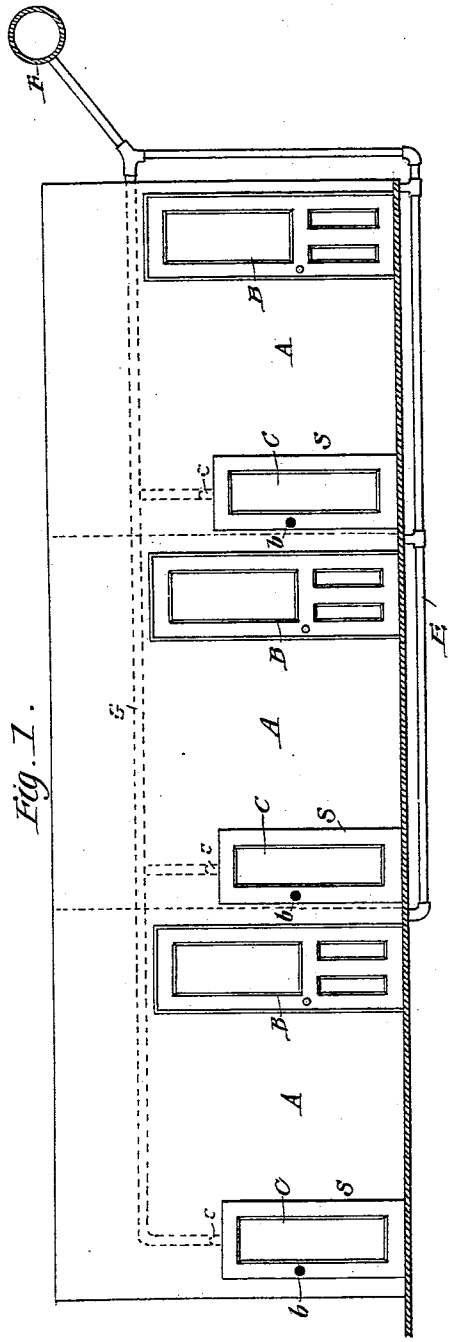
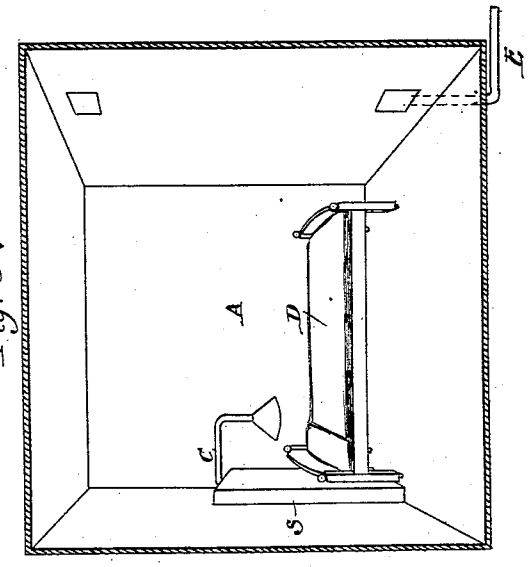
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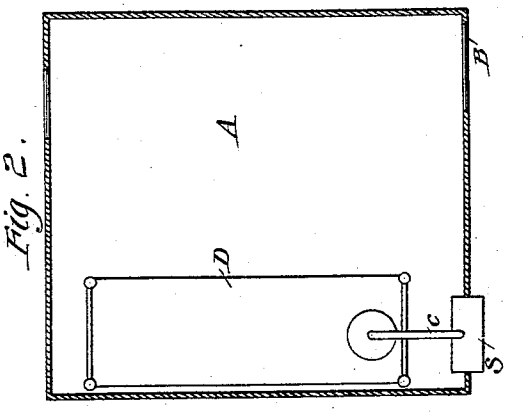
W. R. MACDONALD.

DEVICE FOR MEDICATING AIR.

No. 441,573. Patented Nov. 25, 1890.







WITNESSES:

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

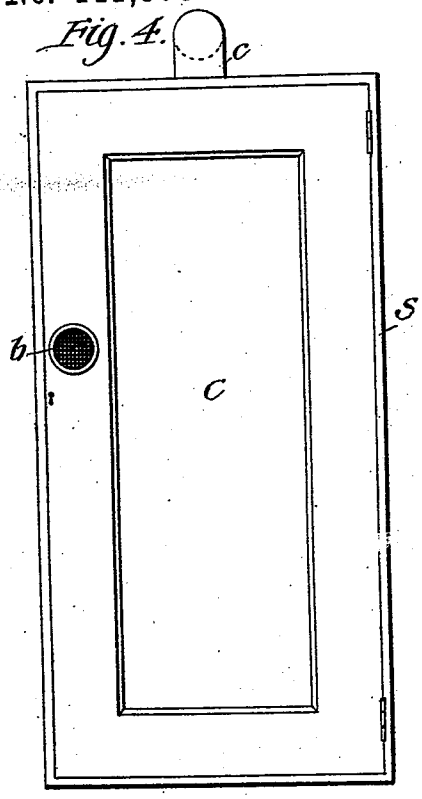


Fig. 5.

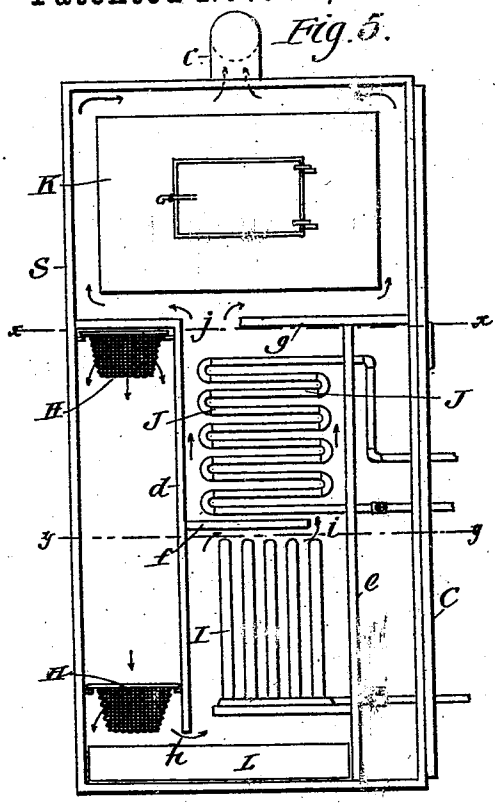


Fig. 6.

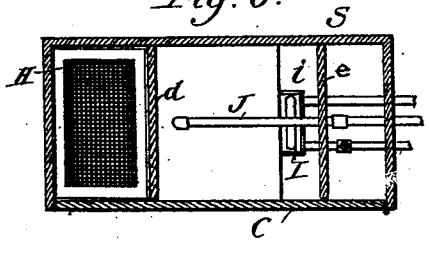
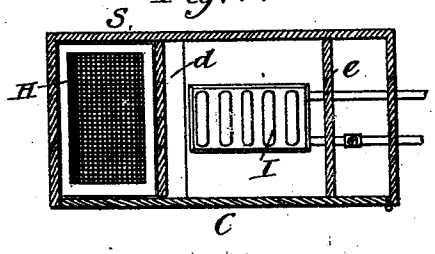


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM R. MACDONALD, OF ALLEGHENY, PENNSYLVANIA.

DEVICE FOR MEDICATING AIR.

SPECIFICATION forming part of Letters Patent No. 441,573, dated November 25, 1890.

Application filed February 24, 1890. Serial No. 341,543. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. MACDONALD, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Devices for Ventilating Apartments and Controlling the Temperature and Sanitary Conditions of the Air therein, of which the following is a full, clear, and exact description.

The object of this invention is to supply an apparatus or means applicable to hotels, private residences, prisons, hospitals, and other places or buildings for ventilating and controlling the temperature and sanitary conditions of the air in apartments within the building, each independently of the other.

My invention comprises an air-tight cabinet or structure having a suitable air-inlet and provided with means for warming, cooling, or refrigerating and purifying or charging the incoming air with antiseptics or medicaments for any particular ailment in an apartment to which the cabinet or structure is applied, suitable provision being made for drawing off the vitiated air from the apartment. These cabinets or structures are designed to be separately applied to a series of apartments in a building, so that each apartment may be isolated from the other, although all the apartments may have a general outlet and means for drawing off the vitiated air. Said apartments by means of their independent cabinets may have the incoming air which passes into them separately treated, as required, to suit the particular condition, comfort, or requirements of the occupants of the different apartments without risk of contagion or interference with the comfort of the other, so that applied to hotels the invention may be used for separately warming or cooling adjacent apartments, and applied to hospitals a sick person may have the air regulated or medicated in his room, as required, and a convalescent person in an adjacent room may have the temperature or condition of the air regulated to suit his requirements without any liability of contagion from adjacent sick-rooms.

A conspicuous advantage and feature of this invention is that by the use of these independent cabinets, occupying only a small space and each fitted with means for independently changing the temperature and quality or medicated condition of the air in the different apartments as necessities may require, there will be great economy and convenience over as compared with a single apparatus for varying the temperature or qualifying the condition of the air in a series of apartments, and room and working expenses will be largely economized, inasmuch as much smaller apartments having all the necessary requirements for inhalation and exhalation will suffice, so that an apartment measuring only six feet by seven feet and eight feet in the remaining direction, containing but three hundred and thirty-six cubic feet, may be well ventilated and would be of ample capacity for the necessary requirements of an ordinary person.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a front elevation of the one side or half of a corridor in part with my invention applied to a supposed number or series of separate apartments. Fig. 2 is a horizontal section through one of the apartments, and Fig. 3 a perspective elevation of the same as seen from its interior. Fig. 4 is an outside front elevation of one of the cabinets; Fig. 5, a front elevation of said cabinet open; Fig. 6, a horizontal section on the line $x\ x$ in Fig. 5, and Fig. 7 a further horizontal section on the line $y\ y$ in Fig. 5.

A indicates a series of separate apartments arranged on the one side or half of a corridor, and B the independent doors thereof, having their upper portions preferably framed with glass, so that inspection of the interior and view of the occupants may be had without opening the doors. These apartments and their doors should be of any suitable construction that will make them air-tight and protect the apartments from contagion, and each apartment is fitted with a cabinet S, which should be made double-walled and is provided with a door C as nearly air-tight as possible. These cabinets are arranged to project into or enter the apartments from the outside and are accessible by their doors C

from the corridor, or they might be otherwise placed to connect with their respective apartments.

Each cabinet is provided with an air-inlet *b*, into or through which the air to be treated and supplied to the apartment is to be drawn and, after being suitably heated, cooled, or medicated in the cabinet, is distributed within the apartment, as by an outlet-pipe *c*, which may be located over the cot D in the apartment in special cases—as, for instance, where an anæsthetic is to be conveyed—or be elsewhere distributed within the apartment, according to the treatment, or as merely warmed or cooled air is to be conveyed thereto. The vitiated air is drawn from the apartments as by a suction or exhaust duct E, having suitable branches connecting with the different apartments and terminating in a main exhaust F, to which may be applied a fan or any suitable ventilating device. A supplementary or emergency exhaust-duct G may also be arranged to connect with the upper portions of the apartments and terminate in the same main exhaust-duct F.

Each cabinet is suitably fitted with means for warming, cooling, or medicating with various medicaments, the air entering and circulating through the cabinet and to be afterward passed therefrom into the apartment to which the cabinet pertains. Thus each cabinet S is represented as constructed with circulating-passages formed in part by upright and horizontal partitions *d*, *e*, *f*, and *g*, leaving openings *h*, *i*, and *j*; but the circulating-passages may be variously arranged. The air entering the cabinet by its inlet *b* first passes downward on one side of the upright partition *d*, then underneath the same by the opening *h*, up on the other side of said partition *d*, under the horizontal partition *f*, through the opening *i*, and up to the under side of the upper horizontal partition *g*, out through the opening *j* into the upper space of the cabinet, and out by the distributing-outlet *c* to the apartment. The air in thus making its detour through the cabinets is exposed to any suitable devices or means used to warm, cool, purify, or medicate it, as required, each cabinet being provided with special means within itself for thus variously treating or qualifying the air entering and circulating through the cabinet, according to the necessities of the patient or occupant of the particular apartment without regard to or connection with the adjacent apartments, the several apartments being isolated one from the other and by means of their independent cabinets S having the air in them separately, and it may be very differently treated or medicated to suit the different requirements of their respective occupants. Thus the air as it enters through the inlet *b* of each cabinet may first pass down through one or more reticulated drawers or receptacles H, adapted to carry sponges saturated with antiseptics, anæsthetics, or other medicaments, and thereby qualify or change the air to be conveyed to the apartment as required, and as the air passes through the opening *h* it may be warmed, if necessary, by circulating up and about a steam-radiator I, or, if not required to be heated, be exposed, after its passage through the opening *i*, to a refrigerating-coil J to cool it when required, and, if necessary, after its passage through the opening *j*, be further exposed to contact with a tank K, containing ice or a freezing-mixture, before its final discharge from the cabinet into the apartment—as, for instance, by the outlet-pipe *c*.

L is a drip-pan in the bottom of the cabinet to receive moisture.

It is not necessary that the air should be exposed to all of these devices for controlling the temperature or condition of the air at the same time, or, rather, that all of said devices should be in operation simultaneously, as only one or certain of them might be used to temper or medicate the air to the apartment as required, and any other equally well-known or suitable heating and cooling devices may be used in the cabinet other than those described; but each cabinet should be provided with means for medicating the incoming air and for heating and cooling it, to be used as needed.

The invention is particularly more desirable for small otherwise air-tight compartments for the reason that the temperature and quality of the entering air may be made to suit the requirements of each individual occupant. For instance, if the occupant of apartment No. 1 be ill he is at once easily isolated, the temperature arranged to suit his particular case, antiseptics placed in one or both of the receptacles in the cabinet for the purpose, or in case of lung or bronchial trouble the pulmonic inhalents may be employed and if the occupant of the next room or apartment No. 2 be in the enjoyment of good health he is isolated and can remain without fear of contagion and may order the temperature so that he may even be able to sleep under a blanket in hot weather, while the occupant of still another adjacent room or apartment No. 3 may at the same time order the temperature to be raised in his room to a high degree of summer heat or even higher. Occupant of another or fourth apartment, too, may be suffering from a contagious disease; but if the exhaust from all the apartments be properly arranged infection is improbable.

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

1. The combination, with a compartment, of an apparatus for ventilating and controlling the temperature and quality of the air therein, located in a wall of said compartment and provided with warming, cooling, and medicating devices, and a door for said apparatus exterior to the compartment, whereby the various devices of said apparatus may be regu-

lated without the necessity of the attendant entering the compartment, substantially as set forth.

2. The combination, with a compartment, of a cabinet or casing located in one wall of the compartment and provided with a door exterior thereto, a passage through the cabinet or casing provided at one end with an outer air-inlet and discharging into the compartment at the other, and heating, warming, and medicating devices within the passage in the cabinet or casing, substantially as set forth.

3. An apparatus for the purpose set forth, consisting in the cabinet or casing provided with a passage leading through it from its inlet to its outlet, a medicament receptacle or holder in the passage, and a valved steam-heater and a refrigerating-coil within the passage between said receptacle and the outlet end of the passage, substantially as set forth.

4. The combination, with the cabinet S, having air-circulating passages within it, an air-inlet *b*, and separate air-outlet *c*, of one or more receptacles H for medicaments, a steam-radiator I, and a refrigerating-coil J, arranged successively within said circulating-passages, essentially as shown and described.

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Witnesses:
M. C. WARNER,
J. N. COOKE.