

July 5, 1955

W. K. RIEBEL
REGISTER OR VENTS

2,712,281

Filed Aug. 28, 1953

2 Sheets-Sheet 1

FIG. 1.

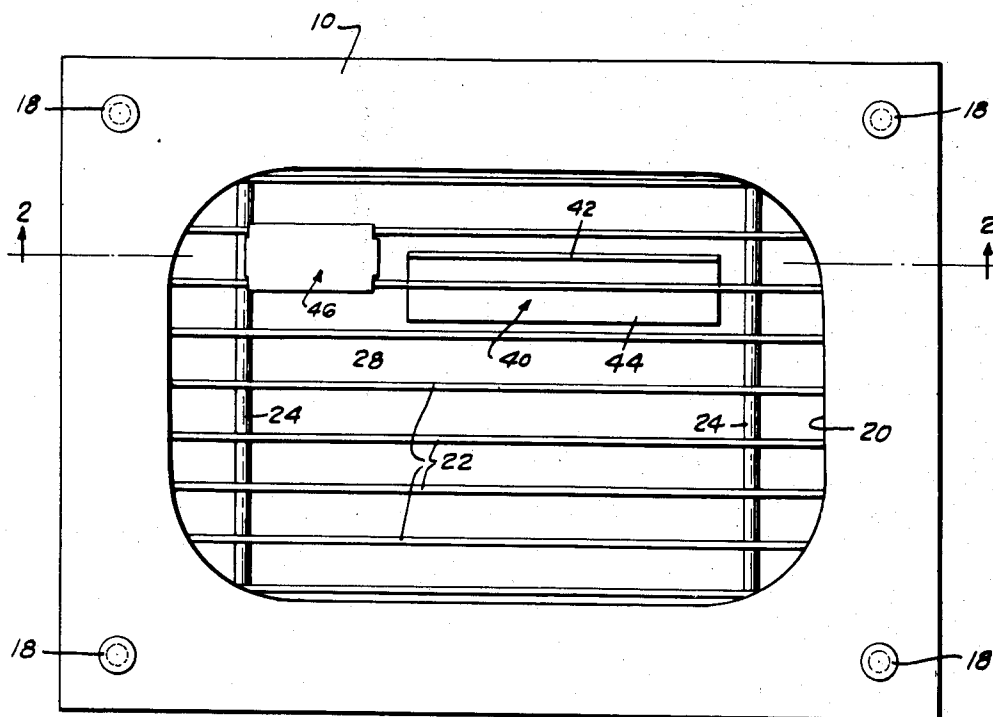
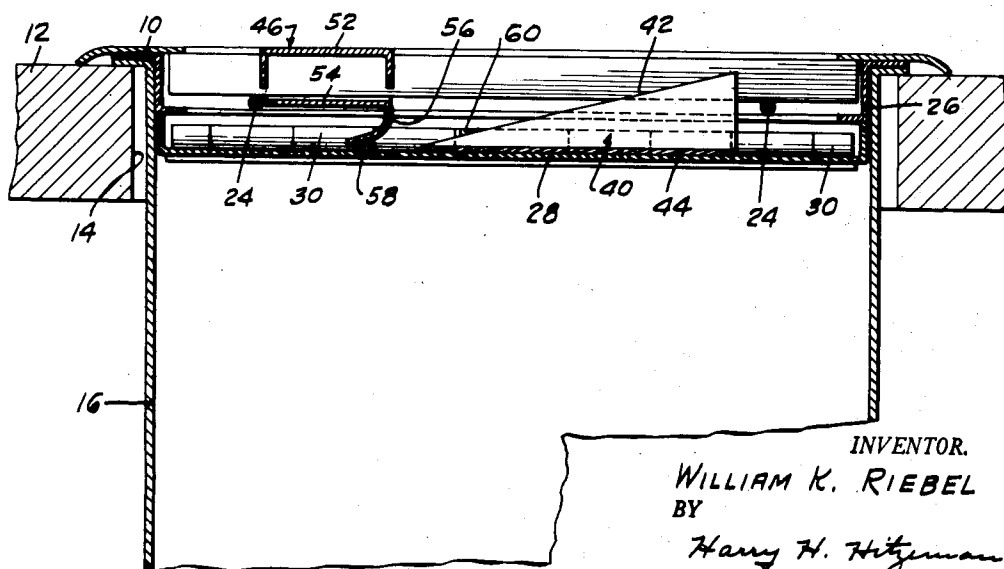


FIG. 2.



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2 Sheets-Sheet 2

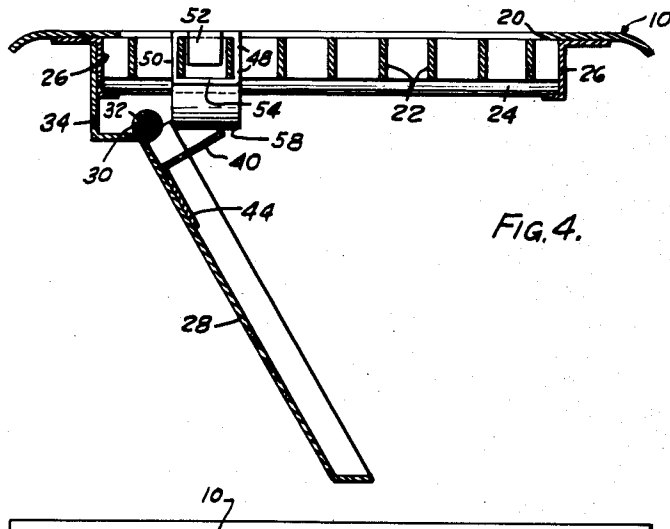


FIG. 4.

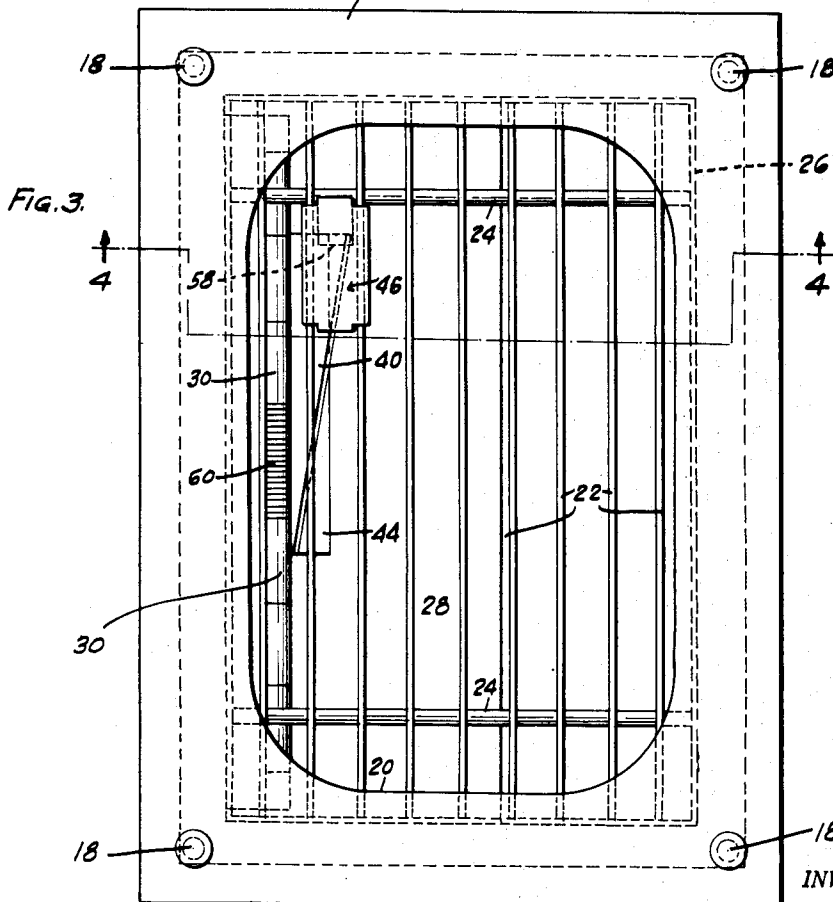


FIG. 3.

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1

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REGISTER OR VENTS

William K. Riebel, Chicago, Ill., assignor to Fred Riebel & Co., Chicago, Ill., a copartnership

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6 Claims. (Cl. 98—102)

My invention relates to registers or vents for air ducts.

My invention relates more particularly to improvements in the construction of registers or vents for hot or cold air ducts and is particularly directed to improved means for opening, closing or holding the closure plate in any desired angular position between open and closed.

The principal object of the present invention is to provide an improved register or vent for regulating the delivery of hot or cold air into a room or other enclosure.

A further object of the invention is to provide a register or vent of the type described having an improved control member for regulating the angle of the closure plate at the outlet from the air duct or passageway.

A further object of the invention is to provide in a register or vent of the type described a closure plate control medium capable of easy manipulation to adjust the angle or opening and maintain the same until by manual operation the angle is changed to any degree between open and shut.

A further object of the invention is to provide such a closure plate control medium capable of operating equally as efficiently regardless of the position of the register or vent. That is, the register may be placed horizontally at the upper end of an air duct, vertically on the side thereof, horizontally at the bottom end of an air duct, or the register may be in any angular position desired.

For a more comprehensive disclosure of the various features of my invention and their attendant advantages, reference is had to the following description and the accompanying drawings, on which:

Fig. 1 is a plan view showing the register in a closed position;

Fig. 2 is a transverse sectional view therethrough taken on the line 2—2 of Fig. 1;

Fig. 3 is a plan view of my improved register shown in an open position; and

Fig. 4 is a cross-sectional view thereon taken on the line 4—4 of Fig. 3.

In the embodiment of the invention which I have chosen to illustrate and describe the same, I have shown my improved register which may generally comprise a face plate or frame 10, rectangular in shape and adapted to be mounted upon the floor 12 over a suitable opening 14 through which an air duct 16 may be extended. The face plate or frame 10 in the embodiment shown may be provided at the four corners with rivets or screw members 18 for fastening the same to the top of the air conduit or duct 16.

The surface of the face plate 10, which is rectangular in the embodiment shown, may have a generally rectangular opening 20 therein, the opening having a plurality of parallel grill members 22 across the same to exclude large objects from falling through the radiator opening. The parallel grill members 22 may be welded to a pair of cross bars 24 at opposed ends of the opening 20, the bars being fastened on ledges of a rectangularly shaped box-like housing 26 that is welded or otherwise secured to the under surface of the face plate 10.

2

For controlling the passage of hot or cold air or other medium through the air duct 16 and register 10, I provide a closure plate 28 which is provided adjacent one edge with a spring loaded hinge 30 mounted on a rod 32 carried by a bracket 34 that is welded or otherwise secured to the housing 26 adjacent one side of the same. I have provided a novel means for controlling the angular disposition of the closure plate 28, capable of operation in any position that the register is placed; that is, either with the register in a horizontal position at the top of an air duct, as shown in the drawings, or the construction may be turned upside down and the register may be disposed under the ceiling with the air duct extending upwardly if desired. Further, the air duct may be disposed at an angle or in a vertical position, such as in a side wall of a house or other structure.

The control member may include a wedge-shaped plate 40 which has an upwardly sloping edge 42 and a base 44 that may be spot-welded or otherwise secured to the surface of the closure plate 28.

The control member for moving the closure plate by means of the wedge-shaped plate that is fastened thereto, may comprise a generally box-like unit 46 which, as best shown in Fig. 4, has a pair of walls 48 and 50 which enclose a pair of the grill members 22, a top wall 52 across the top of the grill members, and a wall 54 across the bottom of the same. The wall 54 has a downwardly depending leg 56 and an angularly disposed extension 58 which is adapted when the control member is moved to the right, Fig. 2, to bear against the sloping edge 42 of the wedge-shaped plate 40 and move the closure plate outwardly against the tension of the spring 60 of its hinge 30. Since the spring thus yieldingly presses the closure plate against the control member at all times, movement of the control member 46 to the right or left, as shown in Fig. 1, will open or close the radiator to any desired degree between the full open position and the full closed position, and will hold the closure plate in the position desired until the control member is again moved to the right or to the left.

With this simple arrangement of control member and wedge-shaped plate secured to the hinged closure plate, it can be seen that the operation of the closure plate to a full open, full shut, or any intermediate position is easily accomplished by the movement of the control member 46 either to the right or to the left. Due to the pressure of the coiled spring 60 of the spring-loaded hinge, the closure plate will be held in any desired position, open, closed or intermediate.

By the cooperation of the two simple elements which I have shown together with the spring-loaded hinged closure plate, it can be seen that the register is capable of easy and simple assembly and is so constructed that it is incapable of being broken or becoming out of order. It can further be seen that by reason of this arrangement, the angular positioning of the register has no effect whatsoever on the operation of the closure plate and it may be mounted horizontally, vertically, or in any other desirable or suitable position.

While I have illustrated and described a specific embodiment of the invention, it will be apparent to those skilled in the art that changes and modifications may be made in the exact details shown, and I do not wish to be limited in any particular; rather what I desire to secure and protect by Letters Patent of the United States is:

1. In a register of the type described the combination of a face plate having an opening therethrough, a plurality of parallel spaced grill members disposed below said face plate over said opening, a spring loaded hinged closure plate fastened along one side of said face plate, a wedge-shaped member mounted thereon and a control member movable upon said grill members for controlling the open-

3

ing or closing of said closure plate, said control member being tubular and slidably mounted on a pair of grill members and having an angularly disposed ledge engaging said wedge-shaped member.

2. In a register of the type described the combination of a face plate having an opening therethrough, a plurality of parallel spaced grill members disposed below said face plate over said opening, a hinged closure plate fastened along one side of said face plate, a wedge-shaped member mounted thereon and a control member movable upon said grill members for controlling the opening or closing of said closure plate, said control member being tubular and slidably mounted on a pair of grill members and having an angularly disposed ledge engaging said wedge-shaped member, said hinged closure plate being spring-loaded to normally close the opening in said face plate.

3. A register of the type described comprising a rectangularly shaped face plate having a rectangularly shaped opening therethrough, spaced parallel grill members disposed below said face plate, a spring loaded closure plate hingedly mounted below said grill members and cooperating means on said grill members and said closure plate for hingedly moving said closure plate away from said face plate to any desired angular disposition, said cooperating means comprising a generally tubular control member slidably mounted on said parallelly disposed grill members, and a wedge-shaped plate mounted on said closure plate and cooperating with said control member.

4. A register of the type described comprising a rectangularly shaped face plate having a rectangularly shaped opening therethrough, spaced parallel grill members disposed below said face plate, a closure plate hingedly mounted below said grill members, said hinge having spring means for normally holding said closure plate in a closed position parallel to said face plate and cooperating means on said grill members and said closure plate for hingedly moving said closure plate away from said face plate to any desired angular disposition, said cooperating means comprising a generally tubular control member slidably mounted on a pair of said parallelly disposed grill members, and a wedge-shaped plate mounted on said closure plate and cooperating with said control member.

5. A register of the type described comprising a rec-

4

tangularly shaped face plate having a rectangularly shaped opening therethrough, an open-faced housing fastened to the bottom of said face plate, spaced parallel grill members disposed below said face plate inside of said housing, a closure plate hingedly mounted below said grill members, said hinge having spring means for normally holding said closure plate in a closed position parallel to said face plate and cooperating means on said grill members and said closure plate for hingedly moving said closure plate away from said face plate to any desired angular disposition, said cooperating means comprising a control member slidably mounted on a pair of said parallelly disposed grill members, and a wedge-shaped plate mounted on said closure plate and cooperating with said control member.

6. A register of the type described comprising a rectangularly shaped face plate having a rectangularly shaped opening therethrough, an open-faced housing fastened to the bottom of said face plate, spaced parallel grill members disposed below said face plate inside of said housing, a closure plate hingedly mounted below said grill members, said hinge having spring means for normally holding said closure plate in a closed position parallel to said face plate and cooperating means on said grill members and said closure plate for hingedly moving said closure plate away from said face plate to any desired angular disposition, said cooperating means comprising a generally tubular control member slidably mounted on a pair of said parallelly disposed grill members, and a wedge-shaped plate mounted on said closure plate and cooperating with said control member, said plate including a sloping vertically disposed wall engaging said tubular control member.

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