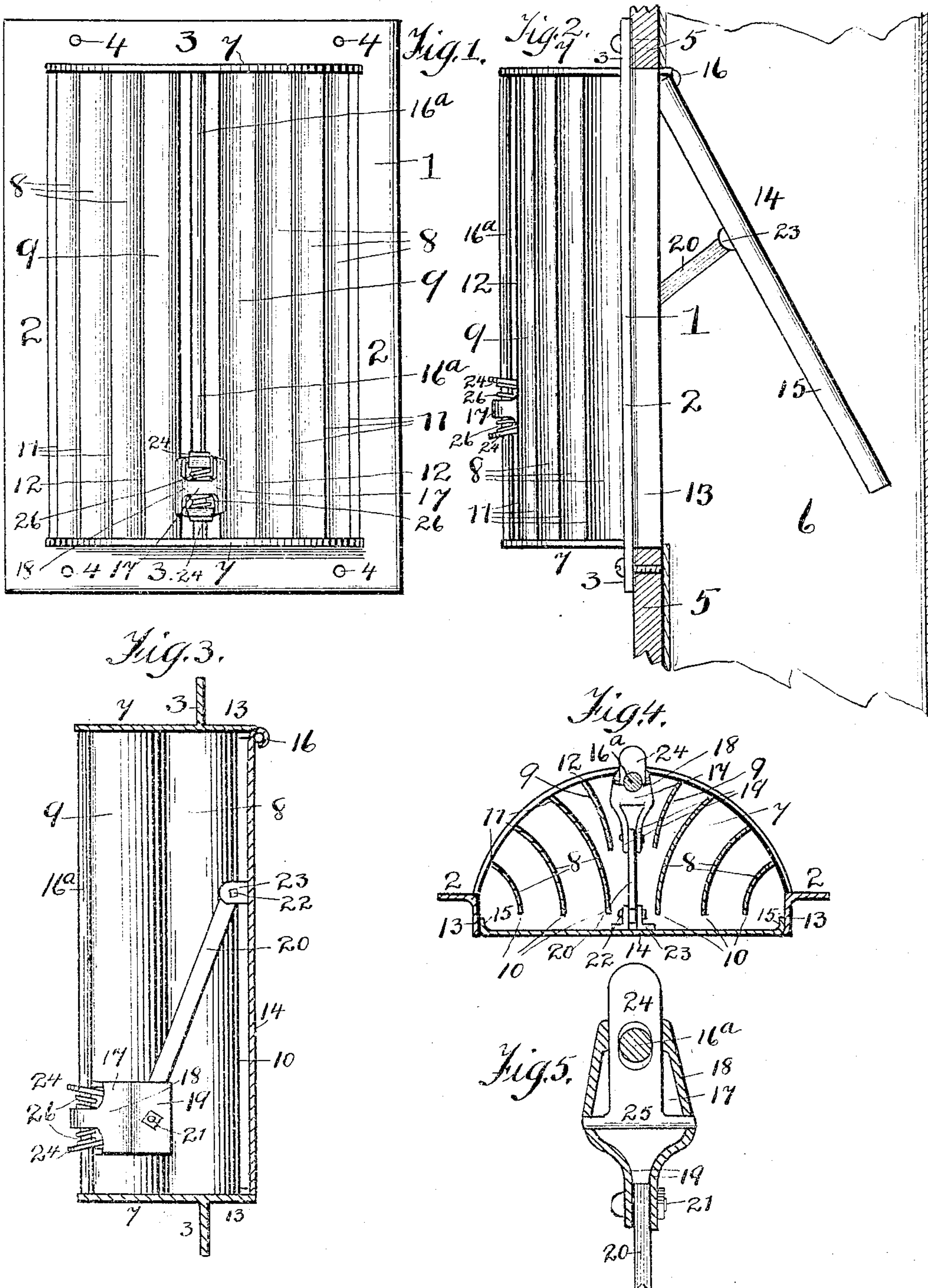


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J. W. MATHIS.
WALL REGISTER.

APPLICATION FILED AUG. 25, 1904.



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WALL-REGISTER.

SPECIFICATION forming part of Letters Patent No. 778,755, dated December 27, 1904.

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To all whom it may concern:

Be it known that I, JULIEN W. MATHIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wall-Registers, of which the following is a specification.

The register of the present invention is constructed to serve as a diffuser, deflector, and volume-damper combined and may be employed for the distribution of either hot or cold air through a building.

The register is intended to be attached to a wall at a suitable distance from the floor, though preferably near the top of the room, and open into a flue adapted to convey air to a plurality of registers. It is preferred to locate the register at such a height from the floor that it cannot be easily tampered with, so that after the volume-damper has been adjusted to the proper degree a predetermined amount of hot or cold air will be projected into the room at all times.

Where a large number of the registers are employed in a building on different floors, it will be necessary in order to provide an equal amount of air for each of the registers to initially regulate and test all of the registers, so that the same amount of air will be delivered by each one.

The invention is intended to combine within itself means for regulating the volume of air discharged, for deflecting the air forward into the room, and for diffusing the air so deflected.

The invention consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a face view of the register of the present invention; Fig. 2, an edge view showing the method of adjustment and the position of the register in a flue; Fig. 3, a longitudinal sectional view of the register; Fig. 4, a cross-sectional view of the same, and Fig. 5 a cross-sectional view of the locking means employed for holding the parts in adjusted position.

The register is constructed to have an outer frame 1, consisting of side rails 2 and end rails 3 and provided with screw-holes 4 for

the attachment of the register to a wall 5 in a manner to discharge air from a flue 6 or other source of air-supply. The frame is provided with rounded end plates 7 at the top and bottom, and between the end plates are arranged a series of curved outer deflecting-plates 8 and a pair of curved inner deflecting-plates 9, the outer deflecting-plates being preferably concentric with one another and of different widths and curved to deflect the air diagonally outward from the center, and the inner pair of plates are preferably shorter and adapted to give less deflection than the outer plates. The outer concentric plates are formed to have their inner edges in a straight line with one another and their outer edges lying in the line of curvature of the end plates of the deflector. The inner deflecting-plates have their outer ends in the same line of curvature; but the plates are located farther forward and have their rear edges terminate near the center of the end plates of the register. The frame is provided with a rearwardly-extending flange 13, which extends all around the opening in the frame, and to the top of the flange is hinged a deflecting-door 14, having side flanges 15, adapted to fit within the flange around the frame, and said door is hinged at its top by means of a hinge 16, allowing it to be moved in and out to deflect different volumes of air from the flue.

The register is provided with a vertical rod 16^a, extending between the two end plates at their forward edge, and upon said rod is located an adjusting-clamp 17, adapted to slide up and down the rod and preferably formed with a casing 18, having rearwardly-extending ears 19, between which is carried an adjusting-bar 20, pivoted to the ears by means of a bolt 21, and the opposite end of the adjusting-bar is pivoted to the deflecting-door by means of a pivot 22, passing through ears 23, so that as the adjusting-clamp is moved up and down the rod the door will be swung in and out, increasing or decreasing its angle of deflection, and thereby regulating the volume of air discharged into the room. The clamp consists of a pair of finger-pieces 24, pivoted at their

inner ends 25 to the walls of the casing and provided with holes for the passage there-through of the rod 16^a, and the finger-pieces are normally spread apart by means of coil-
 5 springs 26, which cause the finger-pieces to impinge against the rod and prevent move-
 ment thereon. When, however, the finger-
 pieces are compressed, they will be thrown
 out of impingement with the rod, enabling
 10 the clamp to be moved up and down to actu-
 ate the adjusting-bar and to swing the door.

In use the deflecting-door is set at an angle to discharge a predetermined volume of air into the room, and said air will be deflected
 15 from the main flue and discharged forwardly into the register proper, striking against the diverging deflecting-plates and being spread out laterally by the action of the plates, so that it will be discharged into the room in a
 20 fan-shaped stream and not in a direct line, thereby more evenly distributing the air throughout the room and preventing a strong and disagreeable draft of air from being di-
 rected at any one point. Where a number of
 25 registers are operated from the same flue one above the other, it will be necessary to regu-
 late the deflecting-doors to different angles in order to have an equal discharge from each of the registers. This is due to the fact that a
 30 volume of air passing up a straight flue will tend to pass to the top thereof, so that it will be necessary to open the doors of some of the registers to a greater angle than the doors of the other registers in order to obtain an equal
 35 discharge. When it is desirable for any reason to entirely shut off the current of air, the door may be thrown into the position shown in Fig. 3, in which the opening is entirely closed and the deflection of air stopped. The
 40 regulating means employed is one which enables the operation to be easily and quickly performed from a most convenient point and is simple and easily operated and at the same time does not detract from the appearance of
 45 the register to any appreciable extent.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a register, a frame, a door pivoted thereto and adapted to be adjusted to different
 50 angles, means for adjusting the door and holding it in adjusted position, and a series of diverging deflecting-plates adapted to spread a volume of air deflected by the door, substantially as described.

2. In a register, the combination of a frame having an opening therein, end plates secured to the frame at top and bottom of the open-
 55 ing, a door hinged at its top edge to the frame, outwardly-diverging deflecting-plates extend-
 60 ing between the end plates, and means for adjusting the door and holding it in adjusted position to have a volume of air deflected by the door and diffused by the deflecting-plates, substantially as described.

3. In a register, the combination of a frame

having an opening therein, end plates secured to the frame at top and bottom of the open-
 ing, a door hinged at its top edge to the frame, outwardly-diverging deflecting-plates extend-
 70 ing between the end plates, a rod extending
 between the end plates, an adjustable clamp
 slidably mounted on the rod and adapted to be held in adjusted position thereon, and a bar
 pivoted at one end to the clamp and at the
 75 other end to the door for permitting the door
 to be adjusted by the movement of the clamp
 to deflect a volume of air onto the deflecting-
 plates to be diffused and distributed, substan-
 tially as described.

4. In a register, the combination of a frame
 80 provided with an opening therein, end plates
 rounded at their forward edge and secured to the frame, curved deflecting-plates between the end plates and outwardly diverging from the center of the register, a flange on the rear
 85 of the frame around the opening therein, a door hinged at its upper edge to the flange, and means for adjusting the door and holding it in adjusted position to deflect air onto the deflecting-plates to be diffused and distributed,
 90 substantially as described.

5. In a register, the combination of a frame provided with an opening therein, end plates rounded at their forward edge and secured to the frame, curved deflecting-plates between
 95 the end plates and outwardly diverging from the center of the register, a flange on the rear of the frame around the opening therein, a door hinged at its upper edge to the flange, a vertical rod between the end plates, an ad-
 100 justing-clamp slidably mounted on the rod and provided with compressible finger-pieces normally distended to impinge against the rod, and an adjusting-bar pivoted at one end to the clamp and at the other end to the door
 105 for allowing the door to be regulated by the movement of the clamp on the rod to deflect air and direct the same onto the deflecting-plates to be diffused and distributed, substan-
 110 tially as described.

6. In a register, the combination of a frame provided with an opening therein, rounded end plates secured to the frame at the top and bottom of the opening, deflecting-plates lo-
 115 cated between the end plates and having their rear ends terminating in a plane parallel with the frame and their forward ends in the line of curvature of the end plates, a rod verti-
 cally extending between the end plates at their forward edge, a door hinged to the frame, a
 120 clamp slidably mounted on the rod, and a bar pivoted at one end to the clamp and at the other end to the door for regulating the door to direct air onto the deflecting-plates to be
 125 diffused and distributed, substantially as de-
 scribed.

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