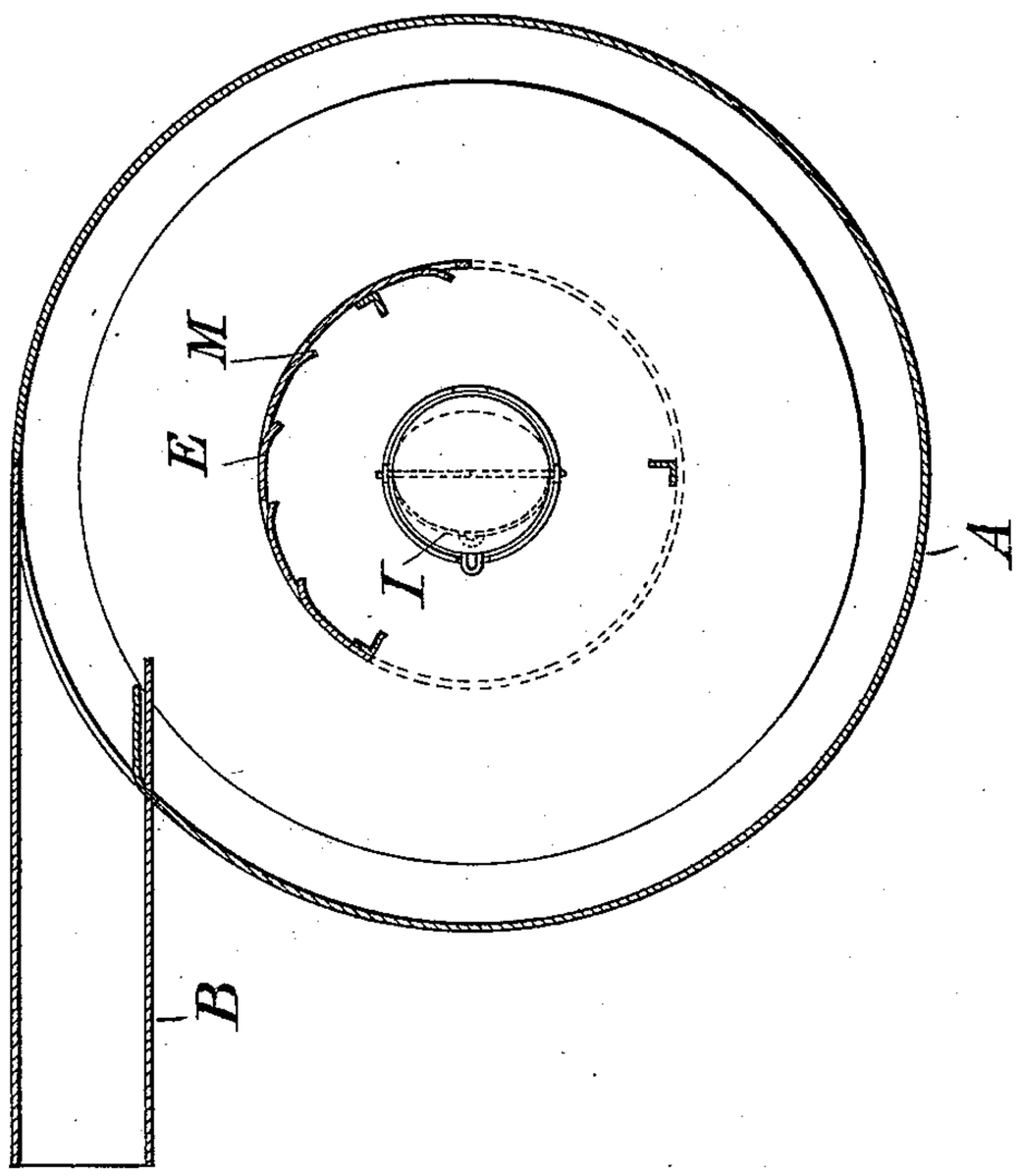
No. 414,980. Patented Nov. 12, 1889.

Fig. 3,



Attest:
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Inventor:
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UNITED STATES PATENT OFFICE.

OSWALD KUTSCHE, OF CHICAGO, ILLINOIS.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 414,980, dated November 12, 1889.

Application filed April 25, 1887. Serial No. 236,019. (No model.)

To all whom it may concern:

Be it known that I, OSWALD KUTSCHE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements 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 machines described in an application filed by me October 11, 1886, Serial No. 215,947, for separating dust from air by utilizing the principle of centrifugal motion, and has for its special object the construction of an apparatus by which I am enabled to separate the dust from the air and feed it either to a shaving or settling room, or directly to the boiler-furnace of the factory.

In the drawings annexed, illustrating this invention and forming a part of this specification, Figure 1 is a side elevation, partly in section, of my improved apparatus. Fig. 2 is a detail on an enlarged scale. Fig. 3 is a transverse sectional view of the device, showing two positions of the valve.

A is a cylindrical separating-chamber, funnel-shaped at its base, of the kind shown in my previous application heretofore referred to.

B is an inlet-pipe conveying the current of air charged with dust and other waste to the separating-chamber; C, the outlet for air freed from dust; D, the dust outlet or vent; E, the downwardly-projecting guard fitted to the air-outlet, and F the cone-shaped screen between the air-outlet and the dust-vent.

A discharge-pipe G, leading from the dust-vent, has two branches, one of which G′ leads to the shaving or settling room, and the other G″ to the furnace. A switch or valve H, pivoted at the separating-point of these two branches, serves to direct the current of waste either to the one or the other, according to its position. I find it desirable, though not essential, to provide means for increasing the pressure upon the discharge-pipe when the feed is made to the furnace instead of to the shaving-room, and this for the reason that generally it is convenient to make the discharge-pipe to the furnace of greater length than that of the shaving-room, delivery through it therefore requiring greater force. In order to thus regulate the pressure, as desired, I provide at the top of the screen F the valve I, pivoted therein, adapted to take either a horizontal position, as shown, or a vertical position, or a position intermediate between these positions, according to the adjustment of the pivoted lever J, with which the valve is connected by rod K, the position of this lever being governed by chain or rope L and having a normal tendency to cause the valve to assume a vertical position by reason of the preponderating weight of the inner end of the lever J. When this lever is opened, an opportunity will be given to air which passes down through the space between the screen F and the sides of the cylinder to return upward and out through the discharge-outlet. When the valve is closed, this outlet for this air is cut off and the pressure through the discharge-pipes is increased. When, therefore, it is desired to deliver the waste to the furnace, the valve H should be set as shown in the drawings and the valve I closed, as shown.

Another feature of my present invention consists in the peculiar construction of the downwardly-extending guard E. The lower end of this guard, instead of being cut squarely off, is spiral in shape, the longest edge of the guard being placed directly opposite to the mouth of the inlet-pipe, so that dust may be prevented from entering the outlet by reason of the momentum which it possesses as it comes into the chamber, and the spiral contour of the guard on the side remote from the inlet-pipe giving an opportunity for air which has been freed from dust to freely enter the outlet. I find that this construction gives much better results than the form of inwardly-projecting pipe heretofore used by me, and I suppose for the reason that it combines the capabilities of entirely preventing the entrance of dust into the outlet-pipe under the influence of its initial momentum as it enters the chamber and of affording a free entrance to the outlet for the purified air. To provide for the removal of any dust which may reach this guard E, I arrange in it slits M, with inwardly-projecting lips, as shown more clearly in Fig. 2, by which the dust will be caught as it slides along the interior surface of the guard E under the rotary impulse which it retains until it leaves the separating-cham-

ber, and caused to pass out and drop down without the guard E.

I do not claim herein a dust-collector constructed with an imperforate peripheral wall having a tangential inlet-spout for the dust-laden air and provided at one end with a discharge-opening for the purified air and at the other with a discharge-opening for the separated dust, nor such a chamber provided with a downwardly-inclined inlet-spout, said matter being claimed in said prior application. Neither do I claim herein a screen arranged between the air and dust outlets, said matter being shown, described, and claimed in application filed by me October 9, 1886, Serial No. 215,793.

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

1. In a dust-collector, the combination of a separating-chamber provided at one end with an air-outlet and at the other with a dust-vent, an inlet-pipe entering said chamber near its air-outlet, a cone placed between the inlet-pipe and the dust-vent, and a valve in said cone for governing the passage of air which has passed to the dust-vent side of the cone back to the air-outlet, substantially as set forth.

2. In a dust-collector, the combination of a separating-chamber, an inlet-pipe, an air-outlet, and guard projecting inwardly from the outlet, said guard projecting downward past the inlet on the side opposite thereto and having its opposite side cut away to permit free ingress of air, substantially as set forth.

3. The combination of a circular separating-chamber, said separating-chamber being provided with a dust-vent and an air-outlet, an inlet-pipe, a discharge-pipe for waste having two branches, one leading to a settling-room and the other to the boiler-furnace, means for directing the flow through either of the branches desired, and a valve located centrally of the chamber for increasing or diminishing the effective size of the air-outlet, substantially as set forth.

OSWALD KUTSCHE.

Witnesses:
FREDERICK C. GOODWIN,
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