

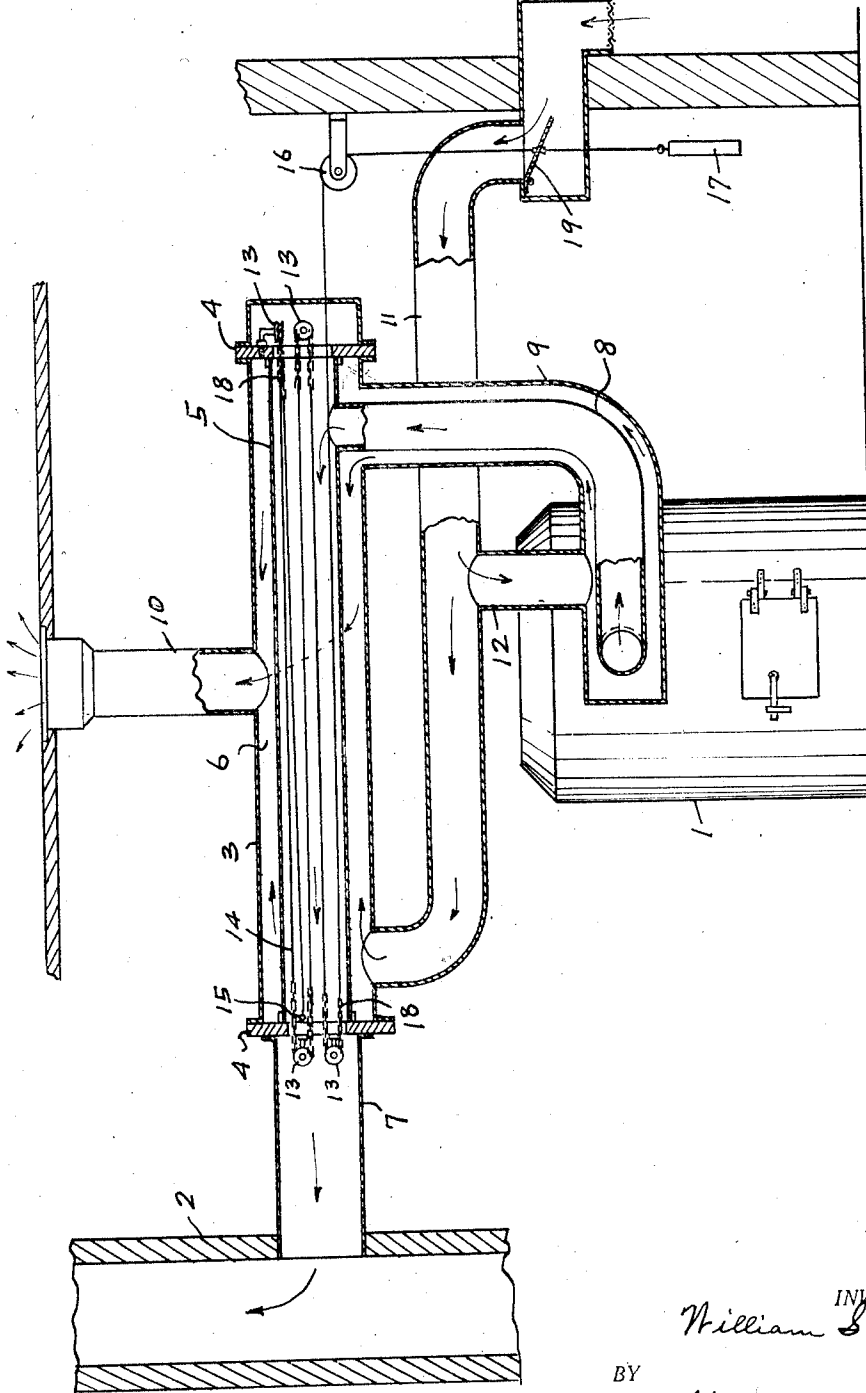
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AUXILIARY HEATING ATTACHMENT FOR FURNACES

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AUXILIARY HEATING ATTACHMENT FOR FURNACES.

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This invention relates to new and useful improvements in an auxiliary heating attachment for furnaces.

One object of the invention is to provide an auxiliary heating attachment for hot air furnaces whereby the heat from the hot air and smoke passing from the furnace to the smoke stack, or smoke outlet flue may be utilized.

Another object of the invention is to provide a furnace attachment of the character described embodying an air inlet pipe for admitting outside air and passing the same around the smoke pipe or flue and discharging the same into the room or building to be heated, with a damper for controlling said air inlet pipe.

With the above and other objects in view this invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawing, wherein:—

The figure shows a vertical sectional view of the apparatus, as applied to a hot air furnace.

Referring now more particularly to the drawing, the numeral 1 designates a hot air furnace, as a whole. The main hot air pipes through which the heated air may be distributed throughout the building have not been shown, as they are in common use, and their construction and arrangement are well known and they form no part of this invention.

The numeral 2 designates the smoke stack, or smoke flue, through which the smoke is ultimately discharged.

The numeral 3 designates an outer drum, or jacket having the annular end plates 4, 4, and within and spaced from the walls of this jacket, with its ends anchored to the respective end plates 4 and concentric therewith, there is an inner drum 5 forming an air circulating chamber 6 between said drums. The inner drum is connected into the main smoke flue 2 through the connecting pipe 7, one end of which projects through the wall of the flue 2 and the other end of which is anchored to the adjacent end plate 4 of the drum 3.

Leading from the combustion chamber of the furnace 1 there is a smoke pipe 8 which connects into the end of the inner drum 5 remote from the smoke stack 2, and this pipe

8 is surrounded and enclosed by a jacket 9 which is spaced away from said pipe and which enters the corresponding end of the air chamber 6, and leading out from said air chamber 6 and entering the room or building to be warmed there is a hot air delivery pipe 10. Leading in from the free air there is an air inlet pipe 11 which enters the other end of the chamber 6 and leading therefrom there is a branch pipe 12 which is connected into the jacket 9.

The end plates 4, 4, have the pulleys as 13, attached thereto and there is a damper controlling element designated generally by the numeral 14 which is connected, at one end, to one of the end plates 4, at the point 15, and this element is located in the inner drum 5 and is threaded around the pulleys 13 and its other end is extended and formed flexible and works over a pulley 16 and carries a weight 17. The sections of the element 14 which work around the pulleys 13 are flexible, as at 18, and between these flexible sections said element may be formed of metal rods which are responsive to varying temperatures.

The air inlet pipe 11 has within it a downwardly opening damper 19 to which the depending end of the element 14 is attached.

When the damper 19 is open free air will enter through the pipe 11 part of which will enter one end of the chamber 6 directly from said pipe and the remainder of said air will pass through the branch pipe 12 and the jacket 9 and will enter the other end of said chamber 6. The air so entering will be warmed by the smoke pipe 8 and the inner drum 5 and will pass thence through the delivery pipe 10 into the room to be heated. The heat from the hot air and smoke passing out from the furnace through the smoke stack will, in a measure thus be conserved.

The length of the element 14 will vary in accordance with the temperature, within the inner drum 5. When the air passing from the furnace through this drum is hot the element 14 will be extended permitting the weight 17 to open the damper 19, but as the temperature in said drum lowers, said element will contract, correspondingly closing said damper, to the end that air will be admitted only when the drum 5 is hot enough to heat the air passing around it into the room to be heated and will be shut off when the drum 5 has not sufficient temperature to heat the inflowing air.

What I claim is:—

In a device of the character described adapted for use with a furnace, an outer drum having annular end plates, an inner drum whose ends are anchored to the respective end plates and whose walls are spaced from the outer drum forming an air circulating chamber between said drums, a smoke outlet leading from the inner drum, a smoke
10 pipe adapted to lead from the combustion

chamber of the furnace and connected into the inner drum, a jacket surrounding and spaced from said smoke pipe and entering one end of said chamber, an air inlet pipe connected into the other end of said chamber, a branch pipe leading from said air
15 inlet pipe and connected into said jacket.

In testimony whereof I have signed my name.

WILLIAM SCHAU.