

[54] **BASEBOARD ELECTRIC HEATER SHIELD**

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[22] Filed: Jan. 3, 1972

[21] Appl. No.: 214,865

[52] U.S. Cl. 165/55, 98/40 C, 165/122,
165/137, 219/367, 219/368, 219/370

[51] Int. Cl. F24h 9/02

[58] Field of Search 165/55, 53, 123,
165/122, 137; 98/40 C; 219/368, 367, 366,
369; 237/79

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[57]

ABSTRACT

A readily removable enclosure for an electric baseboard heater and including structure for pumping air to be heated therethrough in intimate contact with the heat transfer surfaces of the baseboard heater. The air inlet for the housing or cover is disposed at one end thereof and the outlet is disposed at floor level and opens horizontally outwardly from the wall along which the electric baseboard heater extends. The low horizontal outlet for the cover enables the latter to be disposed behind drapes and to discharge heated air into the associated room through a vertically short zone extending along the heater beneath the lowermost marginal edge of the drapes which need be only slightly spaced above the associated floor structure.

7 Claims, 3 Drawing Figures

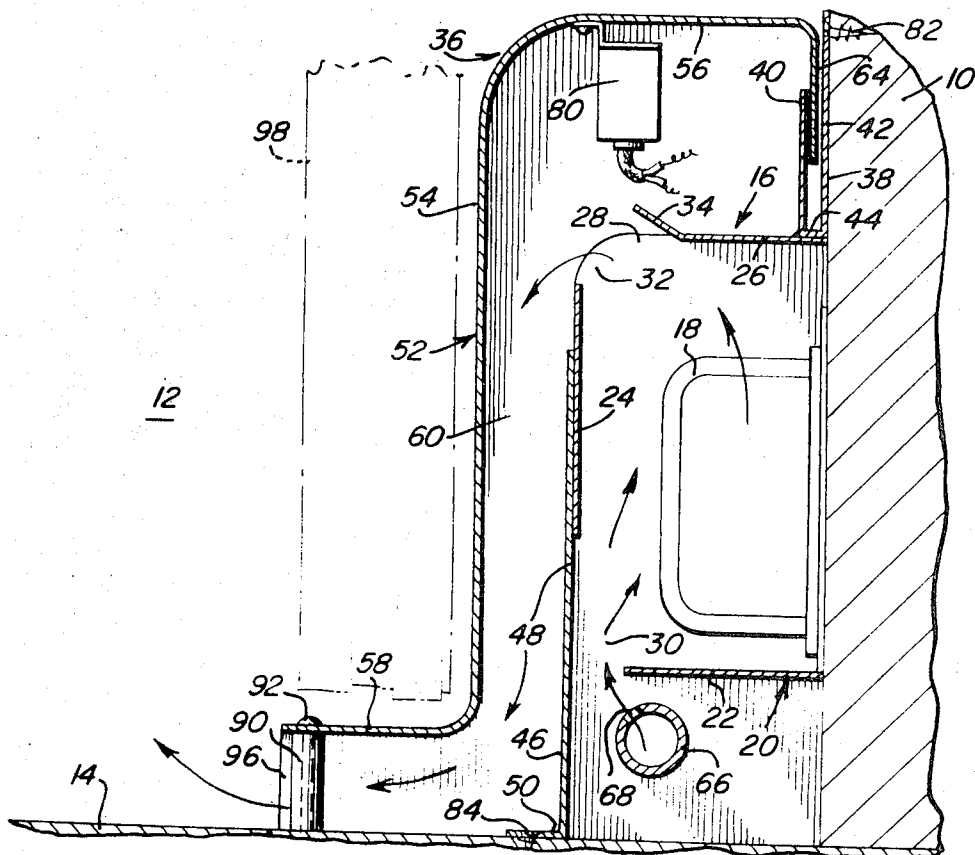


Fig. 1

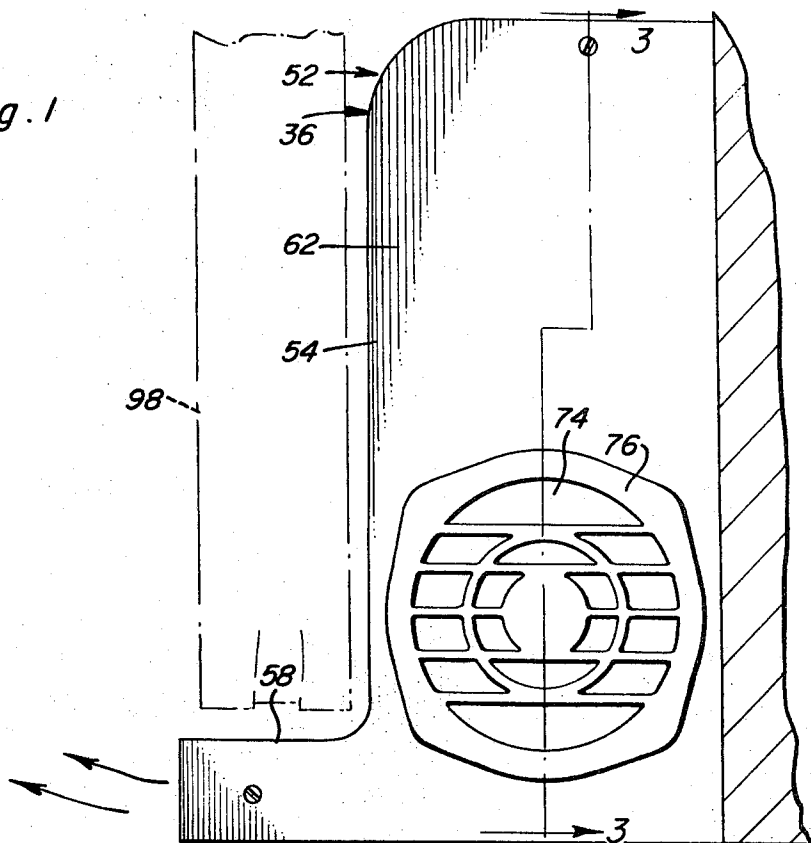


Fig. 2

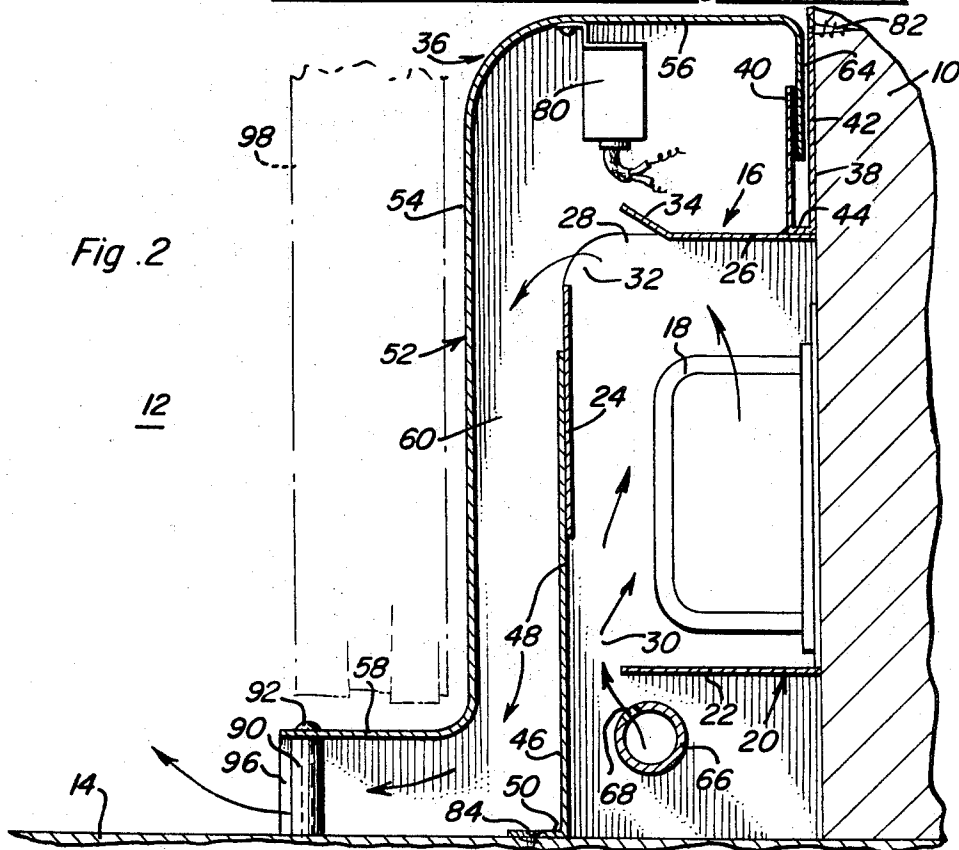
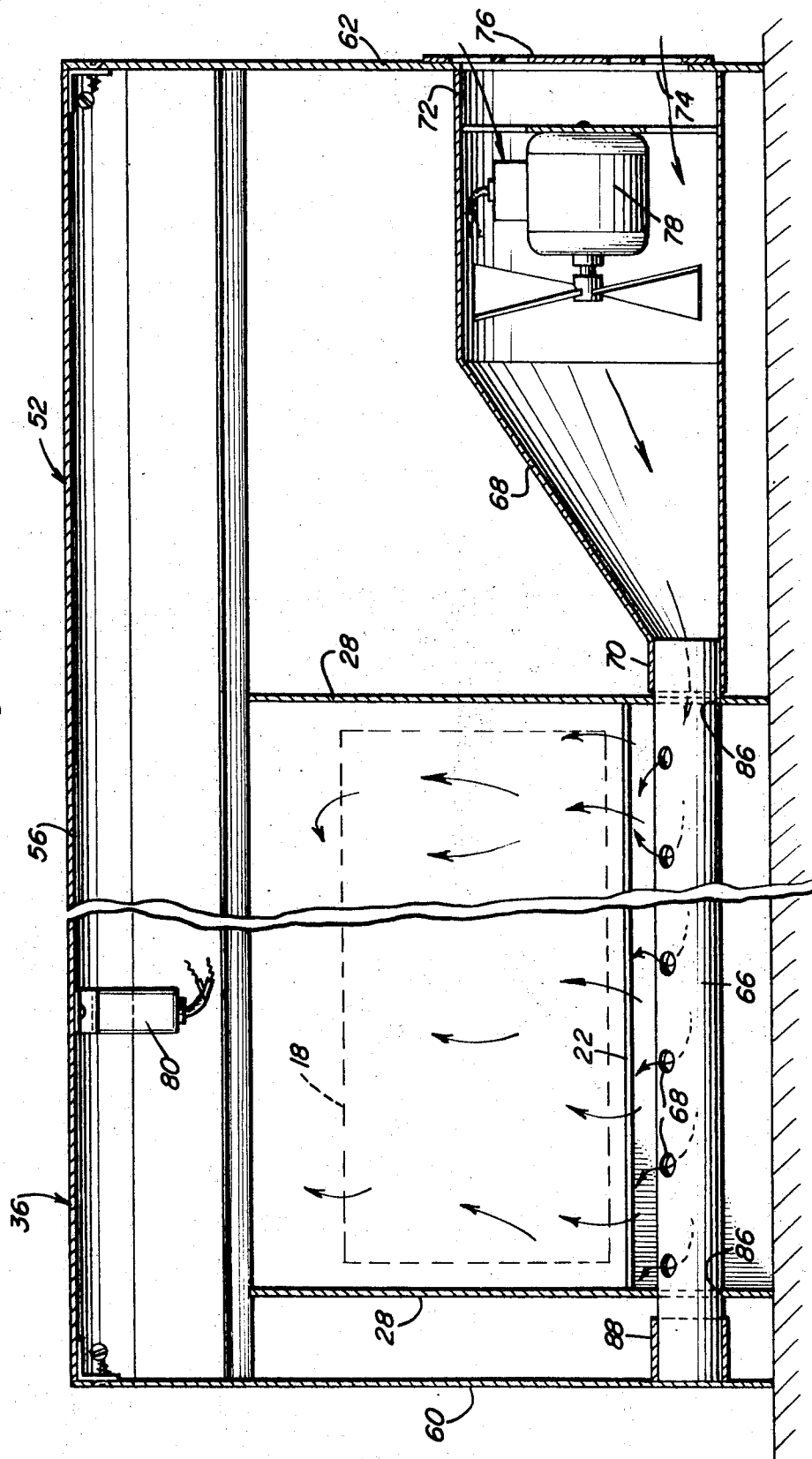


Fig. 3



BASEBOARD ELECTRIC HEATER SHIELD

The electric baseboard heater shield of the instant invention has been primarily designed to allow the utilization of substantially floor length drapes along a wall having an electric baseboard heater associated therewith without the drapes interfering with proper operation of the baseboard heater.

Conventional baseboard heaters rely primarily upon convection airflow to dissipate the heat generated into the associated room. However, if drapes are used along a wall equipped with a baseboard heater, the drapes fall in front of the heater and not only interfere with proper heating of the room but also constitute an extreme fire hazard.

It is accordingly the main object of this invention to provide a combined electric baseboard heater shield or housing and forced air system whereby air may be pumped through the housing in intimate contact with the heat transfer surfaces of the heater and be subsequently discharged horizontally inwardly toward the center of the room beneath the lower marginal edge of an associated drapery section.

Another object of this invention is to provide an electric baseboard heater shield that may be readily utilized in conjunction with conventional forms of baseboard heaters.

Still another object of this invention is to provide a baseboard heater shield or housing in accordance with the preceding objects and which may be utilized in conjunction with or in lieu of a conventional baseboard heater cover.

Another important object of this invention is to provide a forced air baseboard heater cover or housing that may be marketed for use in conjunction with baseboard heaters being installed.

A further object of this invention is to provide a forced air baseboard heater housing which may also be utilized in conjunction with existing baseboard heaters.

A final object of this invention to be specifically enumerated herein is to provide a baseboard heater housing of the forced air type which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

FIG. 1 is an end elevational view of the air inlet end of the electric baseboard heater shield of the instant invention;

FIG. 2 is a mid-section transverse vertical sectional view of the housing or shield in operative association with an existing baseboard heater and its cover; and

FIG. 3 is a fragmentary longitudinal vertical sectional view taken substantially upon the plane indicated by the section line 3—3 of FIG. 1.

Referring now more specifically to the drawings, the numeral 10 generally designates the wall of a building defining a room 12 including a floor 14. A conventional baseboard heater construction referred to in general by the reference numeral 16 is provided and supported from the wall 10 in position spaced slightly above the floor 14. The heater construction 16 includes an elec-

trical resistance heating element or assembly 18 and a cover assembly referred to in general by the reference numeral 20 including a bottom wall 22 spaced above the floor 14, a partial front wall 24 and a partial top wall 26, the walls 22, 24 and 26 being joined at their opposite ends by means of opposite end walls 28.

The space 30 between the forward edge of the bottom wall 22 and the lower marginal edge of the front wall 24 defines an inlet throat and the space 32 defined between the upper marginal edge of the front wall 24 and the forward upturned marginal edge portion 34 of the top wall 26 defines an outlet throat 32. In normal operation of the baseboard heater, the electrical resistance assembly 18 becomes heated and air enters the cover 16 through the inlet throat 30 and moves upwardly past the assembly 18 and outwardly through the outlet throat 32 by convection. Of course, as the air passes the assembly 18 it is heated.

The foregoing may be considered as descriptive of a conventional baseboard heater housing.

The shield assembly of the instant invention is referred to in general by the reference numeral 36 and includes a J-shaped mounting strip 38 including short and long vertical legs 40 and 42 interconnected at their lower ends by means of a horizontal bight portion 44. Also, an L-shaped partition 46 is provided including an upstanding flange 48 and a lower horizontal flange 50. Likewise, a cover referred to in general by the reference numeral 52 is included and defines an upstanding front wall 54 terminating upwardly in a rearwardly curving top wall 56 and downwardly in a forwardly directed lower upper wall section 58. The cover 52 also includes opposite end walls 60 and 62 as well as a downturned upper rear wall or anchor flange 64.

Still further, the shield 36 includes a manifold tube 66 having forwardly and upwardly directed apertures 67 formed therein at points spaced longitudinally therealong and a funnel assembly 68 including a small diameter outlet end 70 and a large diameter inlet end 72.

The end wall 62 has an inlet opening 74 formed therein over which a grille 76 is secured and an electrically actuated blower assembly 78 is mounted within the large diameter inlet end 72 of the funnel assembly 68. Finally, an electric circuit controlling thermostat 80 is mounted within the cover 52 from the inner surface of the top wall 56 thereof. The blower assembly 78 is electrically connected to a suitable source (not shown) of electrical potential through the thermostat 80 and the latter is operative to initiate operation of the blower assembly 78 when a temperature above a predetermined minimum is sensed by the thermostat and to terminate operation of the blower assembly 78 when a temperature below a second predetermined minimum is sensed.

With reference now more specifically to FIG. 2 of the drawings, it will be seen that the mounting strip 38 is secured to the wall 10 by means of suitable fasteners 82 and that the cover 52 is merely positioned over the conventional baseboard heater construction cover by telescoping the lower marginal edge portion of the flange 64 downwardly into the upwardly opening channel defined between the short and long legs 40 and 42 of the mounting strip 38 with the lower edges of the end walls 60 and 62 abutting the floor 14. In addition, the partition 46 is secured in position to the floor by means of suitable fasteners 84 with the upper marginal edge por-

tion of the upstanding flange or leg 48 tightly abutting the outer surface of the front wall 24. Further, a pair of aligned horizontal bores 86 are formed through the end walls 28 of the baseboard heater cover assembly 20 and the manifold tube 66 is passed through the bores 86 and has its end remote from the end wall 62 seated in a cylindrical seat 88 provided thereof on the inner surface of the end wall 60. Of course, the outlet end 70 of the funnel assembly 68 is telescoped over the end of the manifold tube 66 adjacent the end wall 62. Further, suitable spacing sleeves 90 and fasteners 92 may be utilized to secure the wall section 58 to the floor 14 in spaced relation relative thereto.

In operation, when the conventional room thermostat (not shown) actuates the electrical resistance heater assembly 18 the interior of the cover 52 is heated and the thermostat 80 senses a rise in temperature above a predetermined minimum in order to electrically actuate the blower assembly 78. Actuation of the assembly 78 causes air to be drawn in through the grille 76 and through the funnel assembly 68 and into the manifold tube 66 for discharging through the apertures or bores 67 as indicated by the arrow in FIG. 2 of the drawings extending from the apertures 67. This air discharged from the manifold tube 66 is then directed upwardly through the inlet throat 30 and into the cover assembly 20 for the baseboard heater construction 16 and passes in intimate heat transfer relation with the assembly 18. This warmed air then exits through the outlet throat 32 and is forced downwardly between the front wall 54 and the partition 46 for discharging through the outlet opening 96 defined between the end walls 60 and 62 below the upper wall section 58.

It may of course be noted that the entire heating assembly projects slightly into the room 12 from the wall 10. However, in FIGS. 1 and 2 of the drawings phantom lines 98 illustrate the approximate spacing of drapes relative to the wall 10 and it may thus be seen that the entire heating assembly is received behind the drapes 98 except for the discharge portion of the heating assembly which projects horizontally beneath the lower marginal portion of the drapes 98. The vertical extent of the discharge portion of the assembly disposed beneath the lower marginal edge of the drapes 98 is minimal and thus the lower marginal edge of the drapes 98 may be spaced only slightly above the floor 14. During operation of the blower assembly 78 and the electrical resistance heating assembly 18 the drapes 98 are free from drafts by the heating unit and very little heat escapes from the heating unit to the area behind the drapes 98 in order that most of the heat generated by the electrical resistance heating assembly 18 is discharged outwardly through the outlet 96 beneath the bottom edge of the drapes 98. Thus, the shield 36 of the instant invention provides means whereby forced air heating with conventional non-forced air baseboard heaters may be provided in a manner enabling the utilization of drapes in front of the baseboard heaters.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. In combination with a horizontally elongated wall mounted heater disposed closely adjacent floor level and a drapery assembly hanging downwardly in front of the side of the heater remote from said wall and terminating downwardly at least slightly above floor level, said heater including a generally horizontal top wall and an upstanding front wall whose lower marginal edge is spaced above floor level and said heater including heated heat transfer surfaces disposed between said front wall and the wall along which said heater extends and including corresponding portions of the adjacent marginal edges of said top and front walls which are spaced from each other to define an air outlet for heated air rising through said heater, a wall heater conversion assembly including an upstanding floor mounted partition substantially closing the area between the lower marginal edge portion of said front wall and the associated floor and an outer shroud including a generally horizontal outer top wall spaced above the first-mentioned top wall and terminating inwardly in a downwardly directed front wall spaced inwardly of the first-mentioned front wall, the outer front wall terminating downwardly in a horizontally directed wall portion spaced above floor level and below the lower marginal edge of said drapery assembly, and means for ducting air to be heated under pressure into the lower portion of the area enclosed by the first-mentioned top and front walls and said partition.

2. The combination of claim 1 wherein corresponding ends of said outer top and front walls are interconnected by means of upstanding outer end walls extending upwardly from floor level and horizontally inwardly from the adjacent building wall.

3. The combination of claim 2 wherein said heater includes opposite end walls connected between corresponding ends of the top and front walls of said heater, said inner end walls being spaced inwardly from said outer end walls.

4. The combination of claim 3 wherein said means for supplying air to be heated under pressure to said area enclosed by said inner top and front walls comprises a tubular manifold secured through said inner end walls and having outlet openings formed therein, one end of said tubular manifold being closed and the other end of said tubular manifold being open, and an air induction duct including an outlet end communicated with said other end of said manifold and an inlet end opening through one of said outer end walls, said induction duct having motor driven air blower means disposed therein for pumping air therethrough into said manifold.

5. In combination with a building including a floor and an interior wall surface projecting upwardly from said floor, a wall mounted heater extending along said inner surface of said wall a spaced distance above said floor and including a lower air inlet opening and an upper air outlet opening, means closing said lower air inlet opening, means defining an air passage for receiving heated air from said outlet opening and ducting said heated air downwardly in front of said wall heater and horizontally discharging said heated air outwardly away from said wall at floor level, means for supplying air to be heated under pressure to a lower portion of the interior of said heater from the exterior of said air passage defining means, and a drapery assembly hung in spaced relation to the inner surface of said wall and including a lower marginal edge spaced above said floor for dis-

5

charge of said heated air from said air passage defining means at floor level beneath the lower marginal edge of said drapery assembly.

6. The combination of claim 5 wherein said air passage defining means includes a shroud including a top wall having front and rear marginal edge portions with its rear marginal edge closely abutting said wall surface above said outlet opening, the front marginal edge portion of said top wall terminating in a downturned front wall extending downwardly across the front side of said heater remote from said wall surface, said front wall terminating downwardly in a horizontally directed top wall portion extending away from said wall surface,

6

said top wall, front wall and top wall portion being interconnected at their opposite ends by means of end walls projecting outwardly from said wall surface.

7. The combination of claim 6 wherein said heater is enclosed in an area defined by inner top and front walls interconnected at their ends by means of end walls spaced inwardly of the first-mentioned end walls and projecting inwardly from said building wall surface, at least portions of the adjacent marginal edge portions of said inner top and front walls being spaced apart to define said upper air outlet opening.

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