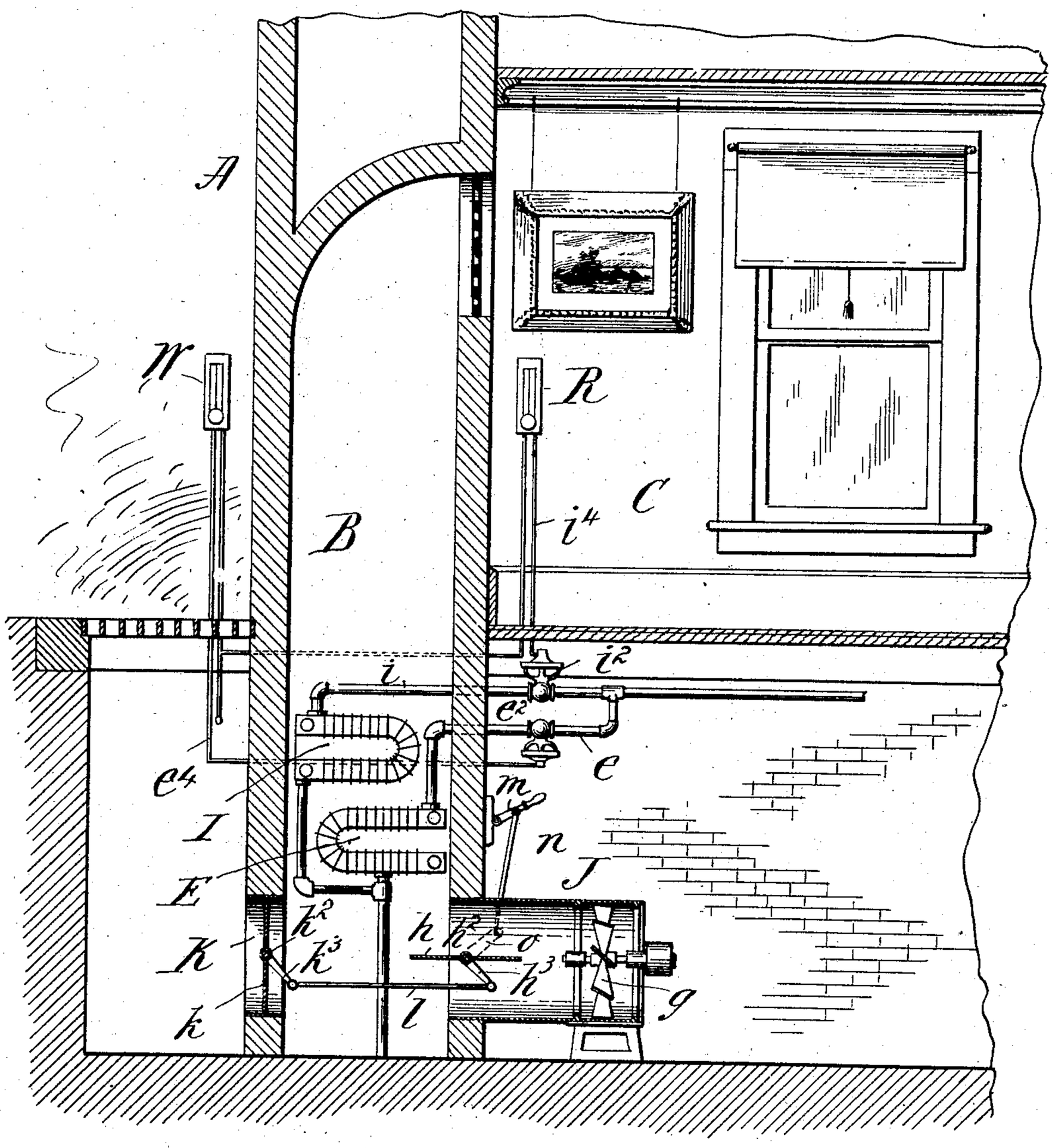
No. 765,423. PATENTED JULY 19, 1904.

E. GLANTZBERG.

HEATING AND VENTILATING APPARATUS.

APPLICATION FILED APR. 1, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

ERNST GLANTZBERG, OF SPRINGFIELD, MASSACHUSETTS.

HEATING AND VENTILATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 765,423, dated July 19, 1904.

Application filed April 1, 1903. Serial No. 150,597. (No model.)

To all whom it may concern:

Be it known that I, ERNST GLANTZBERG, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Heating and Ventilating Apparatus, of which the following is a full, clear, and exact description.

This invention relates to improved apparatus for heating and ventilating, having for its object to acquire especially a better and more equable maintenance of a desired temperature within an apartment or series of apartments, the air to be introduced into the apartment subject to controlled heating arrangements therefor being always fresh and pure as taken either from the exterior of the building or otherwise.

A prominent characteristic of this invention is found in the arrangement within an air-supplying flue leading to a room of separate steam-heated radiators having at and for the respective steam-inlet supply-pipes therefor valves, preferably of the kind known as "diaphragm-operated" valves, together with separate thermostats, one located within the apartment and subject to the temperature changes therewithin and the other located outside of the building and subject to the temperature or weather changes, each said thermostat being operatively connected with the controllers of the respective valves, whereby the radiators will heat the air in transit through the air-flue leading to the apartment, as the heating thereof may be controlled or regulated by the temperature condition both within the room and out of doors.

Features of invention furthermore reside in combinations and arrangements with the flue having the thermostatically-controlled air-heating apparatus therein of air-blowing and air-damping devices, as hereinafter set forth.

An illustration of my improved heating and ventilating apparatus is provided in the accompanying drawing, in which the same is shown in conjunction with a sectional elevation of a portion of a building having an air-supplying flue leading from a lower portion into a room therein.

In the drawing, A represents a portion of a building having in the wall thereof an air-flue B, which leads from its air-receiving location in the basement, through a portion of the building, to a room thereabove.

Located in the lower portion of the air-flue B are radiators I and E, for which i and e are the steam inlet and supply pipes, having, respectively, the valves i^2 and e^2 for closing and opening, more or less, the steam passage-way through each of said steam-pipes, these valves being advantageously automatic controller-valves of the diaphragm type.

R represents the thermostat, located in the apartment C and having operating connection i^4 with the diaphragm-valve i^2, and W indicates another thermostat at the exterior of the building, having operating connection e^4 with the diaphragm-valve e^2. Manifestly excessive heat in the room C will result in such an operation of the valve i^2 as to decrease the heating action of the radiator I, lowering of the temperature in the room being operative to increase the heating effect of such radiator I, and the radiator E is independently controlled by the "weather-thermostat," so that in extremely cold weather the radiator E will receive a maximum steam-supply therein, while in mild weather such radiator will receive little or no steam therein.

The radiators are preferably located in or near the base of the flue B, which supplies air to one or to a series of rooms and connected with the flue below the radiators as an air-conduit J, having a fan or blower g therein and having a damper h for opening and closing the conduit J.

K represents an entrance-opening for air leading from the exterior of the building through the wall at the lower portion thereof, also to the base of the flue below the radiators, and this opening has a damper k, the dampers h and k being supported on journal-rods h^2 and k^2, each of which has a lever-arm h^3 and k^3, which are connected by the link or rod l, the latter and the levers being so relatively arranged to the damper-rods that when one

damper is open the other will be closed, and vice versa.

An operating connection is provided to simultaneously operate both dampers, the same as shown consisting of a lever *m*, having an accessible location connection *n* with a second lever *o* on one of the damper-rods.

By changing the position of the lever *m* the one damper will be open and the other closed, or both dampers may be partially open, so that it is possible to establish an air-supply as blown into the base of the flue from within the basement or as drawn into the base of the flue from out of doors to be subjected to the heating action of both radiators as controlled by the temperature conditions both within and outside of the apartment to be heated and ventilated, and of course a somewhat restricted quantity of air may be supplied at the base of the flue under the radiators from both within the basement and the exterior of the building.

I claim—

1. In an indirect air-heating apparatus, a building having an air-supply flue leading to an apartment therein, separate heating devices located in said flue, separate controlling means for each heating device, and a separate thermostat for each controller, one located within the said apartment and subject to the temperature changes therewithin, and the other located outside the building and subject to the weather temperature, each thermostat being operatively connected with the controlling means of its respective heating device, the arrangement being such that each heating device is thermostatically controlled, one from within the building and the other from without.

2. In an indirect air-heating apparatus, a building having a flue leading from the outer atmosphere into an apartment within the building, separate steam-heating radiators located in the lower portion of said flue, independent steam-inlet supply-pipes for said radiators, a controller-valve for each steam-supply pipe, a separate thermostat for each controller-valve, the thermostat for the controller-valve of one radiator being located within the apartment and subject to the temperature changes therein, and the thermostat for the controller-valve of the other radiator being located outside of the building and subject to the weather temperature, and each thermostat having an independent operative connection with its controller-valve, the arrangement being such that each radiator is thermostatically controlled, one from within and the other from without the building.

3. In an indirect air-heating apparatus, a building having an air-supply flue leading from the basement thereof to an apartment above the basement, said flue communicating at its base by separate openings with the outer atmosphere and with an apartment in the basement of the building, separate valves for reversely controlling said flue-openings, and means common to both of said valves for simultaneously opening one and closing the other, and vice versa, separate steam-heating radiators located in the lower portion of said flue, independent steam-supply pipes for said radiators, a controller-valve for each steam-supply pipe, a separate thermostat for each controller-valve, the thermostat for the controller-valve of one radiator being located in the apartment and subject to the temperature changes therein, and the thermostat for the controller-valve of the other radiator, being located outside of the building and subject to the weather temperature, and each thermostat having an independent operative connection with its controller-valve, the arrangement being such that each radiator is thermostatically controlled, one from within and the other from without the building.

Signed by me at Springfield, Massachusetts, in presence of two subscribing witnesses.

ERNST GLANTZBERG.

Witnesses:

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WM. S. BELLOWS.