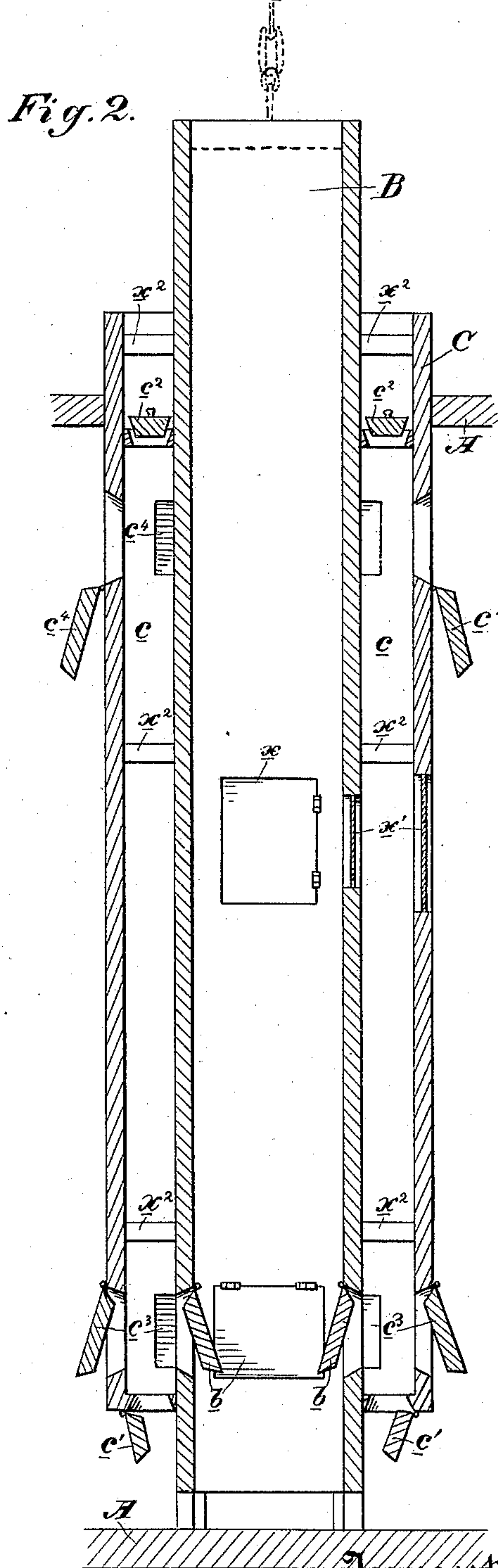
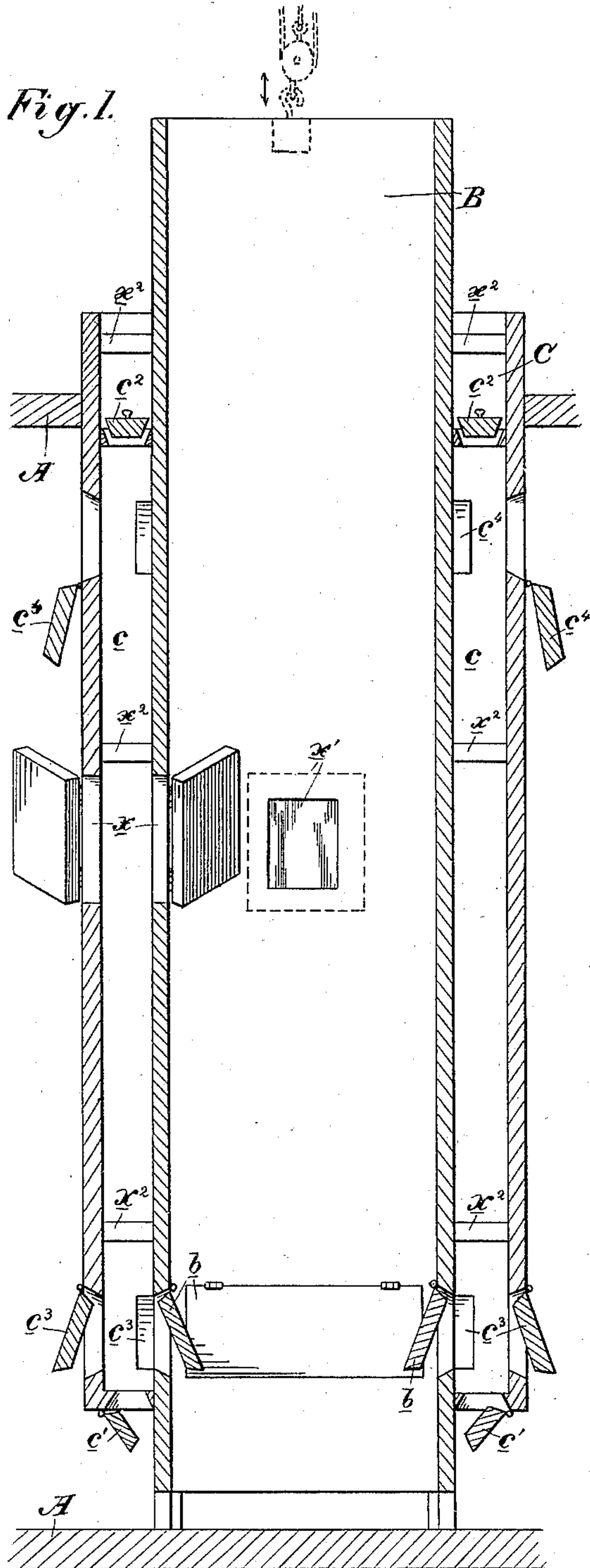


(No Model.)

I. ALLEGRETTI.
VENTILATOR FOR BUILDINGS.

No. 370,592.

Patented Sept. 27, 1887.



Witnesses,
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UNITED STATES PATENT OFFICE.

IGNAZIO ALLEGRETTI, OF WEST BERKELEY, CALIFORNIA.

VENTILATOR FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 370,592, dated September 27, 1887.

Application filed September 22, 1886. Serial No. 214,274. (No model.)

To all whom it may concern:

Be it known that I, IGNAZIO ALLEGRETTI, of West Berkeley, county of Alameda, and State of California, have invented an Improvement in Ventilators for Buildings; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the class of air-purifiers; and my invention consists in tubes or pipes fixed or adjustable with relation to each other and arranged the one within the other, forming independent concentric passages, and in door-controlled apertures in said tubes or pipes, whereby said passages communicate with each other, with the apartment or apartments in which the tubes are placed, and with the outer air, all of which I shall hereinafter fully describe.

The object of my invention is to purify the air in any apartment by providing simple and effective means for producing positive and thorough ventilation.

My invention, though applicable to any apartment or series of apartments and to shafts of mines, &c., is intended particularly for refrigerating-chambers in which perishable material is preserved.

Referring to the accompanying drawings, Figures 1 and 2 are vertical sections of my air-purifier.

A is an apartment or chamber.

B is a pipe or tube having each end open. Its lower end is raised from the floor of the apartment, so that the air may have free access to it. Its upper end is carried through the top or roof of the apartment and opens out in some locality exposed to the sun, so that a draft is created through said tube.

Around the tube or pipe B is fitted a tube or pipe, C, having dimensions great enough to leave a passage, *c*, between its walls and those of the inner tube, said passage having communication below with the apartment A and above with the outer air. The base of this passage is closed by doors *c'*, and its top is closed by doors *c''*. In the sides of the exterior tube or pipe, C, near its lower end, are made apertures controlled by doors *c''*, and similar apertures controlled by doors *c''* are made near its upper end, both sets of apertures communicating with the passage *c*.

In the inner tube, B, near its lower end and about opposite the apertures controlled by the doors *c''* in the outer tube, are made apertures controlled by doors *b*.

In cases where artificial heat is employed to create the draft through the inner tube, as by the introduction of a candle, lamp, or other source of heat, I have door-controlled apertures at *x* made in both tubes, so that the source of artificial heat may conveniently be introduced. These I call "doors of communication" merely.

Into both tubes I let window-lights at *x'*, for the purpose of inspecting the interior.

The operation of the purifier is as follows: When I can arrange it so that the upper end of the inner tube shall be exposed to the natural heat of the sun, I do not need artificial heat; but in case such is needed, it is introduced through the door-controlled apertures at *x* and supported within the inner tube in any suitable manner. It will be seen that a draft is thus created through the inner tube and that the heated and foul air and the moisture will be drawn upwardly through the inner tube, as in the case of a common chimney. When I desire the draft to proceed only through the inner tube, all the door-controlled apertures are closed, leaving only the main passage of the inner tube open from end to end. The heated and foul air and the moisture will therefore be extracted from the lower portion of the apartment A by being drawn into the open base of the inner tube, and thence through it and discharged above.

In case I wish to extend the area of suction, I open the doors *c''*, near the lower end of the outer tube, and also the doors *b*, near the lower end of the inner tube, whereby the heat and moisture are drawn in not only through the bottom of tube B, but also through the doors *c'' b*. In case I wish to pass the draft direct through both tubes, I close the doors *c'' b* and open the doors *c'* and *c''* at the bottom and top of the passage *c*, formed by the outer tube.

In order to extract the heated and foul air and moisture from the upper portion of the apartment A, I close the doors *c'* and *c''* and open the doors *c''*, near the upper end of the outer tube, and also the doors *b*, near the

lower end of the inner tube. The draft is now not only through the inner tube from below, but also through the doors c^4 above, down the passage c , through the doors b into the inner tube, and thence up said tube with the main draft.

Although the tubes may be arranged with a fixed relation to each other, I prefer to so fit them together that one or more may be vertically adjustable. I would therefore mount the inner tube upon brackets or ways x^2 , or other suitable guides, so that it may be raised or lowered while the outer tube remains fixed. This adjustment is for the purpose of changing the avenues of communication between the tubes. Thus, though I have shown doors in the outer tube only near the ends, I may have others at other points in said tube, and by raising the inner tube, so that its doors b shall communicate with them, I can draw the heated air, &c., from any level in the apartment; or I may shut off all communication by dropping the inner tube, so that its doors b shall be below the outer tube. In this way I can purify all portions of the apartment. In handling the various doors I am, of course, guided by circumstances. I may, to effect the required result, open them all or only a portion, or only a portion of each set.

By means of this apparatus I can keep the air of the apartment pure and dry, and in a refrigerator can so extract from all portions of it the foul and heated air and moisture as to leave the remaining air thoroughly dry and materially reduce the temperature and keep it so reduced, thus effecting a saving in ice.

In some cases and to effect a different result the inner tube may cease to be the channel of an upward draft or current of hot air and become the avenue for a downward current of cold air. This result is important when the purifier is applied to a mine. In this case, the temperature below being higher than that above, the cold air passes down the inner tube, while the current of hot air from below enters the passage c of the outer tube and is discharged above in any suitable locality. It will be seen, therefore, that the current is reversed.

I do not confine myself to the use of only two tubes, nor to their employment in a single apartment. I may have as many more tubes fitted around the inner ones as there are apartments in a vertical series, such as the rooms on the several stories of a high building. In such a case the communications between the several tubes would be arranged to conform to the main draft, so that each apartment would have its bad air and moisture ex-

tracted and directed properly through the several passages into the outleading draft. 60

The tubes need not pass through the roof of the apartment in all cases, for sometimes they may make an elbow and pass out at the side.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 65

1. An air-purifier consisting of an outer tube or pipe, an inner tube or pipe adjustable within the outer tube or pipe, said tubes or pipes forming concentric passages communicating with the apartment and with the outer air, and door-controlled apertures in said tubes or pipes made to correspond by the adjustment of the inner tube, substantially as described. 70

2. In an air-purifier, the inner adjustable tube or pipe, B, having open ends communicating with the apartment in which it is placed and with the outer air, and having door-controlled apertures b near its lower end, in combination with the outer tube or pipe, C, forming a passage, c , between itself and the inner tube, said passage being closed at each end, and door-controlled apertures c^4 in said outer tube, by which the passage c communicates with the upper portion of the apartment, substantially as and for the purpose herein described. 75 80 85

3. In an air-purifier, the inner adjustable tube or pipe, B, having open ends communicating with the apartment in which it is placed and with the outer air, and having door-controlled apertures b near its lower end, in combination with the outer tube or pipe, C, forming a passage, c , between itself and the inner tube, closed at each end, said tube having door controlled apertures c^3 near its lower end, substantially as and for the purpose herein described. 90 95

4. In an air-purifier, the inner adjustable tube or pipe, B, having open ends communicating with the apartment in which it is placed and with the outer air, and having door-controlled apertures b near its lower end, in combination with the outer tube or pipe, C, forming passage c , the doors c^3 c^2 , controlling the ends of said passage, and the doors c^3 c^4 in the tube C, controlling apertures by which the passage c communicates with the apartment, substantially as and for the purpose herein described. 100 105 110

In witness whereof I have hereunto set my hand.

IGNAZIO ALLEGRETTI.

Witnesses:

S. H. NOURSE,
H. C. LEE.