

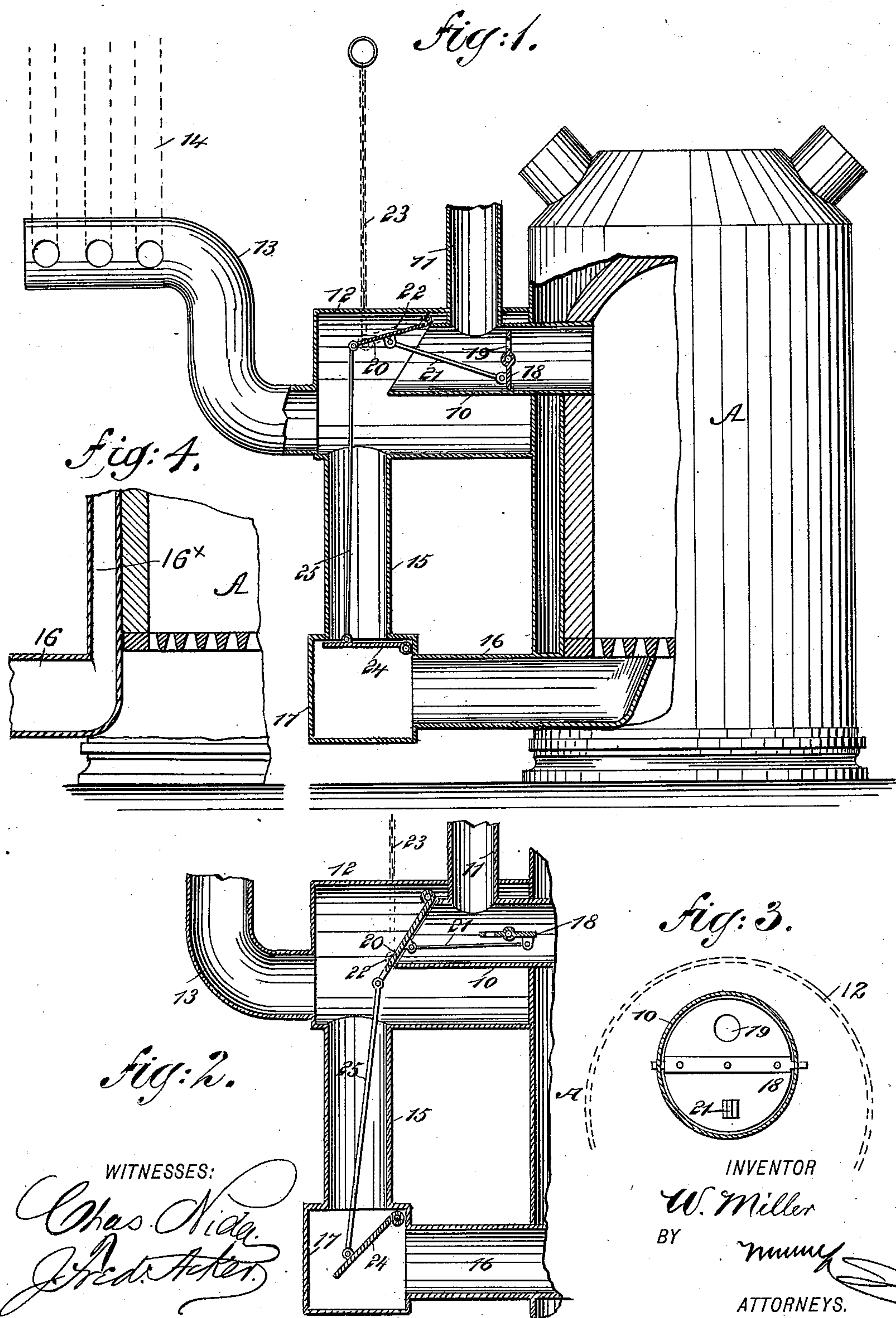
(No Model.)

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## VENTILATING ATTACHMENT FOR HEATERS.

No. 548,079.

Patented Oct. 15, 1895.





# UNITED STATES PATENT OFFICE.

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## VENTILATING ATTACHMENT FOR HEATERS.

SPECIFICATION forming part of Letters Patent No. 548,079, dated October 15, 1895.

Application filed February 6, 1895. Serial No. 537,498. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM MILLER, of New York city, in the county and State of New York, have invented a new and Improved Ventilating Attachment for Heaters, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in ventilating attachments for heaters, and has for its object to provide a device of this character of a novel and inexpensive construction by means of which a portion or all of the apartments of a building may be conveniently and thoroughly ventilated.

The invention consists in a series of branch pipes leading from the rooms or apartments to be ventilated, a heater, an air flue or pipe connected to and supplied with air from said branch pipes, a valved connection between the fire-pot of the heater and said air-flue, a smoke pipe or flue having valved connections with both the heater and the air-flue, and means for controlling said valved connections in such a way that the vitiated air is drawn from the apartments or rooms to be ventilated in substantially a uniform manner.

The invention also contemplates certain novel features of the construction, combination, and arrangement of the several parts of the improved ventilating apparatus whereby certain important advantages are attained and the device is made simpler, more easily operated, and otherwise better adapted for use than other similar devices heretofore employed, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

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

Figure 1 is a side view of a heater, which may be of any preferred form, provided with my improvements, the attachment constituting my invention being shown in vertical axial sections. Fig. 2 is a fragmentary view showing the attachment in vertical axial section, the parts being represented in positions different from the positions seen in Fig. 1; and Fig. 3 is an enlarged detail view showing the construction of the smoke-pipe damper or valve controlling the connection between the

smoke-flue and the smoke pipe or outlet of the heater. Fig. 4 is a fragmentary sectional view showing a modified arrangement of the device wherein the vitiated air withdrawn from the apartments to be ventilated is admitted to the hot-air space of the heater to be heated and returned to the room.

In the views, A represents the heater, which may be of any variety, and may be a hot-air or steam heater, and 16 represents the air-supply pipe leading into the fire-pot of the same below the grate, said air-supply pipe connecting at its outer end with a valve-box 17, from which extends upward a second air-pipe 15, the upper end of which communicates with the base portion of a drum 12, herein shown as attached to the side of the heater A.

The drum 12 is in communication with the main air pipe or flue 13, which is connected to a series of branch pipes 14 of any number, these branch pipes leading from the various rooms or apartments to be ventilated and having their mouths communicating with said apartments by preference near the floor and covered over in any way—as, for example, by means of gratings. The drum 12 is arranged to surround the said pipe or outlet 10 of the heater A, this pipe 10 being in communication with the smoke-flue 11, leading to the chimney, and having its outer end open, as clearly seen in the drawings, and adapted for communication with the drum 12, being provided with a valve 22, pivoted at one side of said open end and adapted, when lowered to the position seen in Fig. 2, to completely close the same.

The smoke pipe or outlet 10 of the heater A is also provided between the heater and the smoke-flue 11 with a second valve or damper 18, pivotally mounted therein and connected to one end of a link or rod 21, the opposite end of which is connected to the valve 20 at the open end of said smoke pipe or outlet in such a way that when the said valve 20 is manipulated, as will be hereinafter explained, so as to stand in a closed position, as seen in Fig. 2, said valve 18 will be in an open position, and vice versa, and the valve 18 is provided with an aperture 19 in it to permit the passage through it of smoke at all times, even in case the valve be in its closed position.

The valve 20 is connected to the end of a



chain 23, which may be arranged to extend up to any of the apartments of the building or may be otherwise arranged so as to be conveniently operated, and when said chain 23 is drawn upward it is obvious said valve 20 will be opened more or less and at the same time the valve 18 will be more or less closed, and when said chain is released the valve 20 will fall by gravity and be closed and will act by its connection with the valve 18 to open the same.

The valve 20 is connected to the upper end of a second link or rod 25, which extends down through the vertical pipe 15 and is connected to a valve 24 in the air-box 17, said valve 24 being arranged to control the lower end of said pipe 15, when it communicates with the box 17, in such a way that when the valve 20 is opened the valve 24 will be in a closed position and when the valve 20 is closed the valve 24 will be open.

In operation, when it is desired to kindle a fire, or when it is desired that the fire in the heater shall burn vigorously, the chain 23 is released, so that the valve 20 falls by its weight, and by its connections with valves 18 and 24 acts to open said valves, so that a free supply of air from the air-flue 13 (said air being drawn from the apartments to be ventilated by way of branch pipes 14) is given to the heater by way of pipes 15 and 16, and a free outlet is provided for the products of combustion by way of smoke pipe or outlet 10 to the smoke-flue 11. When the fire is desired to be reduced, the chain 23 is drawn up, so as to more or less open the valve 20 and more or less close the valves 18 and 24, so that the supply of air to the fire-pot of the heater will be more or less cut off, and the outlet to the chimney will also be more or less cut off by the closing of the respective valves 24 and 18, and at the same time it will be seen that the valve 20, being opened, allows the excess of air supplied to pipe 13 from the branch pipes 14 over what is supplied to the heater to pass through the open outer end of the smoke-pipe 10 to the smoke-flue 11, and so to the chimney.

By this construction it is evident that the vitiated air is drawn from the various apartments in a substantially uniform manner, and either fed to the heater or discharged by way of the chimney at all times, no matter whether the fire in the heater be low or otherwise.

From the above description of my improvements it will be evident that the invention is susceptible of considerable modification without material departure from its principles and spirit, and for this reason I do not wish to be understood as limiting myself to the precise construction and arrangement herein set forth. For example, in some cases the pipe 16 may, instead of being connected with the fire-pot of the chimney, be in communication with one of the air-flues of the heater, so that the air is caused to circulate from the room through pipes 13, 14, 15, and 16 to the heater-

flue and back to the room. This arrangement is shown in the fragmentary sectional view, Fig. 4, wherein the pipe 16 is shown as communicating with the hot air space or flue 16<sup>x</sup> of the heater.

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

1. A device of the character described, comprising a smoke flue, a heater provided with a smoke outlet having connection with said smoke flue, a valve controlling the smoke outlet of the heater, an air flue adapted to draw air from apartments to be ventilated, also having connection with said smoke flue, a valve controlling the connection between said air pipe and the smoke flue, and means for simultaneously actuating said valves to move one valve into closed and the other into an open position, substantially as set forth.

2. A device of the character described, comprising a smoke flue, a heater provided with a smoke outlet having connection with said smoke flue, a valve controlling the smoke outlet of the heater, an air flue adapted to draw air from apartments to be ventilated, having connection with said heater and also having connection with the smoke flue, valves controlling the connections between the air flue and heater and between the air flue and smoke flue, and means for simultaneously actuating said valves to move the valve controlling the connection between the air flue and the smoke flue into one position and to move the valves controlling the smoke outlet of the heater and the connection between the air flue and the heater into the other position, substantially as set forth.

3. A device of the character described, comprising a smoke flue, a heater provided with a smoke outlet having connection with said smoke flue, a valve controlling the smoke outlet of the heater, an air flue adapted to draw air from an apartment to be ventilated, also having connection with said smoke flue, a valve controlling the connection between the air flue and the smoke flue, a link connection between said valves whereby when one is opened the other is closed, and means for actuating one of the said valves, substantially as set forth.

4. A device of the character described, comprising a smoke flue, a heater provided with a smoke outlet having connection with said smoke flue, a valve controlling the smoke outlet of the heater, an air flue adapted to draw air from apartments to be ventilated, having connection with said smoke flue and also having connection with the heater, valves controlling the connection between the smoke flue and the air flue and between the air flue and the heater, and link connections between the valve which controls the connection between the air flue and the smoke flue and the other two valves, said connection being arranged when the first mentioned valve



is moved into one position to move the other valve to the other position, substantially as set forth.

5. A device of the character described, comprising a smoke flue, a heater having a smoke pipe provided with an open end and adapted for communication with the smoke flue at a point between said open end and the heater, a drum inclosing said smoke outlet of the heater at the open end thereof, an air flue connected to and adapted to supply air to said drum, a valve arranged to close the open end

of said smoke outlet of the heater, a second valve controlling said smoke outlet at a point between the heater and the smoke flue, and a connection between said valves adapted when one valve is moved into one position to move the other valve into the other position, substantially as set forth. 15

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Witnesses:

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