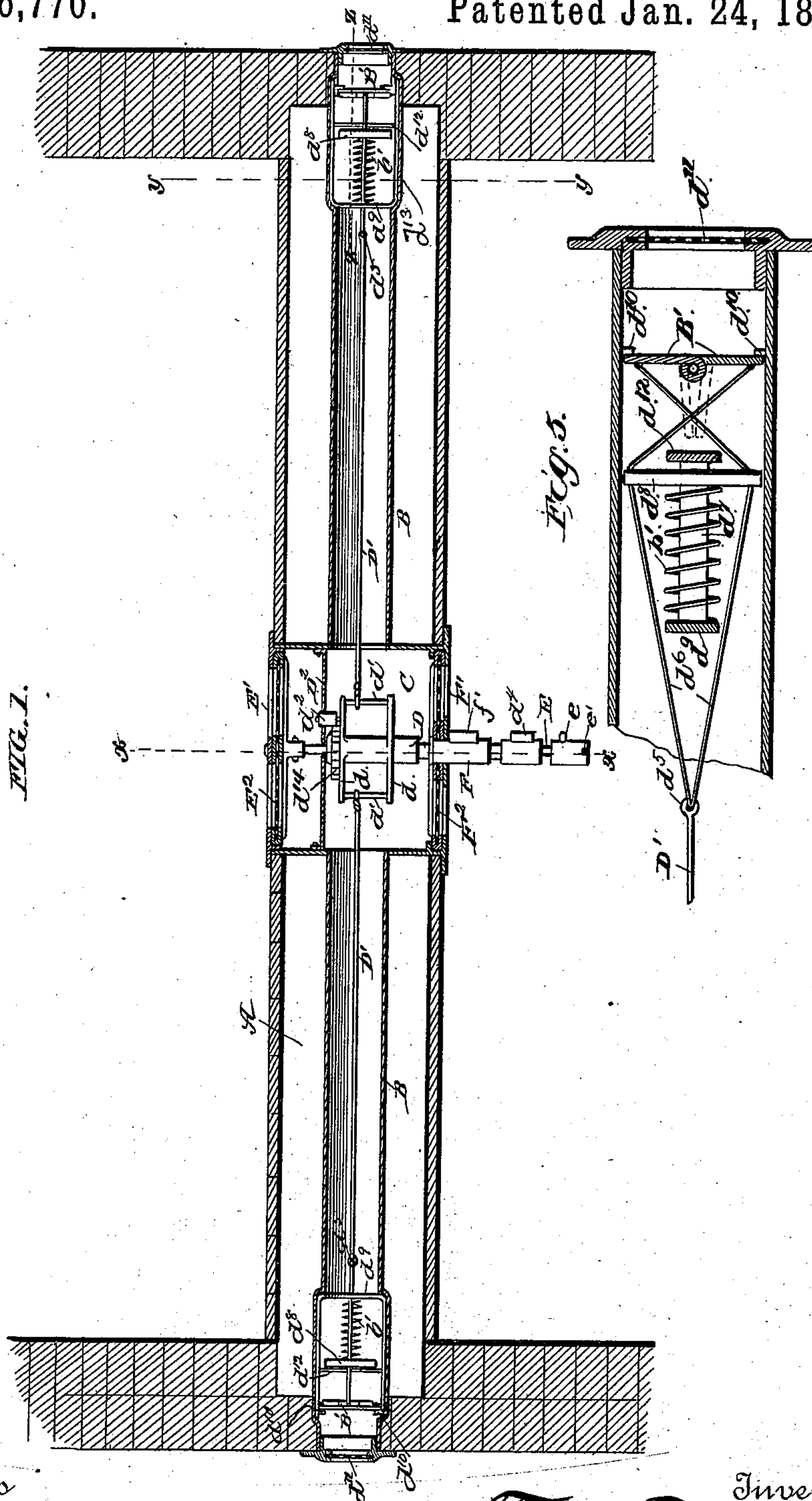


2 Sheets—Sheet 1.

No. 376,770.

Patented Jan. 24, 1888.



Witnesses

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 Cashier

Inventor

Inventor  
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By *his* Attorneys,

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(No Model.)

2 Sheets—Sheet 2.

F. FOELLMER.

ROOM VENTILATOR.

No. 376,770.

Patented Jan. 24, 1888.

FIG. 2.

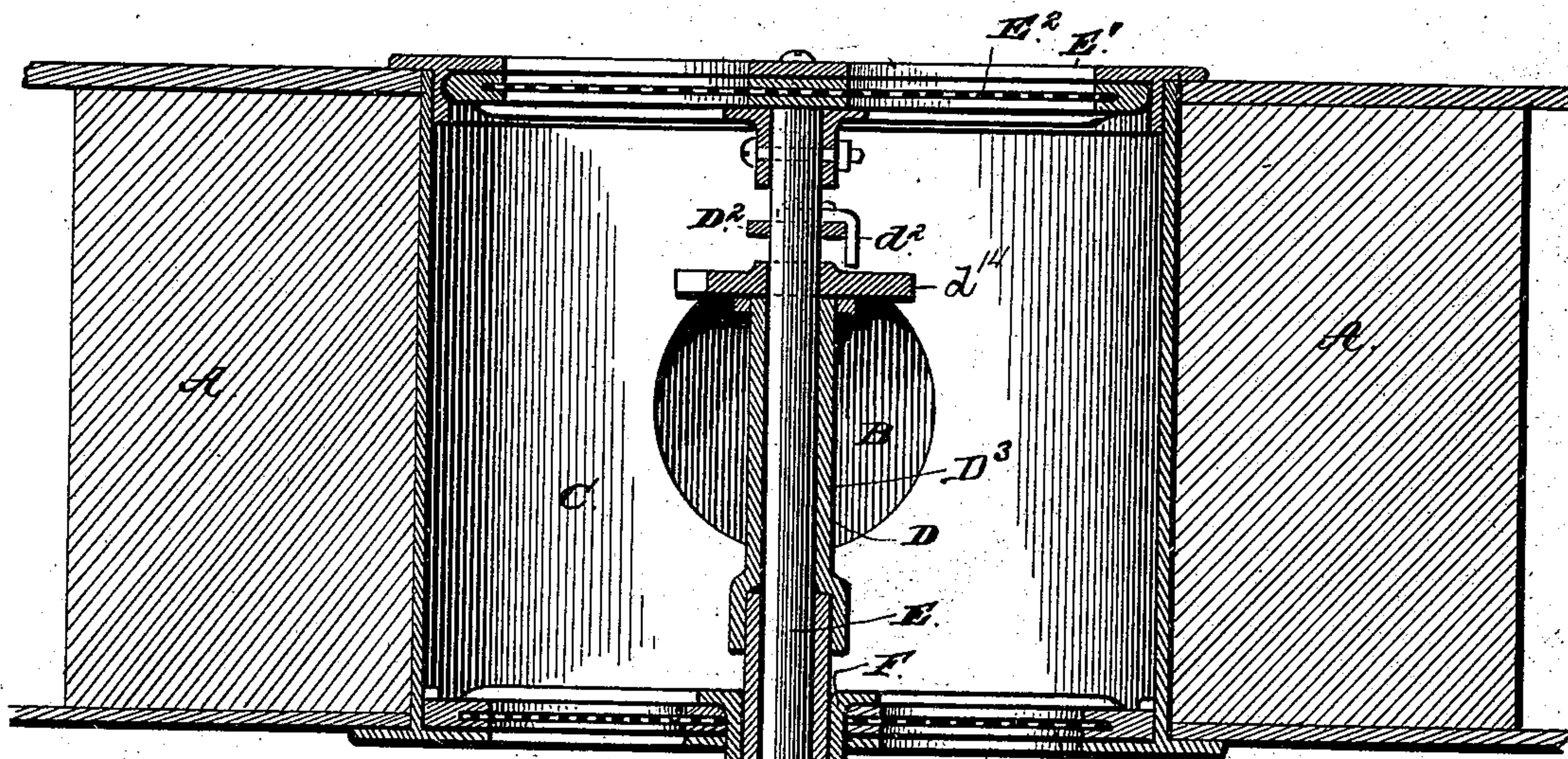


FIG. 3.

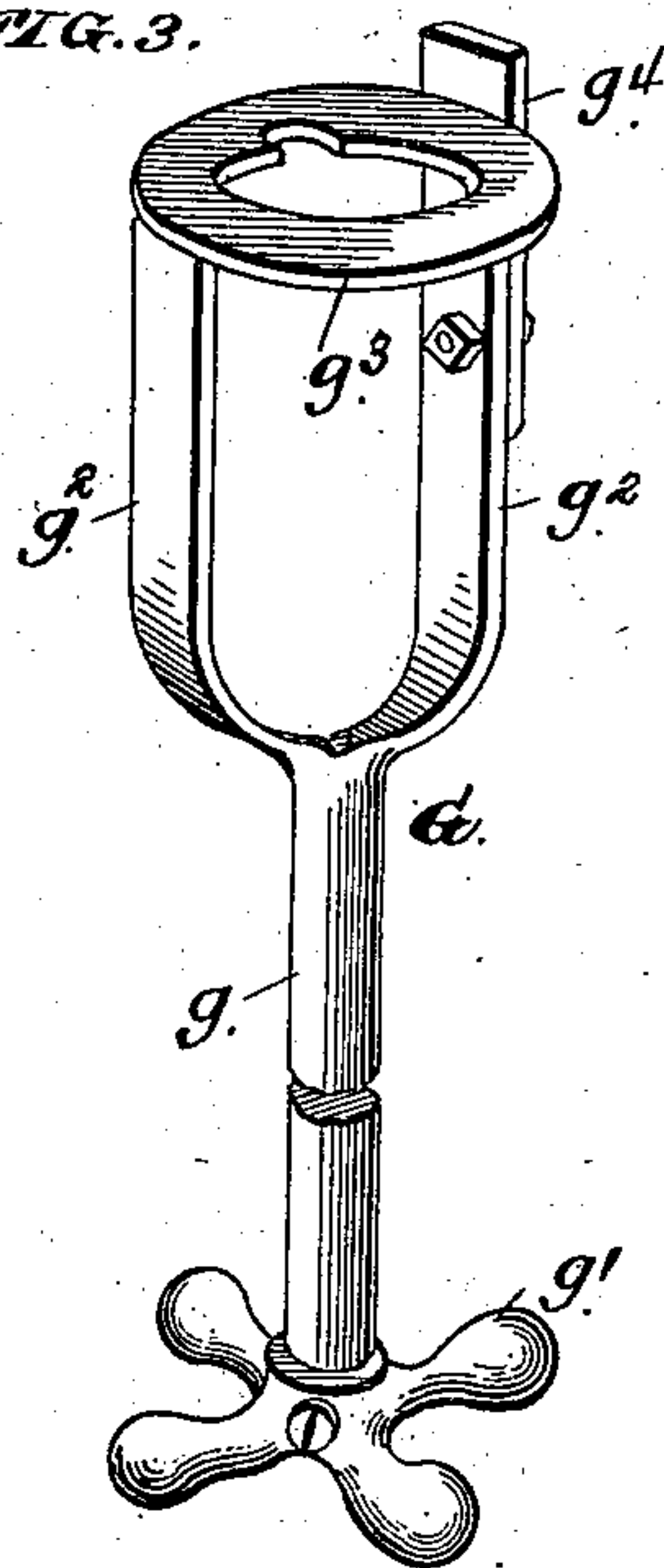
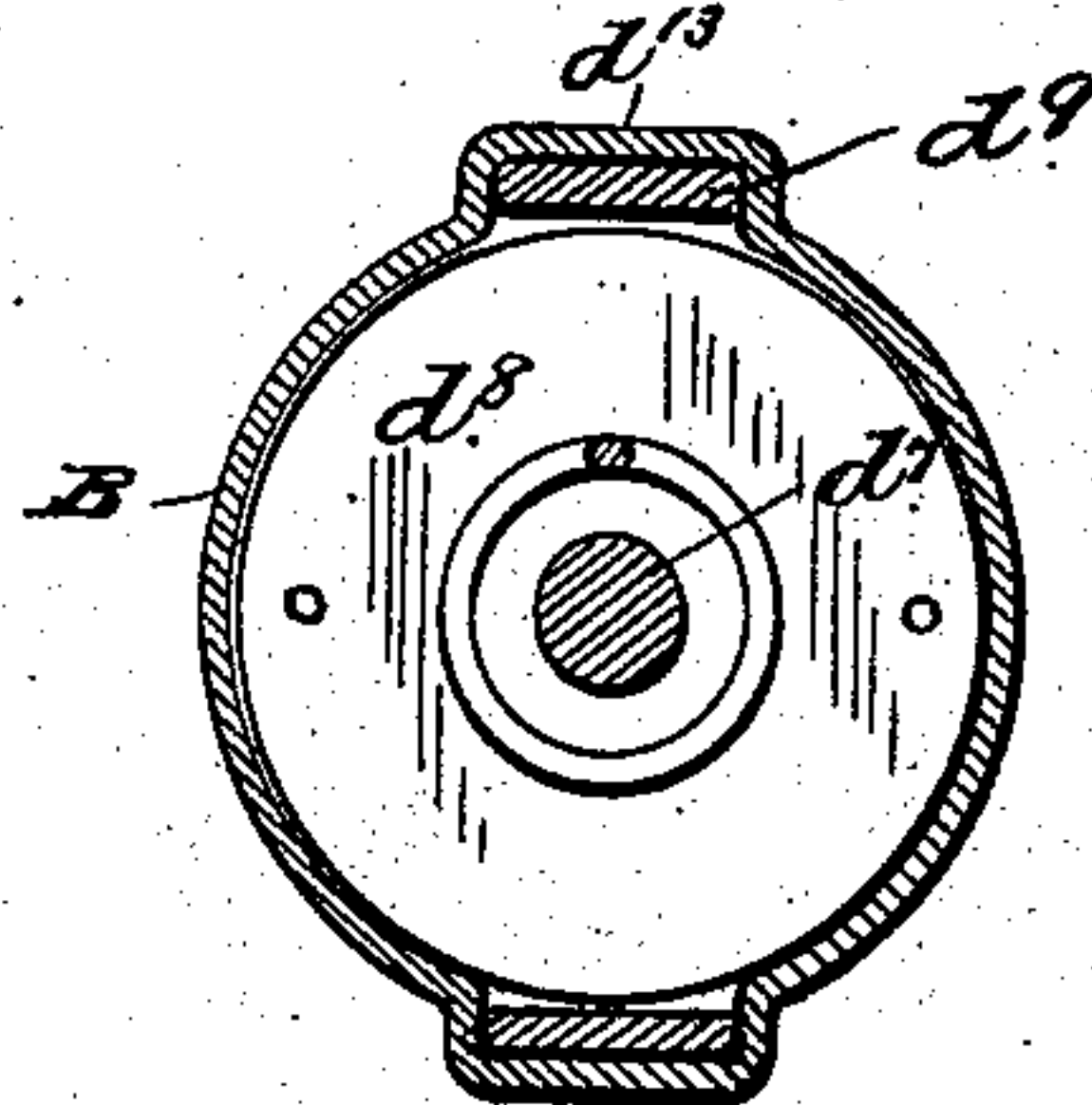


FIG. 4.



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# UNITED STATES PATENT OFFICE.

FRITZ FOELLMER, OF WEST POINT, NEBRASKA, ASSIGNOR OF ONE-THIRD  
TO JOSEPH RUESING, OF SAME PLACE.

## ROOM-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 376,770, dated January 24, 1888.

Application filed May 4, 1887. Serial No. 237,105. (No model.)

*To all whom it may concern:*

Be it known that I, FRITZ FOELLMER, a citizen of the United States, residing at West Point, in the county of Cuming and State of Nebraska, have invented a new and useful Improvement in Room-Ventilators, of which the following is a specification.

My invention relates to an improvement in ventilators; and it consists in the novel arrangement and construction of the same in houses, which will be more fully hereinafter described, and pointed out in the claims.

The object of my invention is to provide a ventilator which is adapted to give ingress to the outer atmospheric air, form a means of heating one room from another, and by an arrangement of the mechanism thereof to close one side of the ventilator, leaving the other open, for the purpose of giving egress or exit to noxious odors or smoke from a room in which the said ventilator may be situated, the parts of the ventilator being of simple and effective construction and operation, easily handled, readily understood, and positive in their results. I attain this object by the construction illustrated in the accompanying drawings, wherein like letters of reference indicate similar parts in the several views, and in which—

Figure 1 is a sectional view of a part of a building with my improved ventilator shown in connection therewith. Fig. 2 is an enlarged cross-section on the line  $x x$  of Fig. 1. Fig. 3 is a detail perspective view of the operating-handle. Fig. 4 is an enlarged cross-section on the line  $y y$  of Fig. 1. Fig. 5 is a horizontal section on the line  $z z$  of Fig. 1.

A indicates the floor-joist, to which the pipes B B of my improved ventilator are secured, and, as shown in Fig. 1, having the main entrance or openings of the said ventilator formed at the central portion thereof and uniting the two pipes B B. Through the central chamber, C, a shaft, D, passes, which has two arms,  $d$ , secured to the central portion thereof, and united by tie-rods  $d'$ . To each one of these tie-rods  $d'$  a rod,  $D'$ , is secured, which projects through the pipes B, and is connected to hinged doors  $B'$ , situated in close proximity to the ends of the pipes B, the said ends of the pipes B being provided with gauze screens

$d^{11}$ , for a purpose which will be more fully hereinafter described.

The doors  $B'$  are spring-actuated, as shown in the drawings, so that they will be prevented from dropping open of their own accord, as would be the case if they were not engaged by the spring  $b'$ , as shown. As shown in Fig. 5, the outer end of each of the rods  $D'$  is formed with an eye,  $d^5$ , to which is secured two inclined arms,  $d^6$ , which pass through a plate,  $d^8$ , and after passing through the said plate  $d^8$  cross each other and connect with each of the doors  $B'$ , which, when closed, normally rest against stops  $d^{10}$ , formed with the sides of the pipes B. By means of this construction it will be seen that the doors  $B'$  can be more readily opened without interference by the operating mechanism. The spring  $b'$  is mounted upon a rod,  $d^7$ , which passes through the plate  $d^8$  and is secured to a cross-piece,  $d^{12}$ , while the other end of the rod  $d^7$  is secured in the U-shaped arm  $d^9$ , which passes across the pipe B, and whose sides are seated in the outwardly-depressed portions  $d^{13}$ , Fig. 4, of the pipe B. By this construction it will be seen that the spring  $b'$  has a permanent bearing and seating, from which it cannot be displaced. In the operation of the doors  $B'$ , through the medium of the rod  $D'$  and rods  $d^6$ , the plate  $d^8$  is drawn against the spring  $b'$  and toward the transverse cross-piece of the arm  $d^9$ , and if the rod  $D'$  is not locked in an open position the doors  $B'$  will immediately close.

The shaft D is hollow, and comprises the upper section,  $D^3$ , which is arranged entirely in the chamber C, and the lower section,  $D^4$ , which depends from the lower end of section  $D^3$  and extends below the bottom of the said chamber.

E represents a shaft which passes through the section of the hollow shaft D, and is attached rigidly at its upper end to a register,  $E'$ , in the upper end of chamber C.

$D^2$  represents a metallic cross-bar arranged in the chamber C and having a central opening, through which the shaft E passes, and in which said shaft is adapted to turn. From one side of the said cross-bar, at the center of the same, depends a vertical stop or stud,  $d^2$ .

$d^{14}$  represents a peripherally-spurred disk,



which is rigidly attached to the upper end of the hollow shaft D normally, and is a slight distance below the cross-bar D<sup>2</sup>. When the said shaft D is turned to open the doors B', as hereinbefore set forth, it becomes necessary to lock the said doors open against the tension of the springs b', to prevent them from shutting. To accomplish this, the hollow shaft D, which is vertically movable on the shaft E, is forced upward, after having been turned, until one of the spaces between the spurs on the periphery of the disk d<sup>14</sup> engages the stud or stop d<sup>2</sup>, thereby preventing the shaft D from turning, and consequently holding the doors open, as will be readily understood. A collar, F, is also mounted on the shaft E, and is connected to the lower register F'. These registers E' and F' each have a wire-gauze lining, E<sup>2</sup> and F<sup>2</sup>, which prevents the ingress into the room, either from the outer atmosphere to the pipes B or from one room into another, of any particles of foreign matter or dirt, and the end gauze coverings of the pipes B prevent the ingress of water in the said pipes. The collar F has a projection, f', thereon, and the shaft D has a collar thereon which is of equal diameter to the collar F, and is provided with the projection d<sup>4</sup>, while the outer end of the shaft E is also provided with a collar of the same diameter as the collar F, and is provided with a projection or stud, e, and with a slotted end, e'. To operate these shafts, and to thereby control the several registers, I provide a handle, G, as shown in Fig. 3. This handle G consists, essentially, of a rod, g, having an operating wheel or bar, g', on its lower end and two open arms, g<sup>2</sup>, on its upper ends, which are secured to a circular plate, g<sup>3</sup>, having an aperture therein of such form as to adapt it to pass over the various projections on the sleeves on the shafts heretofore described. On one of the arms g<sup>2</sup>, and projecting slightly above the surface of the plate g<sup>3</sup>, is a metallic strip, g<sup>4</sup>, which is adapted to engage with the slotted end e' of the collar on the end of the shaft E. By inserting the apertured plate g<sup>3</sup> over the several sleeves the projections thereon will be engaged by the slot in the said plate, and they may be turned to regulate the same, as desired, and to open and close one or all of the registers, as may be desired.

The facility with which my improved ventilator can be controlled and operated at the several points renders it convenient to conduct heat from one apartment to another; also to promote health by providing means for the exit of noxious vapors or odors, and at the same time give ingress to the atmospheric air from without.

The novelty and utility of my device are obvious, and need not be further enlarged upon herein. It is apparent that many slight variations in the construction of the several parts may be made and substituted for those shown and described without departing from the nature of my invention.

Having thus described my invention, I claim—

1. In a ventilator, the combination, with the central chamber having upper and lower registers, of two pipes leading therefrom and having end doors operated by the shaft passing through the central chamber, and which operates the registers thereof, and the springs for keeping the doors in a closed position, substantially as described.

2. The combination, in a ventilator, of the chamber C, having the registers at its upper and lower ends, the pipes B, extending from the said chamber to the outer air, the doors B' at the outer ends of said pipes, the revoluble shaft D, arranged in the chamber C, and connections between the said shaft and the doors whereby the latter may be opened or closed, substantially as described.

3. In a ventilator, the combination, with the chamber C, having upper and lower registers, E' and F', of the pipes B, connected thereto, having gauze coverings on their outer ends, the hollow shaft D, passing into said chamber and having the disk d<sup>14</sup>, the cross-bar D<sup>2</sup>, arranged in chamber C, and having the depending stud or stop d<sup>2</sup>, adapted to engage the disk, the arms d, secured to shaft D, the tie-rods d', the rods D', connected to the doors B', the shaft E, passing through the shaft D and adapted to operate the register E', the collar F, in connection with the register F', and means, substantially as set forth, for operating the several parts, substantially as described.

4. The combination of the chamber C, having the registers E' and F', and pipes B, communicating with the said chamber and having the doors B', the shaft E, attached to the register E', the hollow shaft D, fitted on shaft E, and having the connections attached to doors B', and the collar or sleeve F, attached to the register F', and shaft D, substantially as described.

5. The combination of the chamber C, having the registers E' and F', the stud or projection d<sup>2</sup>, supported rigidly in the said chamber, the pipes B, communicating with the said register and having the doors B', the shaft E, attached to register E', the hollow shaft D, fitted on shaft E, adapted to turn and move lengthwise thereon, and having the disk or detent adapted to engage the projection or stud d<sup>2</sup>, for the purpose set forth, connections between said shaft D and doors B', and the collar or sleeve F, attached to the register F' and fitting on the hollow shaft, substantially as described.

6. In combination with the rods D', having the eyes d<sup>5</sup> at their upper ends, of the smaller rods d<sup>6</sup>, connected to the said eyes d<sup>5</sup> at one end and diverging and passing through a plate, d<sup>8</sup>, and crossing each other on the opposite side of said plate and secured to the doors B', and the spring b', substantially as described.

7. The combination of the pivoted doors B', the movable plates d<sup>8</sup>, arranged near the rear sides of the doors, the springs b', bearing



against said plates, the rods  $d^8$ , attached to the plates and having their outer ends attached to the doors, and the shaft D, connected to the rods  $d^6$ , substantially as described.

5 8. The combination of the pipes B, having the side depressions,  $d^{13}$ , the U-shaped arm  $d^9$ , bearing in the side depressions and having the cross-plate  $d^{12}$ , the pivoted doors B', arranged in the pipes, the rods  $d^7$ , attached to the arms  $d^9$  and cross-plates  $d^{12}$ , the plates  $d^8$ , adapted to slide on the rods  $d^7$ , the springs bearing against said plates, the rods  $d^6$ , connecting the said plates to the pivoted doors, and the operating shaft and connections be-  
10 15 tween the same, and the said rods  $d$ , substantially as described.

9. The combination of the chamber C, having the registers, the tubes communicating

with the chamber and extending in opposite directions therefrom, the end doors, B' B', in said tubes, the shaft E, connected to the registers, the hollow shaft D, through which shaft E extends, connections between shaft D and the end doors, and the handle G, adapted to operate either of the shafts, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRITZ <sup>his</sup> × FOELLMER.  
mark.

Witnesses:

JACOB FORSTER,  
D. W. CLANCY.