

Aug. 24, 1926.

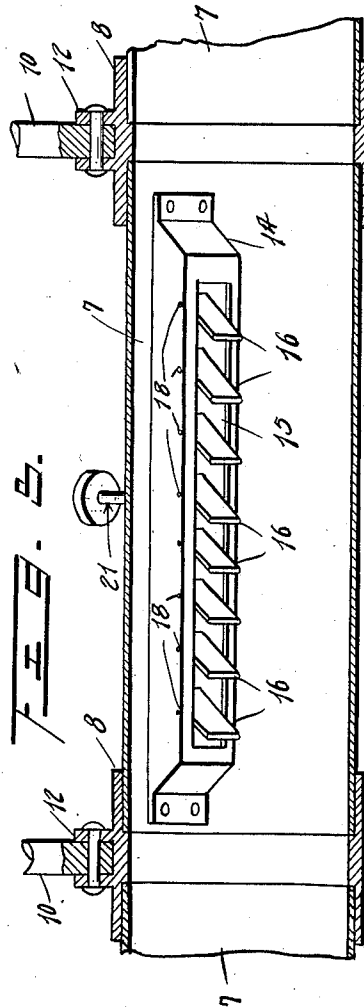
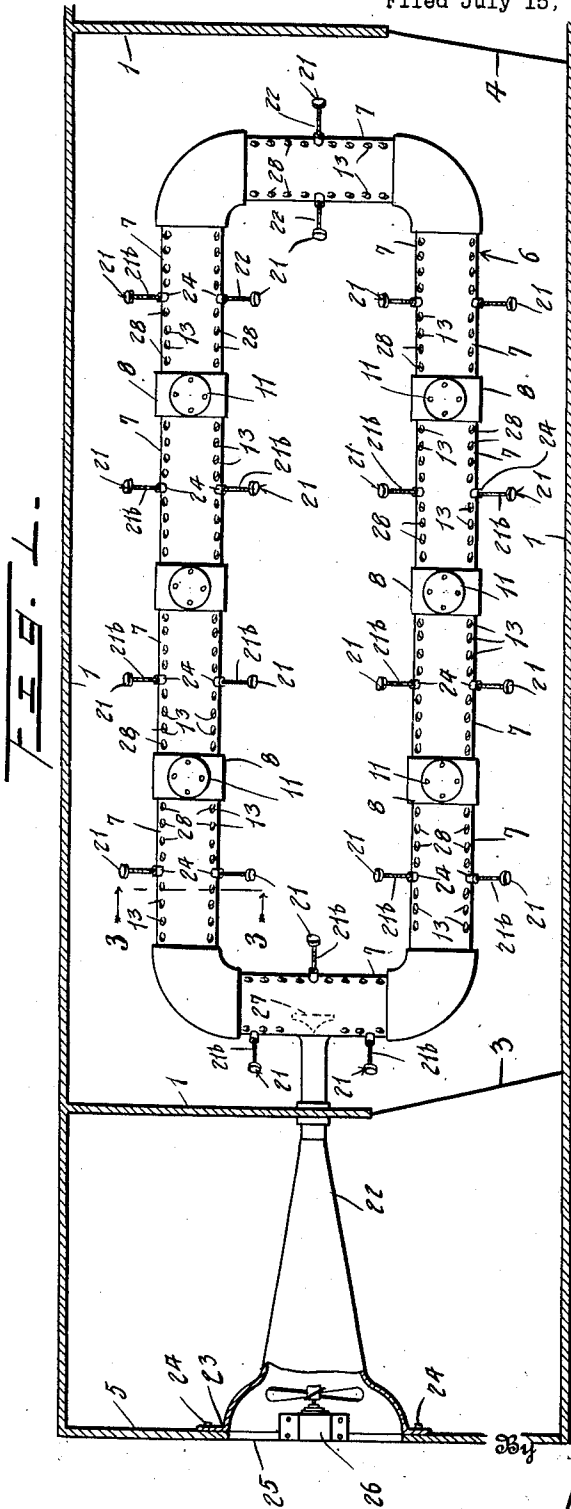
1,597,588

E. L. FAIRBANKS

VENTILATING AND COOLING SYSTEM

Filed July 15, 1924

2 Sheets-Sheet 1



Inventor

E. L. Fairbanks,

Attorney

Aug. 24, 1926.

E. L. FAIRBANKS

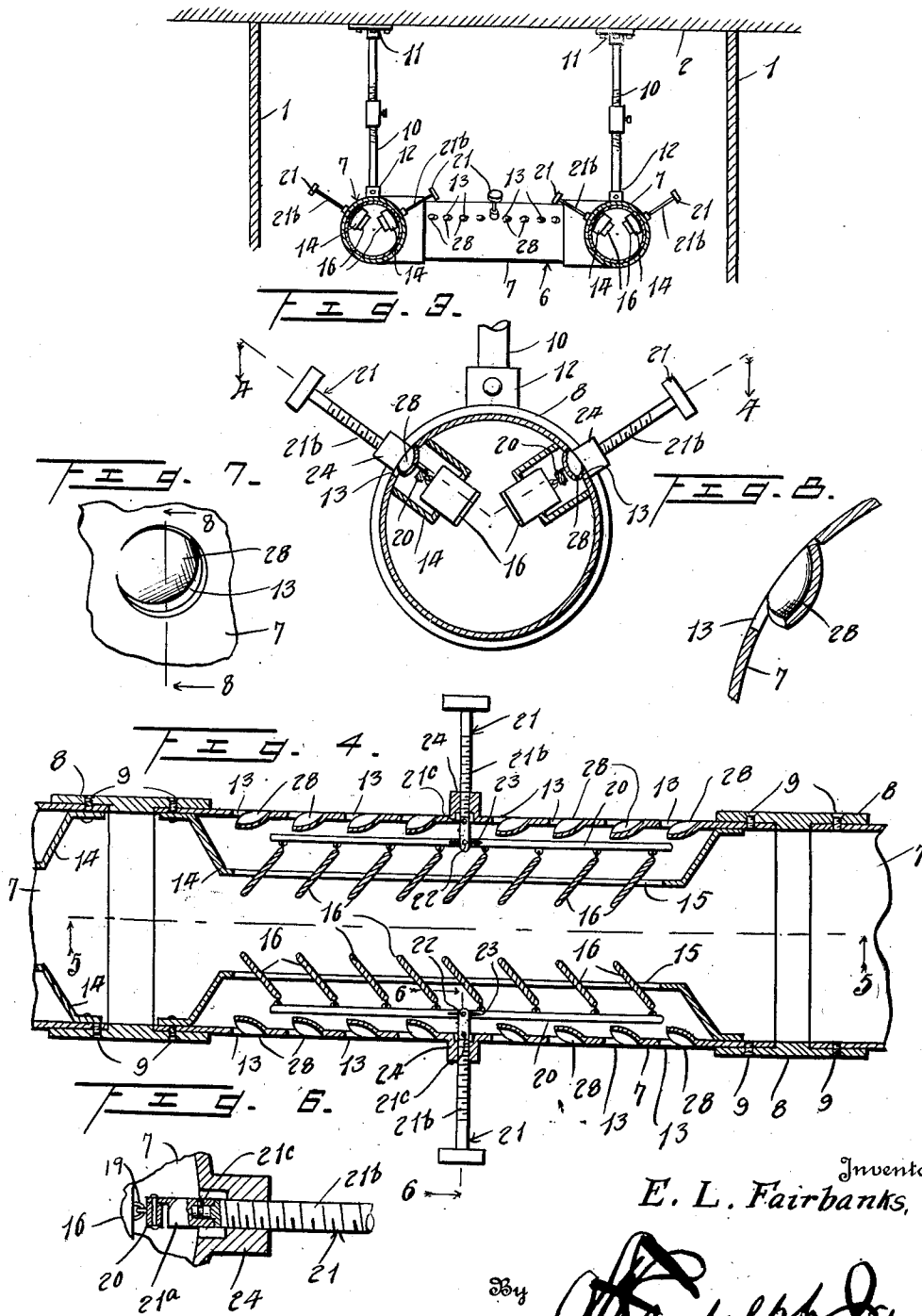
1,597,588

VENTILATING AND COOLING SYSTEM

Filed July 15, 1924

2 Sheets-Sheet 2

FIG. 2.



Inventor
E. L. Fairbanks,

By *A. J. Randolph, Jr.*
Attorney

UNITED STATES PATENT OFFICE.

EARL L. FAIRBANKS, OF MCGREGOR, COLORADO.

VENTILATING AND COOLING SYSTEM.

Application filed July 15, 1924. Serial No. 728,151.

This invention relates to cooling and ventilating systems, and has for one of its objects the provision of a novel and simple system of this character which shall include an endless air distributing pipe adapted to be suspended from the ceiling of the room to be cooled and ventilated and provided with lateral air discharge ports through which streams of fresh cool air will be directed into the room.

A further object of the invention is the provision of a cooling and ventilating system of the character stated wherein the air distributing pipe shall be equipped with means by which any number of the air discharge ports may be closed or partly closed so as to enable the air to be distributed about the room in the manner best calculated to produce the most effective results.

A still further object of the invention is the provision of a cooling and ventilating system of the character stated which shall be simple and durable, which may be readily secured in place in the room to be cooled and ventilated, and which may be maintained in operation at a comparatively low cost.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, wherein:

Figure 1 is a horizontal sectional view illustrating the application of my improved cooling and ventilating system,

Figure 2 is a vertical sectional view illustrating the manner in which the air distributing pipe of the system is suspended from the ceiling of the room to be cooled and ventilated,

Figure 3 is a detail vertical sectional view taken on the plane indicated by the line 3—3 of Figure 1,

Figure 4 is a detail sectional view taken on the planes indicated by the line 4—4 of Figure 3,

Figure 5 is a detail sectional view taken on the vertical plane indicated by the line 5—5 of Figure 4,

Figure 6 is a detail sectional view taken on the vertical plane indicated by the line 6—6 of Figure 4,

Figure 7 is a detail view showing the manner in which the air discharge ports and air deflectors are formed, and

Figure 8 is a sectional view taken on the plane indicated by the line 8—8 of Figure 7.

In the drawings, 1 designates the walls, 2 the ceiling, and 3 and 4 the doors of a room of a building, one of the outer walls of which is designated 5. The cooling and ventilating system comprises an endless air distributing pipe 6, which may be of rectangular or any other suitable formation, and which is adapted to be arranged in the room to be cooled and ventilated in the manner suggested in Figures 1 and 2. The pipe 6 comprises a plurality of sections 7 which are connected together by couplings 8. The ends of the pipe sections 7 are received in the couplings 8 and are secured therein by cap screws 9. The pipe 6 is suspended from the ceiling 2 of the room by hangers 10. The upper ends of the hangers 10 are secured in brackets 11 which are in turn secured to the ceiling 2, and the lower ends thereof are secured in sockets 12 carried by certain of the couplings 8.

The pipe sections 7 are each provided with their lateral sides with longitudinally extending rows of air discharge ports 13. A casing 14 is secured to the inner side of each pipe section 7 over each row of air discharge ports 13 therein. These casings 14 are provided with elongated slots 15 which establish communication between the interior of the pipe sections 7 and the discharge ports 13. Valve plates 16 through the medium of which the slots 15 may be either fully or partly closed to control the volume of air discharging through the ports 13 are pivotally mounted within the casings 14. Pins 18 are employed to pivotally mount the valve plates 16, and they extend through the casings 14 and centrally through the valve plates 16. When the valve plates 16 are in fully closed position they are arranged in overlapping contact with each other, and when they are in partly or fully opened position their outer portions extend into the pipe sections 7 in the manner illustrated in Figures 4 and 5. The valve plates 16 of each casing 14 are pivotally connected at their inner ends as at 19 to a rod 20. Control screws 21 which have threaded engagement with the pipe sections 7, are connected to the rods 20 by pins 22 carried by the control screws and slots 23 in the rods. The pipe sections 7 are provided with threaded bosses 24 for the reception of the control screws 21. The con-

nection between the valve plates 16 and the control screws 21 is such that when the control screws are turned inwardly the valve plates will be moved into closed position, and such that when the control screws are turned outwardly the valve plates will be moved into opened position. When the valve plates 16 are in partly or fully opened position they are arranged in a rearwardly inclined position with respect to the direction in which the air is traveling in the distributing pipe 6, so as to cause the air to pass into the casings 14 and thence out through the discharge ports 13. As shown in Figure 6, the control screws 21 comprise inner sections 21^a which are connected to the rods 20 and outer sections 21^b which have threaded engagement with the bosses 24. The control screw sections 21^a and 21^b are swivelly connected as shown at 21^c in order to prevent any turning strain on the inner sections 21^a and their connection with the rods 20 when the outer sections 21^b are turned to adjust the valve plates 16.

An outwardly flaring flue 22 extends from one end of the air distributing pipe 6 to the outer wall 5 of the building, and it is provided at its outer end with a flange 23 to permit it to be secured to this wall by bolts 24 or other suitable fastening elements. To establish communication between the flue 22 and the outside atmosphere, the wall 5 is provided with an opening 25, and to force air through the flue 22 into the distributing pipe 6 an electric fan 26 is mounted in the outer end of the flue. At the inner end of the flue within the air distributing pipe 6 is positioned a spreader 27 which divides the air discharging from the flue 22 into the distributing pipe 6 so as to cause the air to travel through all branches of the distributing pipe 6.

The air discharge ports 13 are formed by partly striking up portions of the pipe sections 7, and these portions 28 are bent inwardly and arranged at such an angle as to cause the air striking them to be deflected through the discharge ports.

From the foregoing description, taken in connection with the accompanying draw-

ings, it should be apparent that the current of air generated by the electric fan 26 will pass through the flue 22 into all branches of the distributing pipe 6. If all of the valve plates 16 are in the same partly or fully opened position equal streams of air will pass through the discharge ports 13 of each pipe section into the room. Should it be found desirable to cause more air to be discharged from any one or more of the pipe sections 7 than from the remainder of the pipe sections this may be done by fully or partly closing the valve plates 16 of the other sections through the medium of the screws 21.

It should be understood that the drawings are merely illustrative and do not pretend to give exact proportions. Furthermore, the said drawings are illustrative of a preferred construction, it being my expectation that various changes and modifications may be made without departing from the spirit and scope of the invention.

What is claimed is:—

1. A cooling and ventilating system including a distributing pipe provided with a series of discharge ports, a casing located within the pipe over the discharge ports and provided with a slot establishing communication between the interior thereof and the pipe, and means associated with said slot for controlling the amount of air entering the casing, said means comprising pivoted valve plates, a rod connecting the valve plates, a member pivotally connected to the rod, and a bolt threaded in the pipe and loosely connected to the member.

2. A cooling and ventilating system including a distributing pipe provided with a series of discharge ports, a deflector located within the pipe adjacent each discharge port, a casing located within the pipe over the discharge ports and deflectors and provided with a slot establishing communication between the interior thereof and the pipe, and means associated with said slot for controlling the amount of air entering the casing.

In testimony whereof I affix my signature.

EARL L. FAIRBANKS.