

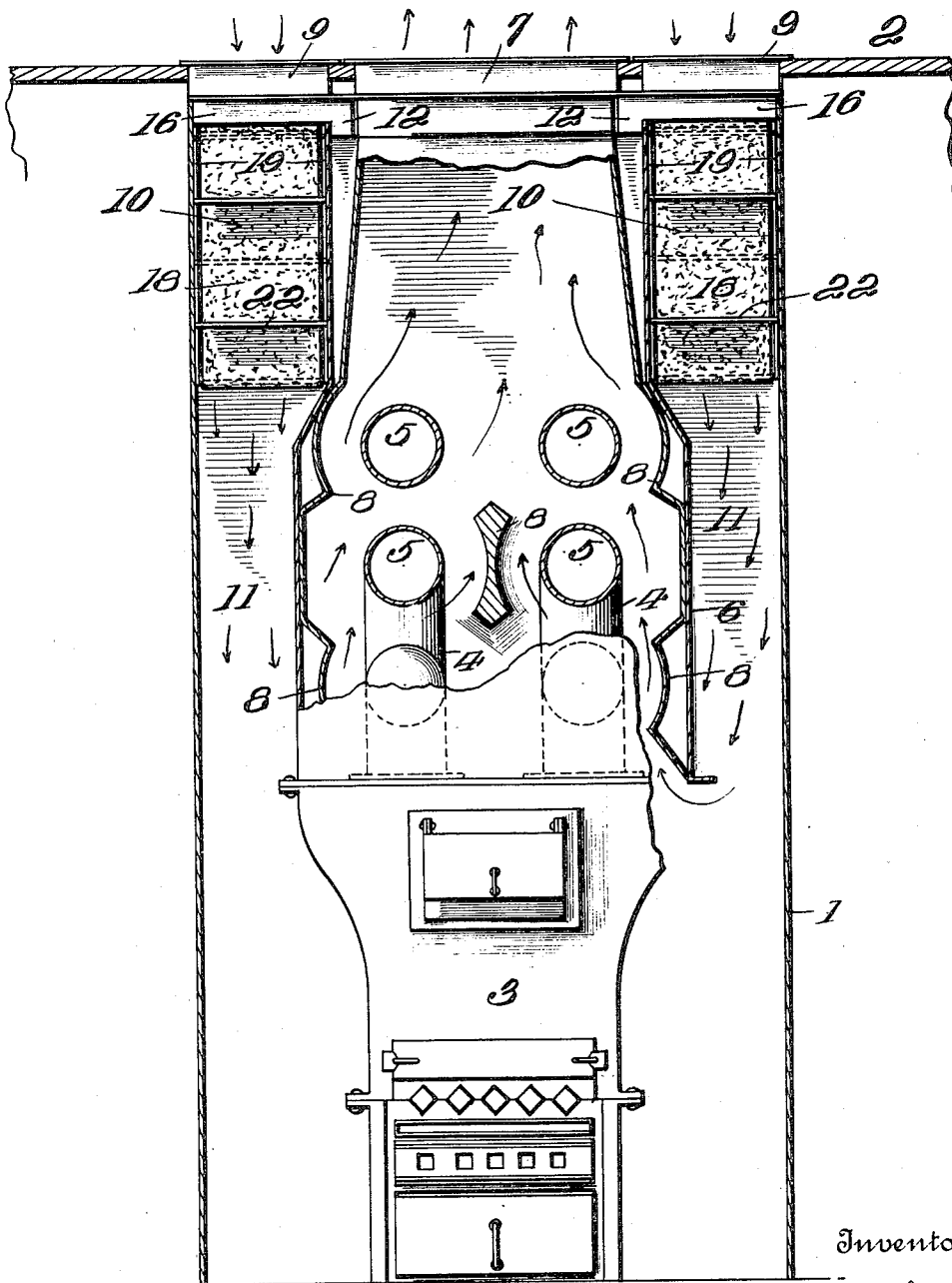
W. F. COX.  
AIR CLEANING AND MOISTENING DEVICE.  
APPLICATION FILED SEPT. 10, 1918. RENEWED JUNE 16, 1921.

1,436,483.

Patented Nov. 21, 1922.

3 SHEETS—SHEET 1.

*Fig. 1.*



Inventor

*William F. Cox.*  
*Witness*  
Attorney

By

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3 SHEETS—SHEET 2.

*Fig. 2.*

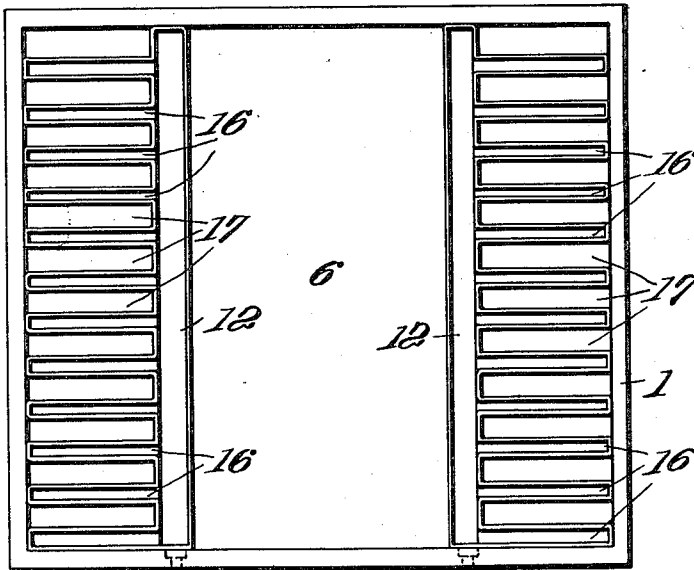
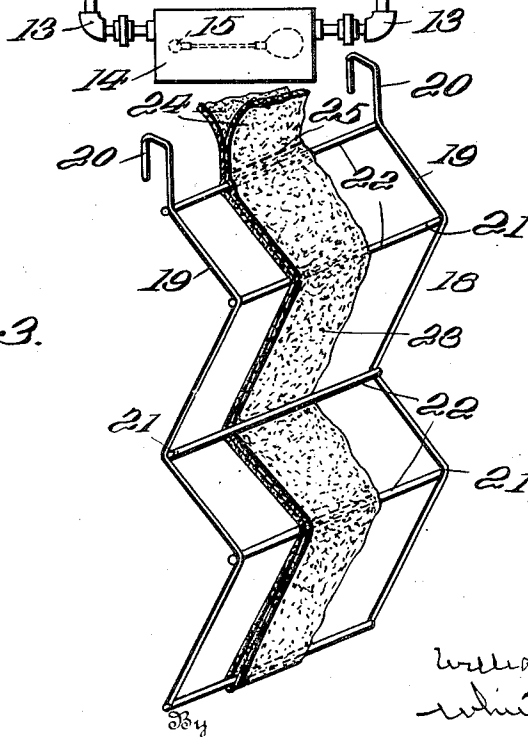


*Fig. 3.*

Inventor  
William F. Cox  
Whitaker & Tamm  
Attorney

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3 SHEETS—SHEET 3.

*Fig. 4.*

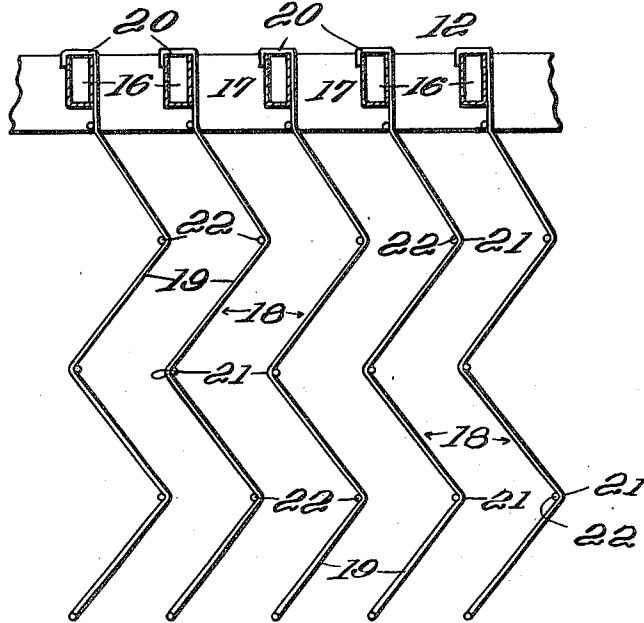
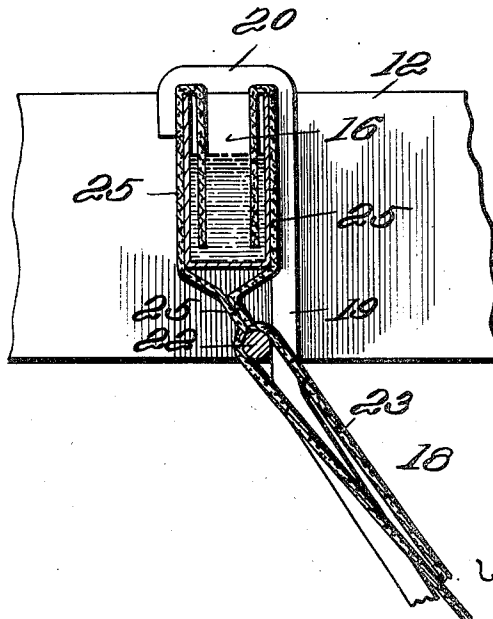


*Fig. 5.*



By

Inventor

William F. Cox

*Whitaker & Treadwell*

Attorney

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1,436,483

# UNITED STATES PATENT OFFICE.

WILLIAM F. COX, OF DANVILLE, VIRGINIA, ASSIGNOR TO SANITARY HEATING AND VENTILATING COMPANY, INCORPORATED, OF DANVILLE, VIRGINIA, A CORPORATION OF VIRGINIA.

## AIR CLEANING AND MOISTENING DEVICE.

Application filed September 10, 1918, Serial No. 253,412. Renewed June 16, 1921. Serial No. 478,212.

*To all whom it may concern:*

Be it known that I, WILLIAM F. COX, citizen of the United States, residing at Danville, in the county of Pittsylvania and State of Virginia, have invented certain new and useful Improvements in Air Cleaning and Moistening Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same.

This invention has for its object to improve that class of heating plants, known as pipeless or single pipe furnaces. With such plants the heater is arranged below the first floor of the house and the hot air rises through a central register in the first floor while the cold air descends to the furnace through registers arranged at the sides of the central register.

With a heating plant of this character, it will be seen that the same air is used continuously, for the heated air rises and passes through the rooms of the house and becoming cold descends and is again heated and re-used. This continuous using of the same air is unsanitary and, therefore, my invention contemplates providing such a heating plant with means for cleaning and moistening the air as it is fed to the furnace, so that the heated air will be free from deleterious matters.

While I have shown the air cleaning and moistening apparatus used in connection with the single pipe heater, I wish it understood that I do not confine myself to such application as I am aware that the same may be used in connection with ventilation appliances or with other heating plants.

My air cleaning and moistening apparatus is of simple and inexpensive construction and it may be readily assembled for installation, or taken apart for the purpose of cleaning or renewing the parts.

The invention consists in the novel features hereinafter described in connection with the accompanying drawings, in which I have shown one form or embodiment of the invention, and the improvements are more particularly pointed out in the appended claims.

Referring to the drawings:

Fig. 1 is a transverse vertical sectional view of a portion of the floor of a house and

a similar view of the furnace casing and the air conduits. The furnace is shown located in the casing and the air heating flue is shown as extending from the furnace in order to carry off the heated gases.

Fig. 2 is a top plan view of the air conduits and liquid pans, the registers being removed for the purpose of clearness.

Fig. 3 is a perspective view of one of the air cleaner baffle supports and a portion of one of the baffles.

Fig. 4 is a detail showing the manner in which the baffle supports are carried by the liquid pans.

Fig. 5 is a detail showing the upper end of the baffle divided and passing into both sides of one of the liquid pan troughs, whereby a double wick is provided for each air cleaning baffle.

In the drawings 1 represents a casing which is preferably located in the cellar of a house and 2 designates the first floor of the house. A furnace 3 is located in the casing and is preferably fed and controlled from the exterior of the casing by extending the front of the furnace through the casing. The heated gases generated in the furnace are passed to the chimney of the house by means of flues 4, which have a number of horizontal portions 5. Located in the casing 1 is an air flue 6, which surrounds the flues 4 and has its bottom open to permit air to enter the flue 6. The air passing upwardly through the flue 6 is heated by the hot gases passing through the flues 4 and emerges from the flue through the central register 7. Baffles 8 are arranged within the flue 6 to insure the air being forced into contact with the heated flues 4.

Cold air enters the casing 1 by passing downwardly through the side registers 9, the air cleaners and moisteners 10, and the cold air conduits 11.

The air cleaners 10 are located in the cold air conduits 11 and as these cleaners are identical only one will be described.

My improved cleaning and moistening apparatus comprises a liquid pan 12 connected by means of a pipe 13 to a liquid supply tank 14 having a float control valve 15, which regulates the amount of liquid fed to the pan 12. The pan is provided with a series of spaced troughs 16 which communicate at one end with the pan and are supplied with

liquid by the pan. Located in the spaces 17 between the troughs are staggered baffles 18 for cleaning and moistening the air passing downwardly through the cold air conduits 11.

Each of these baffles consists of side rods 19, which are of zig-zag shape and terminate at their upper ends in hooks 20 that engage the troughs 16, as shown in Fig. 4, for supporting the baffle. The bends 21 of the side rods are connected to cross bars 22 for securing the side rods together. A doubled cloth 23 of absorbent material has its lower end passed around the lower cross bar, is arranged over the intermediate cross bars, and has its upper end connected by a fastening 25 to the top cross bar and is divided into two wicks 24. The wicks, as shown in Fig. 5, are arranged along the sides of the troughs 16 and are bent downwardly into the troughs, so that by capillary attraction, they will draw liquid from the troughs and feed it down the full length of the baffles.

If it is desired to remove a baffle, the hook 20 of the baffle is grasped and the baffle is raised upwardly through the space between adjacent troughs 16, and if it is desired to remove the cloth 23 from the frame formed by the rods 19, and bars 22, it is only necessary to remove the fastening 25 from the baffle and the cloth can then be unwound from its frame.

In operation, air will pass downwardly through the baffles and be directed in a staggered course, so that any particles of dust or the like carried by the air will be caught by the moistened surfaces of the

cloths. The air is thus cleaned and moistened and it descends until it reaches the bottom of the flue 6. The air then rises and is heated by the flues 4.

From the foregoing, it will be seen that I have combined a furnace of the type described, with means for cleaning and moistening the air fed to the furnace and that I have also provided a novel air cleaning and moistening device.

What I claim and desire to secure by Letters Patent is:—

1. An air cleaning and moistening apparatus comprising a liquid containing receptacle, staggered frames having hooks supported by said receptacle, and absorbent cloths covering said frames and having wicks resting in said receptacle for drawing liquid from the same.

2. An air cleaning and moistening apparatus comprising a liquid containing receptacle including spaced troughs, a series of vertically disposed staggered frames located beneath said receptacle and having hook-shaped upper ends engaging said troughs and absorbent baffles covering said frames and having wicks resting in said troughs for drawing liquid from the same.

3. In an air cleaning and moistening apparatus, a baffle comprising a frame consisting of staggered side rods having hook-shaped upper ends, cross bars connecting the side rods, and an absorbent material covering said frame and having a wick at its upper end.

In testimony whereof I affix my signature.  
WILLIAM F. COX.