

(No Model.)

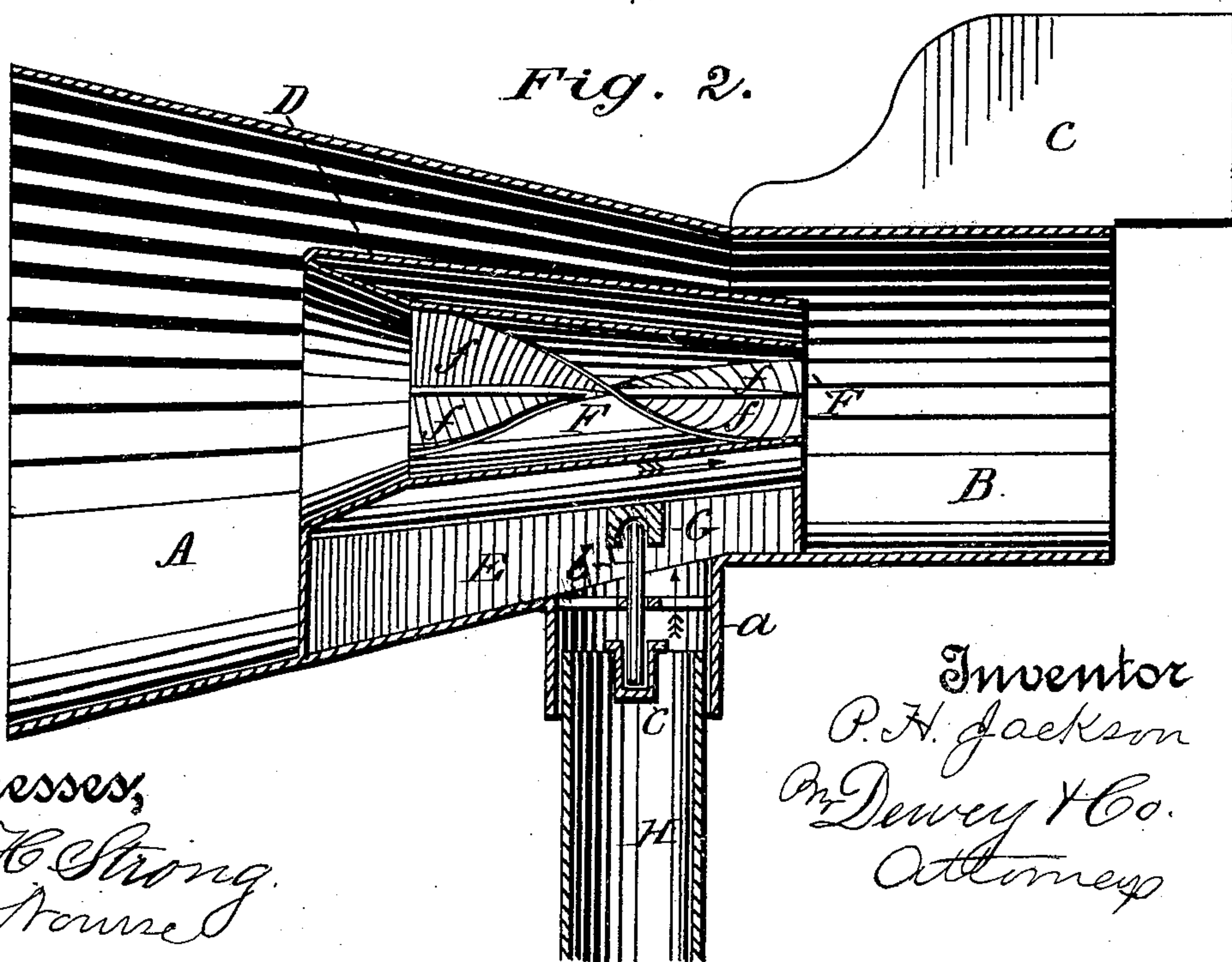
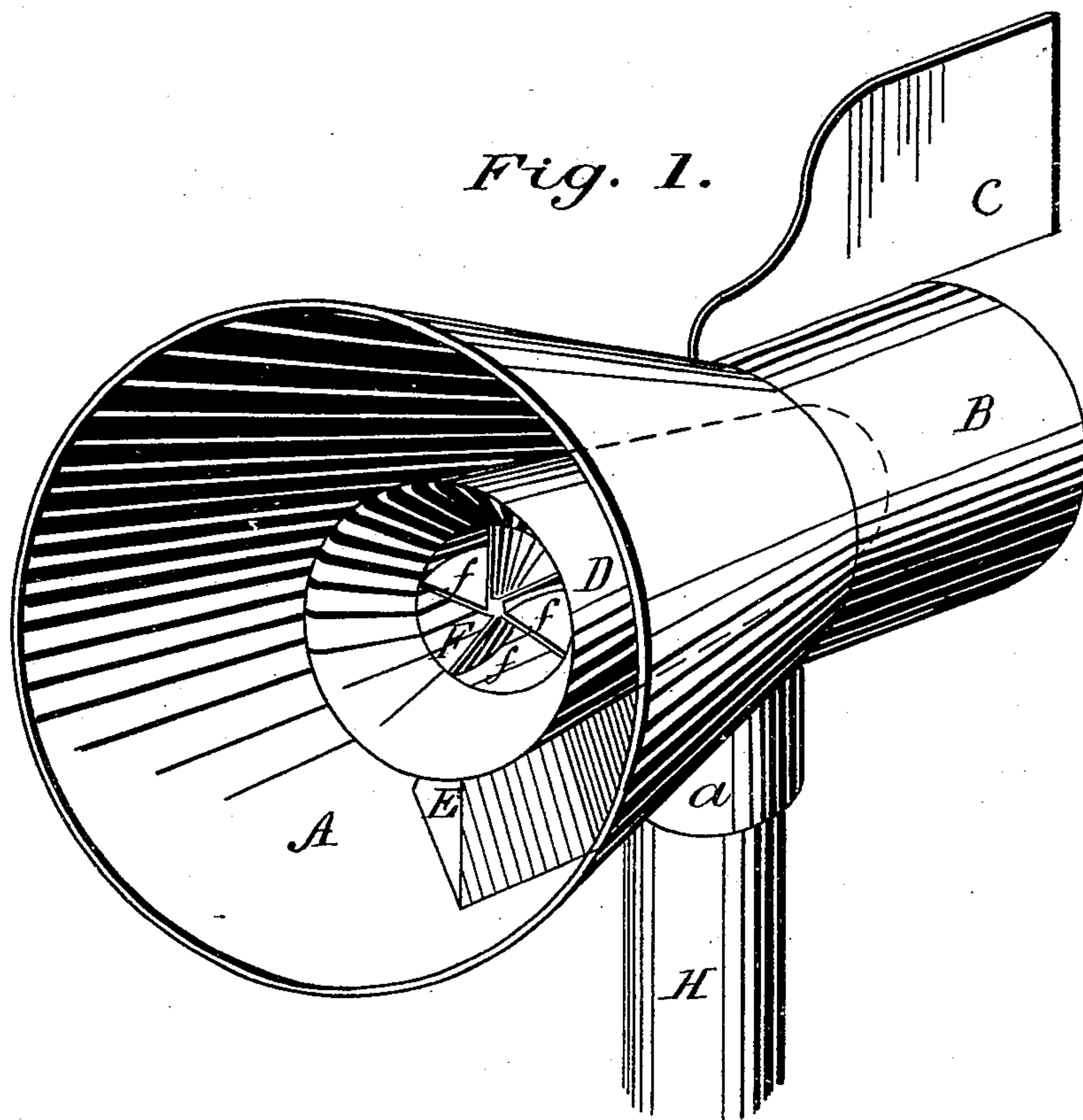
2 Sheets—Sheet 1.

P. H. JACKSON.

VENTILATOR.

No. 265,322.

Patented Oct. 3, 1882.



Witnesses,
Geo. H. Strong.
L. H. Stouffer.

Inventor
P. H. Jackson
By Dewey & Co.
Attorneys

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2 Sheets—Sheet 2.

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Fig. 3.

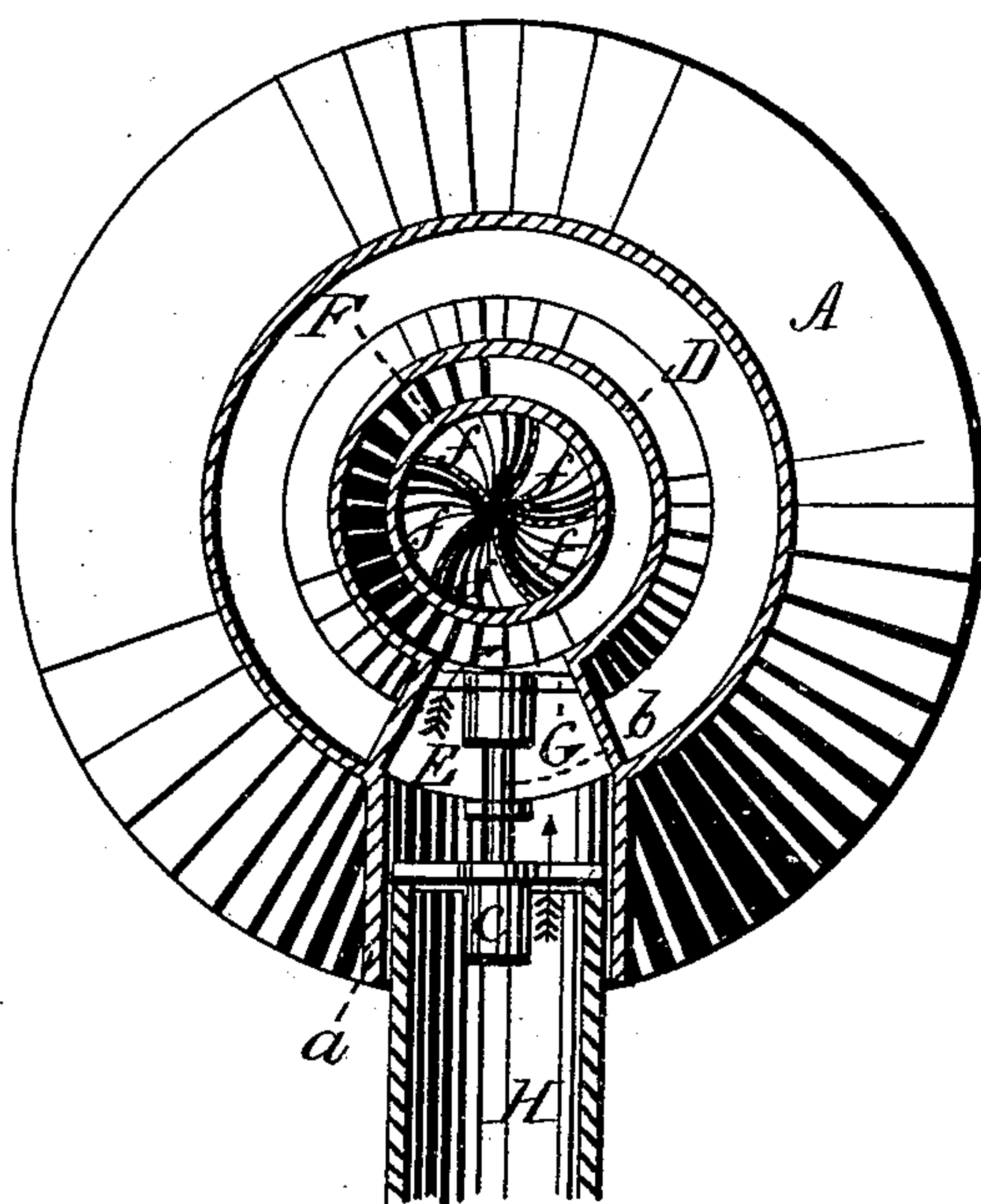
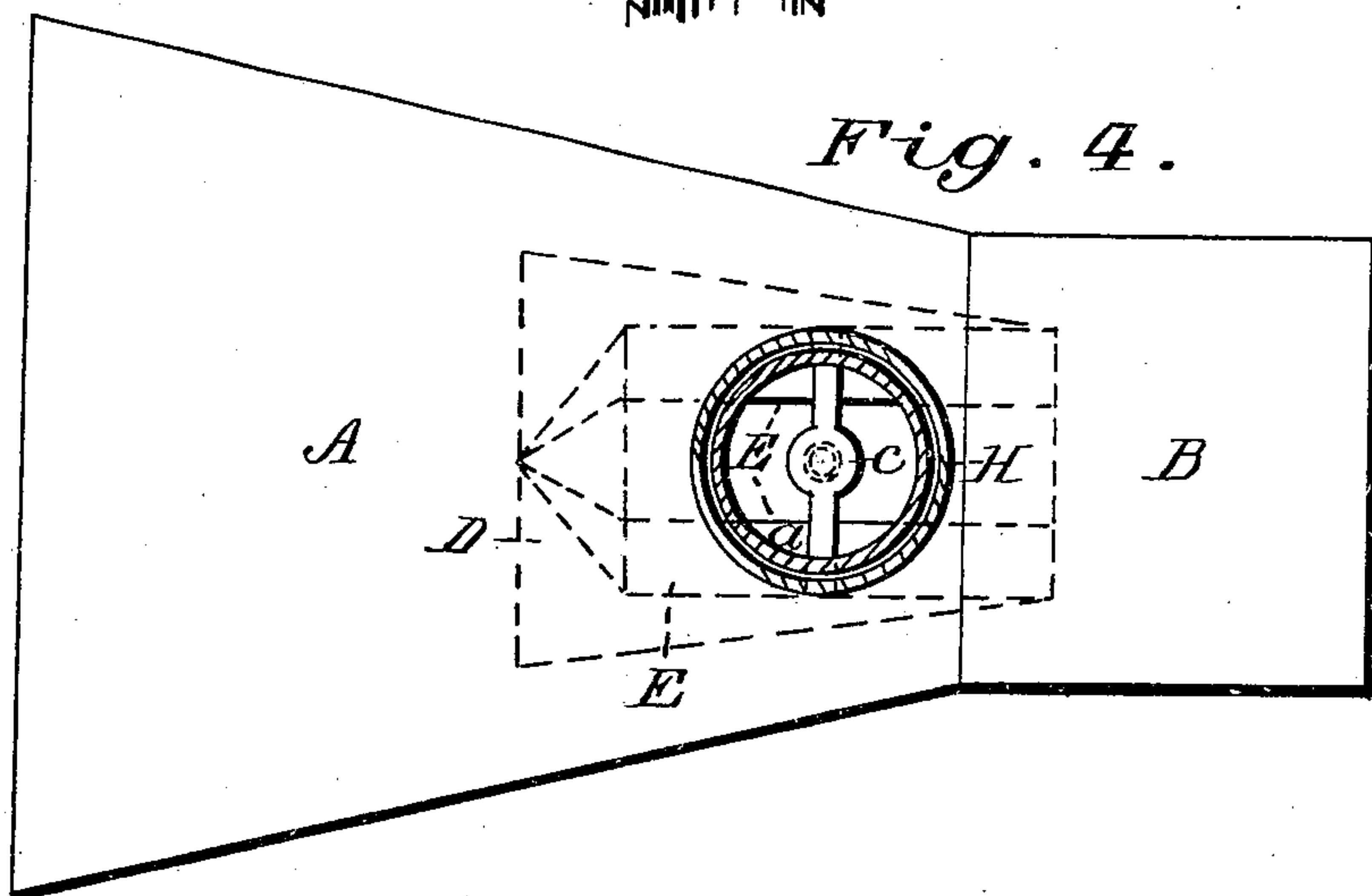


Fig. 4.



Witnesses,

Geo. H. Strong.
Chas. H. Hourse

Inventor

P. H. Jackson
By Dewey & Co.
Attorneys

UNITED STATES PATENT OFFICE.

PETER H. JACKSON, OF SAN FRANCISCO, CALIFORNIA.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 265,322, dated October 3, 1882.

Application filed July 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, PETER H. JACKSON, of the city and county of San Francisco, State of California, have invented an Improved Ventilator; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improved ventilator for soil-pipes, chimneys, flues, &c., or for any place in which impure air or foul gases are liable to generate, or wherein there is imperfect ventilation.

My invention consists in the provision of means for inducing an independent draft or current in such relation with the body of impure or foul air or gas that a part shall surround and another part be inclosed by said body of impure or foul air or gas, whereby it may be acted upon to a better advantage, as I shall show. The means which I have adapted to this end consist in a main hollow conical casing or shell, in which is supported a second and smaller conical shell or casing, whereby an air-space is formed between it and the main casing. In this second casing is another hollow conical casing, the base of which has about the same diameter and is formed to the base of the second casing. Its frustum is smaller and extends to the rear end of the second casing, but is not joined thereto, thus forming a space between it and the said casing, said space opening out to the rear. The device is swiveled upon the top of the soil pipe or flue, the foul or heavy air or gas from which is drawn through a proper induction pipe or channel into the space between the second conical casing and the interior one. A current of pure air passes through the outer and innermost conical casings, and at the rear end the outer current surrounds and the inner is inclosed by the body of foul air which their passage has induced from the soil pipe or flue to escape through the space between the second casing and the inner casing. To provide for an increased draft I provide the casings, or one of them, through which the pure air passes with screw-flanges upon their inner surface.

The object of my invention is to provide a perfect ventilation.

The general principle of operation is well known and needs but a short reference.

In pipes wherein foul air or gas has accu-

mulated, or in which there is imperfect draft, the air, being heavy, will not pass off. In all ventilators of this class an independent draft is effected in such relation with the body of foul or heavy air as to cause the latter, by induction, to rise and clear the pipe. In some devices the body of foul air is surrounded by and in others it surrounds the actuating draft or current, in either case but imperfectly inducing the latter, as it acts upon one edge only; but in my construction I combine both features—surrounding and being inclosed by the air to be induced—whereby the whole body of the latter is acted upon and drawn out.

Referring to the accompanying drawings, Figure 1 is a perspective view. Fig. 2 is a longitudinal section. Fig. 3 is a cross-section. Fig. 4 is a plan, looking up.

Let A represent a hollow conical casing or shell the frustum of which terminates in a pipe, B, which is, as usual, provided with a vane, C. Within the main or outer casing, A, is a second casing, D, much smaller in diameter and length than the main casing, so that a clear space is left surrounding it. This casing D is supported by a casing or box, E, the base of which rests upon the inside of the main casing. The walls of this supporting-casing are sloped from the base toward an apex, and its ends are closed, its forward end being pointed or beveled. This casing opens through the length of its top into casing D, and has an inlet through the base of the main casing, which is furnished with a short joint of pipe, *a*, as shown in Figs. 1 and 2.

F is an inner casing, here shown as tapering in shape, and provided with a flaring mouth or base, which has about the same diameter as the base of casing D. The two bases are joined together, so that the front or base of the casing D is completely closed, while the mouth of casing F is open. The frustum of the casing F is smaller than that of D, so that, as shown in Fig. 2, a space is left between the two, closed at the front but open at the rear. It is into this space that the supporting-casing E opens.

G is a cross-bar with a socket to receive a pivot-pin, *b*, which is supported in a step, *c*, in a cross-bar in the top of a pipe, H, which here may represent the soil-pipe. This is a means for

swiveling the device upon top of the pipe in order that it may always be in the wind.

Within the inner casing, F, I have a number of spiral flanges, *f*, to increase the force and effect of the draft in passing through. These I may also put upon the inside of the main or outer casing, A, with like effect.

The operation of my device is as follows: Being swiveled on top of the soil-pipe and provided with a vane, it will always stand in the wind. The air passes in at the open mouth of the main casing, and is divided, one portion passing around upon the outside of casing D and the other passing through the inner casing, F. By the shape of the casings and confining the air it passes through in a draft or current, and, rushing past the open end of the space between the casings D and F, induces, by producing a partial vacuum in said space, the foul or heavy air within the soil-pipe to rise. This foul air passes up through the box-casing E into the space between casings D and F, and thence out the rear end. Here it is acted upon both from the outside and from the inside by the pure-air currents, and carried away by them with much force and efficacy. A more perfect ventilation is thus formed than if but a single current met the foul air either from without or within. In the former case it would affect only the edge of the body of foul air, and have a tendency to blow it down within the pipe B and prevent its free escape. In the latter case it would have a tendency to do the same thing from within; but in my construction it is taken from both sides and effectively dispersed. A better induction in the first place is obtained by so completely inclosing the foul-air space, and a stronger draft is produced. The spiral flanges in the air passages add to the effect by throwing the air out in a whirl and dispersing the foul air. The box-casing E, with its sloping sides and pointed front, offers the least resistance to the passage of the outer current.

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

1. In a ventilator for soil pipes, flues, &c., an outer casing and an inner casing, open at

both ends and forming air-passages, in combination with an intermediate casing closed at its forward end and open at its rear end, forming between itself and the inner casing a space or passage between the two air-passages, and in relation with the soil pipe, flue, &c., substantially as and for the purpose herein described.

2. In a ventilator for soil pipes, flues, &c., the outer or main conical casing, A, in combination with the casing D and the central casing, F, between which and casing D a space is formed closed at the front and open at the rear, and a connecting-casing, E, opening from the soil pipe or flue into the space between the casings D and F, substantially as and for the purpose herein described.

3. In a ventilator for soil pipes, flues, &c., the outer or main conical casing, A, in combination with the conical or tapering casings D and F, between the walls of which a space is formed closed in front and open at the rear, said casing F having spiral flanges *f* upon its inner surface, and a connecting casing opening from the soil-pipe into the space between the casings D and F, substantially as and for the purpose herein described.

4. In a ventilator for soil pipes, flues, &c., the outer or main conical casing, A, and the interior casings, D and F, between the walls of which a space is formed, in combination with the connecting-casing E, having sloping sides and a pointed or beveled front, substantially as and for the purpose herein described.

5. In a ventilator for soil pipes, flues, &c., the conical or tapering interior casing, F, having spiral flanges *f* upon its inner surface, in combination with the surrounding tapering casing D, forming a space between its inner wall and casing F closed in front and open behind, and a connecting-casing, E, joining said space with the soil-pipe, substantially as herein described.

In witness whereof I hereunto set my hand.

PETER H. JACKSON.

Witnesses:

L. H. NOURSE,
G. W. EMERSON.