

(No Model.)

J. G. PENNYCUICK
VENTILATOR.

No. 254,884.

Patented Mar. 14, 1882.

Fig. II.

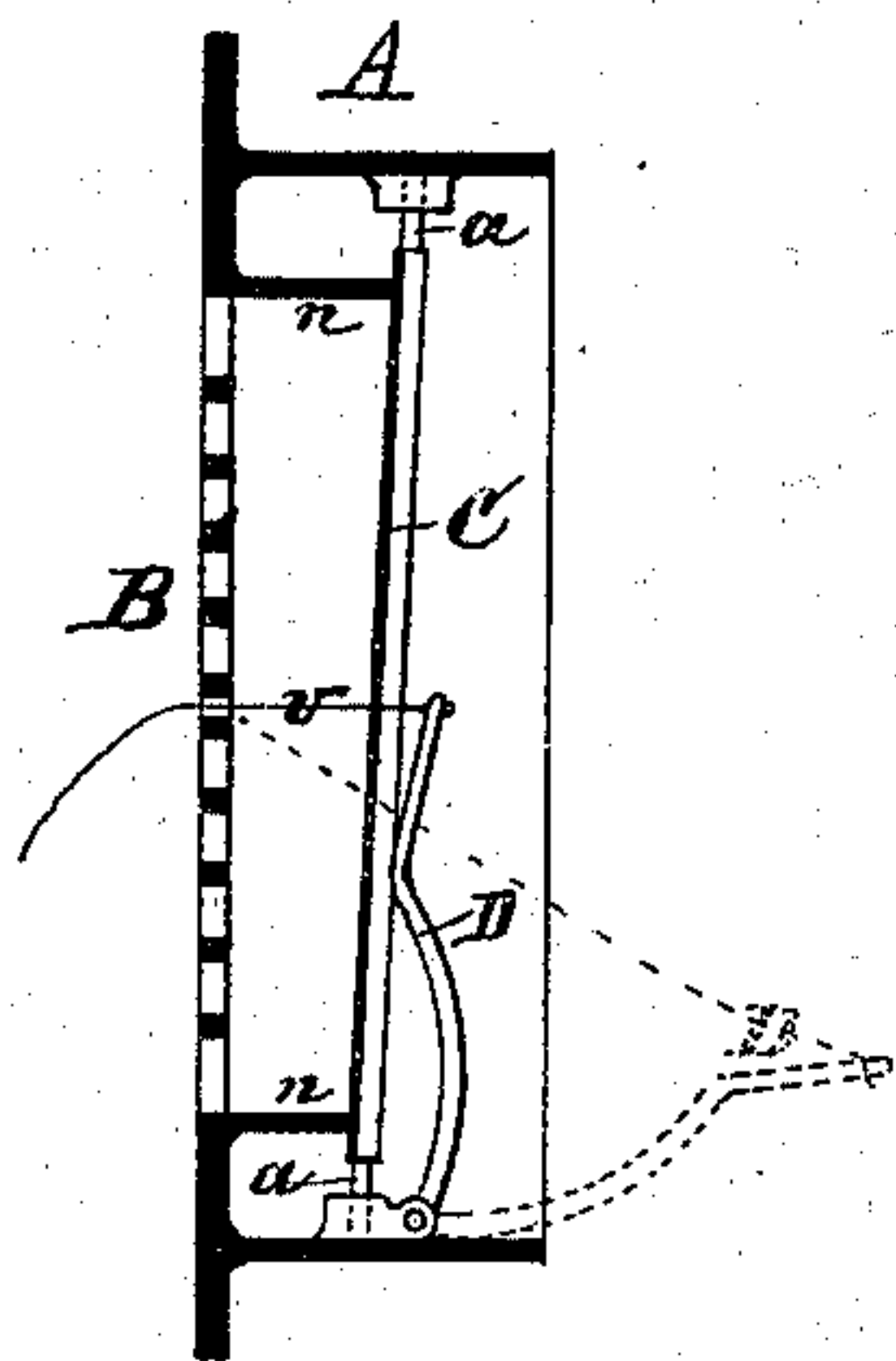


Fig. I

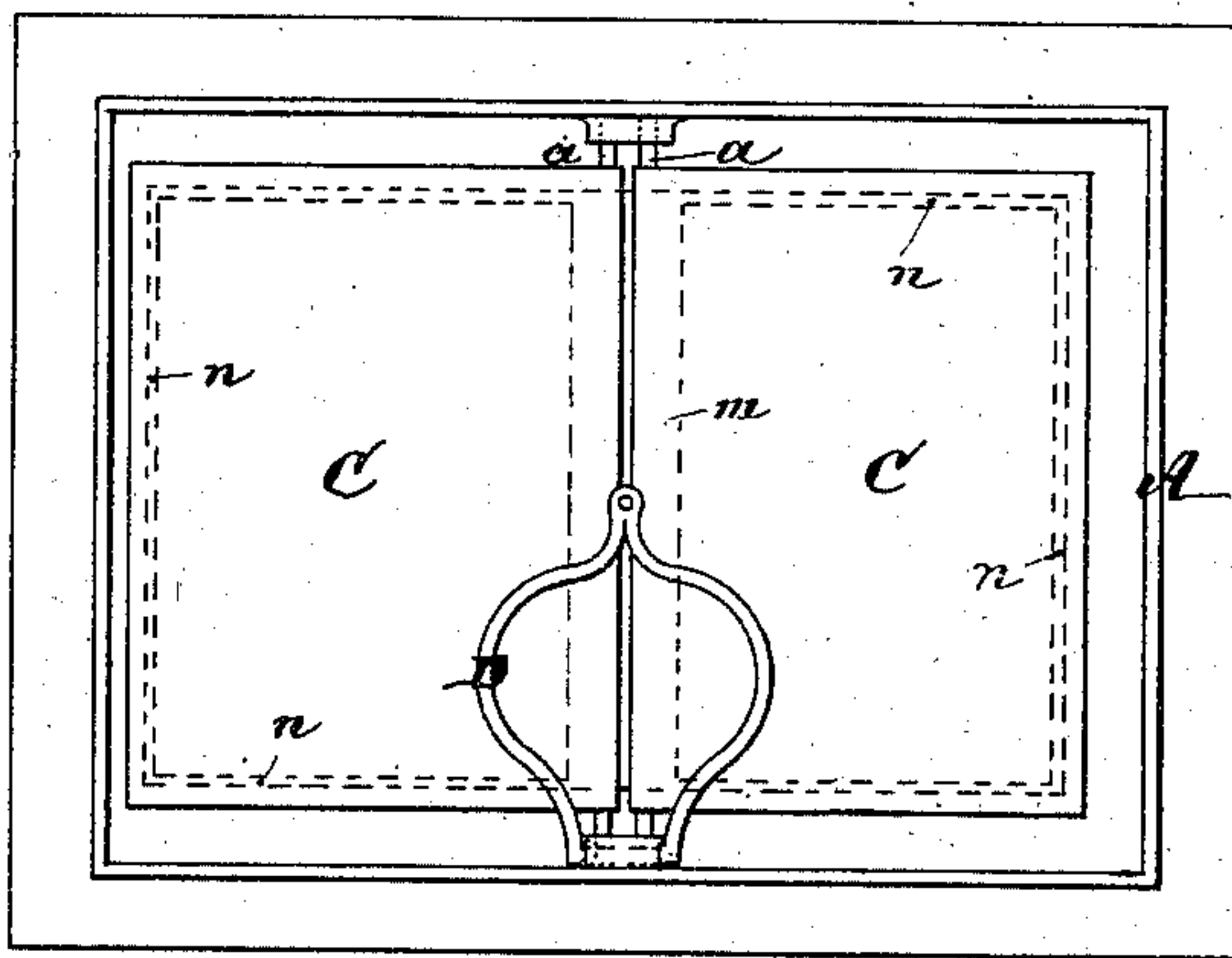


Fig. III.

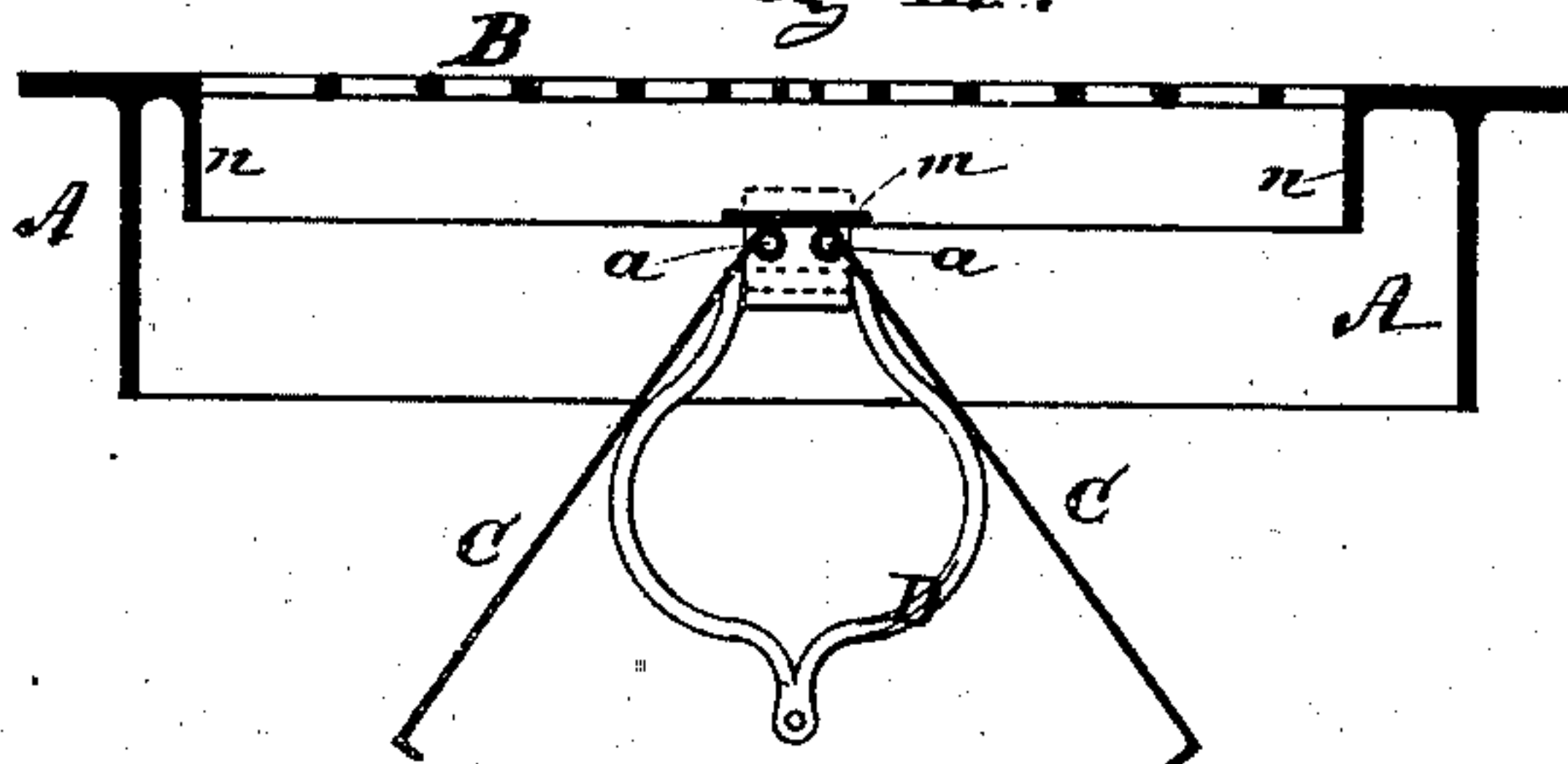


Fig. V.

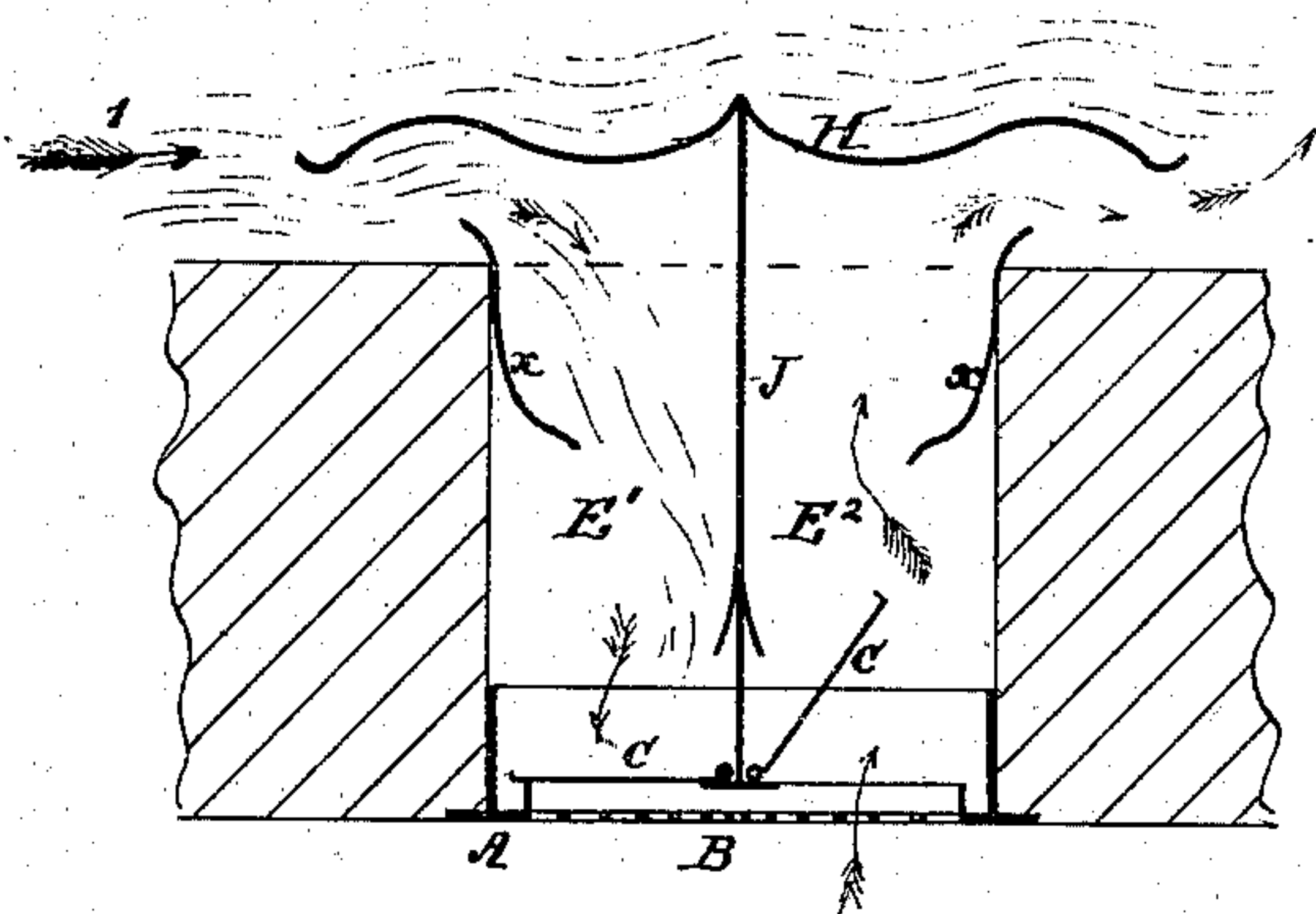
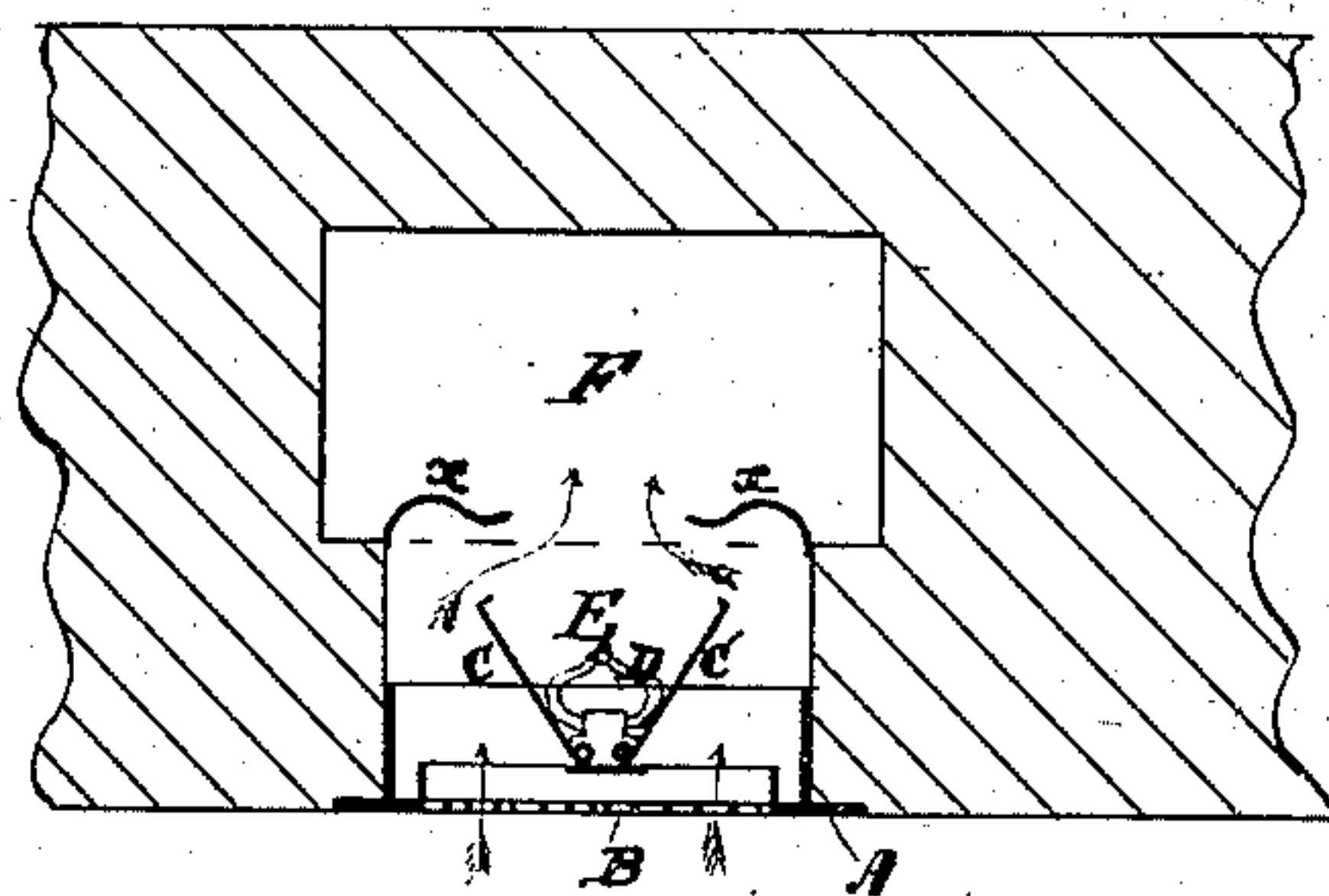


Fig. IV



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES G. PENNYCUICK, OF BOSTON, MASSACHUSETTS.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 254,884, dated March 14, 1882.

Application filed October 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES G. PENNYCUICK, residing in Boston, in the State of Massachusetts, a citizen of Great Britain, have invented a new and useful Improvement in Ventilators, of which the following is a specification.

The nature of my invention consists in the arrangement of a valve or valves at the back of ventilator-grates, so that the same will always open freely to allow the escape of air, and will close automatically whenever affected by a back-draft or by external air or wind.

In the accompanying drawings, Figure I represents a back view of a ventilator-frame with my improvement attached. Fig. II is a vertical section of the same, and Fig. III a horizontal section. Fig. IV represents the arrangement of the ventilator between a room and a chimney-flue, and Fig. V shows the arrangement of the ventilator in an opening passing direct through the wall of a building into the external atmosphere.

Similar letters represent similar parts in all the figures.

A represents the usual frame of a ventilator fitted into an opening connected with the flue of a chimney, or with the external atmosphere direct. The central part, B, is perforated in the usual manner to allow a free escape of the air through the same. On the back of this perforated part valves C C are arranged, turning freely on spindle *a a*, placed at a slight incline, whereby the weight of the valves has a tendency to move outward or to keep open, and thus allow the free escape of air through the perforated part B and past these valves. The valves close against suitable projections or seats, *n*, arranged on the frame A at the outer circumference of the perforated part B, as well as against a central surface, *m*. These surfaces or valve-seats may be covered with india-rubber or other suitable soft material to prevent or deaden the noise of the closing of the valves.

D is a small light frame or lever hinged to the inside of the frame A, to the end of which a flexible rod or string, *v*, is attached, passing through the frame into the room for the purpose of operating the same. When this frame D is lowered, as shown in Fig. III and as shown in dotted lines in Fig. II, the

valves C C will come in contact with the sides of said frame and prevent the valves from opening too far. When this frame D is raised up, as shown in Figs. I and II, it will act against the back of the valves, so as to close the same whenever desired to stop the current of air through the grating or frame.

Fig. IV represents the ventilator arranged in an opening, E, connected with a chimney or air-flue, F, built in the wall.

In consequence of the inclined position of the valve-spindles the valves C C will always remain open, except when acted upon by a frame, D, as above described, and allow the free escape of air from the room into the chimney or air-flue F, so long as there is a regular upward draft in the flue F. As soon as the wind or air blows down the flue F, producing a back-draft, the same will act against the back of the valves C and close the same, preventing thereby any wind or smoke from entering the chamber.

Small guiding plates *x* may be arranged at the end of the opening E to direct or guide the back-draft or wind against the back of the valves.

Fig. V represents the ventilator arranged in an opening passing directly through the wall into the open air. In this case a division-plate, J, is connected to the ventilator, extending through the opening, so as to divide the same in two parts, and to the end of said plate J a wind-cap, H, is attached. By this arrangement one of the valves C opens into one of the divisions, E', and the other valve C operates in the other division, E². When the wind comes in the direction indicated by the arrow 1 the same will enter the division E', closing the valve C operating in said division, and thus prevent the admission of the air into the chamber, while the air in said chamber can freely escape through the other valve C into the division E², the current being assisted by a partial vacuum, which is created near the end of the wind-cap covering that division, by the passing of the wind.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with a perforated ventilator-frame, A, the self-acting valves C C, attached to vertical spindles arranged at an in-

clination to the face of the frame A, substantially in the manner and for the purpose described.

2. In combination with a ventilator-frame,
5 A, provided with valves C C, hung in an inclined position, the division-plate J and wind-cap H, arranged to operate in an opening pass-

ing direct through the wall of a building, in the manner and for the purpose substantially as specified.

JAMES G. PENNYCUICK.

Witnesses:

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