

Oct. 4, 1966

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**3,276,348**

AIR DISTRIBUTOR

Filed June 25, 1964

2 Sheets-Sheet 1

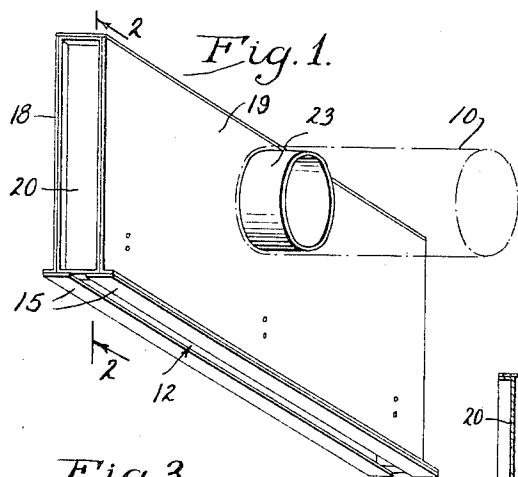


*Fig. 2.*

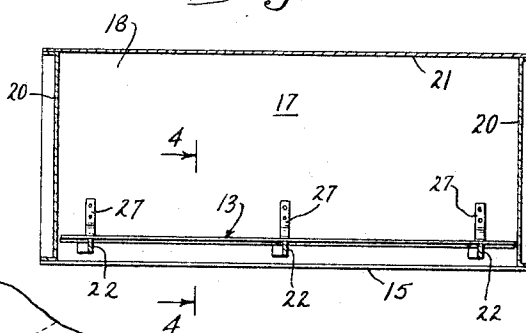


*Fig. 3.*

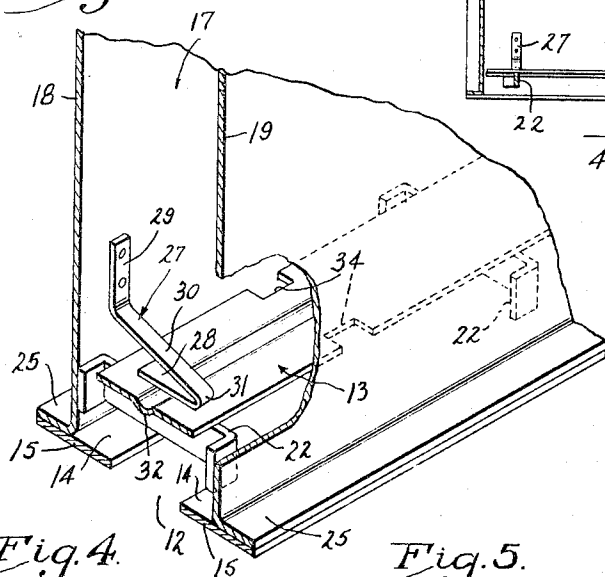


Fig. 5.

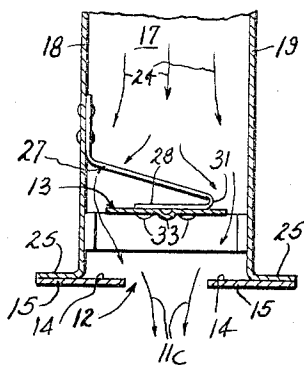
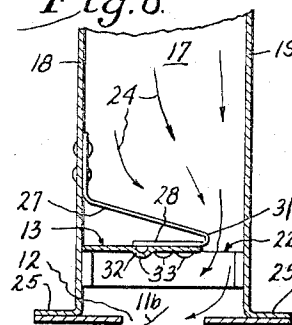


Fig. 6.



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2 Sheets-Sheet 2

Fig. 7.

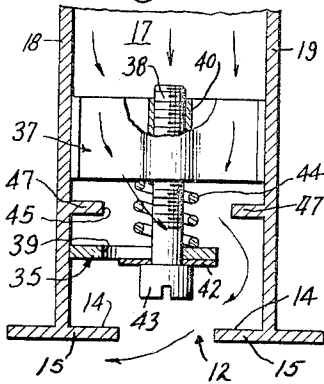


Fig. 9.

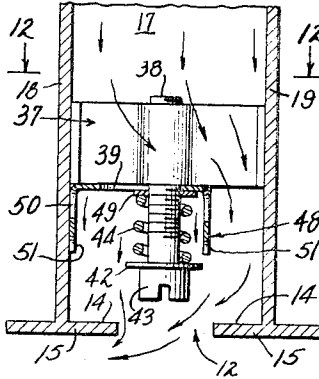


Fig. 10.

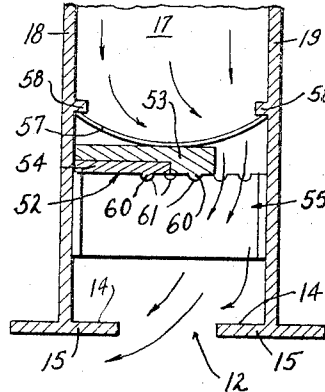


Fig. 8.

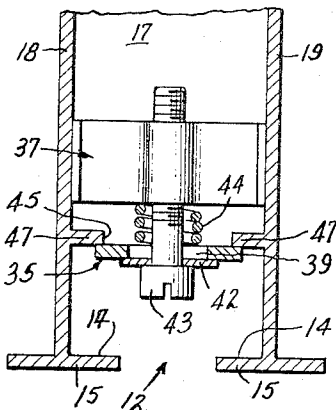


Fig. 11.

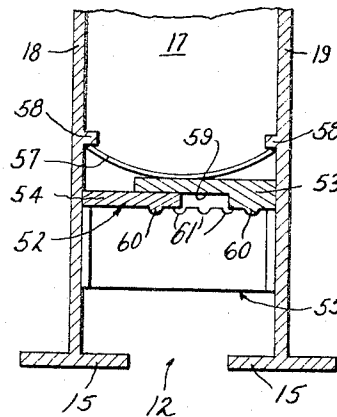
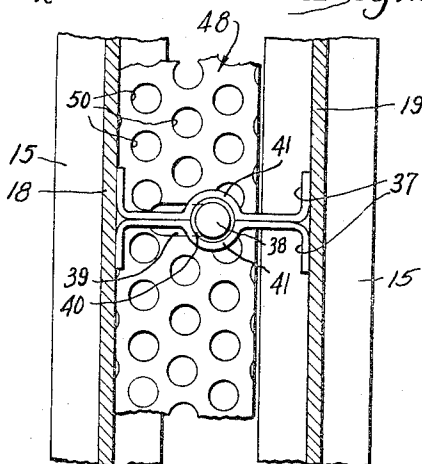


Fig. 12.



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1

3,276,348

## AIR DISTRIBUTOR

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18 Claims. (Cl. 98-40)

This invention relates to air distributors or diffusers for discharging air into a room through a narrow outlet slot and, more particularly, to diffusers in which the air stream flowing through the diffuser toward the outlet slot is deflected toward one sidewall of the diffuser to impinge against a laterally projecting flange defining one side of the outlet slot, the air stream being bent laterally by the flange to enter the room along the ceiling. By adjusting the position of the deflector in such diffusers, the direction of the air stream may be varied to change the discharge pattern.

The general object of the present invention is to simplify the construction and mounting of the adjustable deflector and substantially reduce the overall cost of the diffuser.

A more specific object is to utilize the usual spacer bars that hold the diffuser sidewalls in properly spaced relation as supports for the adjustable deflector and eliminate the relatively expensive hinges previously used to mount the deflector adjustably in the diffuser.

Another object is to hold the deflector releasably in different selected deflecting positions relative to the supporting bars in a simple and effective manner.

A further object is to utilize the deflector as a volume regulator as well as for pattern control thereby eliminating the need for a conventional damper.

Still another object is to materially increase the flow capacity of the diffuser while maintaining the same size of passage therethrough and the same available discharge patterns.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which

FIGURE 1 is a perspective view of a diffuser embodying the novel features of the present invention.

FIG. 2 is a cross-sectional view of the diffuser taken along the line 2-2 of FIG. 1.

FIG. 3 is an enlarged fragmentary perspective view of the diffuser with parts broken away and shown in section.

FIGS. 4, 5 and 6 are enlarged fragmentary cross-sectional views taken along the line 4-4 of FIG. 2 and illustrating different positions of the deflector.

FIGS. 7 and 8 are views similar to FIG. 4 and showing two conditions of an alternate form of the invention.

FIG. 9 is a view similar to FIG. 4 showing one condition of another alternate form.

FIGS. 10 and 11 are views similar to FIGS. 7 and 8 showing still another alternate form.

FIG. 12 is an enlarged fragmentary cross-section taken along the line 12-12 of FIG. 9.

As shown in the drawings for purposes of illustration, the invention is embodied in an air diffuser adapted to be set into the ceiling or another wall of a room to receive conditioned air from a supply duct 10 and direct a ribbon-like stream 11 of air into the room through an elongated outlet slot 12 at the outer or downstream end of the diffuser. To discharge the air stream into the room along the ceiling, an elongated deflector vane 13 is disposed within the diffuser inwardly from the outlet slot and positioned to deflect the stream of conditioned air toward one sidewall of the diffuser for impingement against the

2

inner side 14 of a flange 15 defining one side of the outlet slot and projecting laterally part way across the downstream end of the passage 17 formed by the interior of the diffuser. With this arrangement, the air stream is bent laterally at the outlet slot and discharged into the room along the ceiling.

In this instance, the diffuser is simply a sheet metal box having horizontally elongated vertical sidewalls 18 and 19 disposed in laterally spaced side-by-side relation and joined together by two narrow end walls 20 and a top wall 21 with the free lower edge portions of the sidewalls rigidly joined together by longitudinally spaced crossbars 22 spanning the passage 17 adjacent its downstream end and secured to the two sidewalls. Each crossbar is a U-shaped plate with its horizontal crosspiece perpendicular to the two sidewalls and its opposite end portions extending along and attached to the inside surfaces of the sidewalls.

The supply duct 10 communicates with the passage 17 through an inlet connection 23 (FIG. 1) in the sidewall 19 adjacent the top edge of the latter, and conditioned air flows downwardly through the passage and toward the outlet slot 12 across the full length of the diffuser as indicated by the arrows 24 in the drawings. Herein, the outlet slot is defined between two elongated flanges 15 extending the full length of the diffuser and projecting laterally toward each other from the lower edges of the sidewalls 18 and 19 in a common horizontal plane perpendicular to the sidewalls and to the air stream in the diffuser. While the flanges may be formed in various ways, in this instance each is a narrow sheet metal strip disposed beneath a lip 25 (FIGS. 3 through 6) at the lower edge of the associated diffuser sidewall. The flanges may be secured to these lips or may be formed on and supported by elongated light fixtures (not shown) recessed into the ceiling on opposite sides of the diffuser. The flanges also may be formed integrally with the sidewalls as shown in FIGS. 7 through 11.

In accordance with the primary aspect of the present invention, the deflector vane 13 is made substantially narrower than the width of the passage 17 and is supported in the diffuser for simple back and forth edgewise adjustment between laterally spaced alternate deflecting positions closely adjacent the respective diffuser sidewalls 18, 19 to define alternate slot-like openings within the passage above the respective flanges 15. When the vane is closely adjacent one sidewall of the passage, the air stream is directed along the opposite wall for deflection in one direction by the associated flange 15. Simply by sliding the vane edgewise across the passage and against the other wall, the inclination of the air stream into the room is reversed. Moreover, the adjustable deflector vane is supported simply and inexpensively on the crossbars 22 previously used only to connect and maintain the spacing of the diffuser sidewalls thereby eliminating the more expensive hinged connections of prior adjustable deflector vanes and correspondingly simplifying the construction of the diffuser.

In the form shown in FIGS. 2 through 6, the vane 13 is a narrow imperforate panel disposed above and resting on the top surfaces of the crossbars 22, these surfaces being disposed in a common horizontal plane spaced inwardly from and paralleling the plane of the flanges 15. Longitudinally spaced along the passage 17 above the vane is a series of spring arms 27 each secured at one end to the sidewall 18 and having a free end portion 28 pressed against the upper side of the vane to hold the vane snugly against the crossbars.

Preferably, one such spring is positioned above each crossbar as shown in FIGS. 2 and 3 and is formed with an upturned end portion 29 which lies flat against and is

3

attached to the sidewall 18 with the intermediate portion 30 of the spring extending over and inclined downwardly toward the vane. The free end portion is bent reversely at 31 to extend horizontally back toward the sidewall 18 along the upper side of the vane and the intermediate portion is stressed to press the vane against the aligned crossbar.

To cooperate with the springs 27 in holding the vane in each selected position, a longitudinal rib 32 is formed on the underside of the vane 13 midway between the edges thereof by bending the central portion of the vane downwardly out of the plane of the vane. This rib seats in one of three sets of longitudinally aligned notches 33 which are formed in the tops of the crossbars to receive the rib in the three alternate positions of the vane illustrated in FIGS. 4 through 6. Thus, the springs normally hold the vane snugly against the crossbars with the rib seated in a selected set of notches so that the opposed abutment surfaces on the rib and the notches hold the vane positively in place.

When the vane 13 is positioned as shown in FIG. 4 against the right sidewall 19 of the diffuser with the rib 32 seated in the right set of notches 33, the left edge of the vane is spaced from the sidewall 18 and cooperates with the latter to define a slot-like opening directly above the left flange 15. Thus, the conditioned air is deflected laterally by the upper side of the vane and flows past the latter along the sidewall 18 to impinge against the upper surface 14 of the left flange and be deflected downwardly to the right through the outlet slot 12 as indicated by the arrows 11<sup>a</sup>. To reverse the direction of discharge of air into the room, the vane is pushed upwardly, as permitted by yielding of the springs 27, far enough to lift the rib 32 out of the right notches 33, and is shifted edgewise to the left until the rib is above the left set of notches. When the vane is released, the springs press it down against the crossbars 22 and seat the rib in the new set of notches as shown in FIG. 6.

In this position of the deflector vane 13, the right edge of the vane is spaced from right sidewall 19 to define a slot-like opening directly above the right flange 15. Thus, the conditioned air flows past the vane along the right sidewall and is deflected to the left into the room as indicated by the arrows 11<sup>b</sup>. When the vane is centered between the sidewalls (FIG. 5), substantially equal amounts of air pass on each side of the vane and merge in passing through the outlet slot to produce a stream of air flowing straight down into the room as indicated at 11<sup>c</sup>.

To regulate the volume of air discharged into the room with this diffuser, a damper (not shown) is mounted in the passage 17 above the deflector vane 13. Notches 34 (FIG. 3) are formed in the vane for access to the damper through the outlet slot 12 and the vane with a suitable tool such as a screw driver (not shown) for adjusting the damper.

In the alternate form shown in FIGS. 7 and 8, the deflector vane 35 is arranged not only to serve as a pattern controller but also to perform the additional function of varying the volume of air discharged through the diffuser by partially or completely closing the diffuser passage 17 thereby eliminating the need for a conventional damper. For this purpose, the vane is disposed beneath the supporting crossbars 37 and suspended from the latter on screws 38 inserted upwardly through laterally elongated slots 39 in the vane and threaded into internally threaded sleeves 40 fast on the crossbars. Each of the latter comprises a pair of generally U-shaped plates similar to the crossbars 22 but having central semi-circular bends 41 (see FIG. 9) fitted together around and secured to the threaded sleeve. The ends of the plates are welded to the diffuser sidewalls as before. Washers 42 are telescoped onto the screws between the screw heads 43 and the vane to abut against the underside of the vane, and coiled springs 44 are telescoped onto the screw shanks and compressed between the crossbars and the vane to press the vane against the washers

4

thereby to hold the vane frictionally in a selected position.

With this arrangement, the vane 35 is slidable edgewise back and forth relative to the screws 38 between two alternate positions adjacent the respective sidewalls 18 and 19 of the diffuser to produce both left and right discharge patterns in the same manner as described with respect to the diffuser shown in FIGS. 3 through 6. It will be evident that the vane also may be moved to a central position for a straight down discharge path, or may be shifted laterally to off-center intermediate positions (not shown) in which a greater part of the conditioned air passes on one side of the vane than on the other. With the vane in such off-center positions, the diffuser discharges air through the outlet slot along paths inclined less sharply to the sides. Accordingly, the position of the vane is infinitely variable between two laterally offset positions corresponding to the positions shown in FIGS. 4 and 6.

Volume control is accomplished with this form of the invention by adjusting the vane 35 sideways, that is, parallel to the direction of flow of air in the diffuser, relative to an elongated slot 45 in the passage 17 above the vane. Herein, this slot is defined between the laterally spaced edges of a pair of ribs 47 extending the full length of the diffuser and projecting inwardly toward each other from the sidewalls 18 and 19 in a plane parallel to the plane of the vane. The width of the slot 45 is approximately the same as the width of the vane and preferably is somewhat less than the vane width.

The screws may be turned with a screw driver (not shown) inserted through the outlet slot 12 to shift the deflector vane 35 upwardly from the level shown in FIG. 7 to the level shown in FIG. 8 in which the vane when centered overlies the slot 45 and overlaps the rib 47 on each side of the slot to close the latter. In each of the laterally offset positions of the vane adjustments in the level of the vane vary of the cross-sectional area of the passage around the vane and thus vary the volume of air discharged by the diffuser.

The diffuser shown in FIG. 9 is similar to that in FIGS. 7 and 8 in the suspension of the deflector vane 48 from crossbars 37 by means of screws 43 inserted upwardly through laterally elongated slots 39 in the vane and threaded into sleeves 40 carried on the crossbars. In this instance, each coiled spring 44 is compressed between the washer above the head 43 of the screw and a washer 49 abutting against the underside of the vane to hold the vane in frictional engagement with the underside of the crossbars. The slots 39 permit back and forth lateral sliding of the vane between two laterally offset positions adjacent the respective diffuser sidewalls 18 and 19, and the springs 44 hold the vane in each selected position, including any intermediate position.

In this instance, however, the capacity of the diffuser is increased without increasing the size of the diffuser. This is accomplished by forming a plurality of perforations 50 in the vane 48 to pass air through the latter and into the low pressure area below the vane to flow toward the outlet slot 12 without deflection and at a relatively low velocity. In addition, the vane is made of U-shaped cross-section with depending flanges 51 on the longitudinal edges of the vane for channeling and confining the air flowing around the vane for more direct impingement against the active deflecting flange 15, the right flange in the condition shown in FIG. 9, to insure that this air bends sharply across the outlet slot.

With this arrangement, the total cross-sectional area for the flow of air past the deflecting vane 48 is increased by an amount equal to the area of the perforations. At the same time, the higher velocity air deflected laterally by the active flange 15 merges with the lower velocity air above the outlet slot 12 and has enough energy to deflect the low velocity air laterally and produce the desired discharge angle for the entire air stream issuing from the diffuser. While the perforations may be formed only in

5

the horizontal portion of the vane 48, the entire vane preferably is composed of perforated metal having substantial free area. Perforated metal is readily available and is less expensive than comparable metal with specially formed perforations.

Another deflector vane 52 capable of regulating the volume of air flow as well as controlling the direction of discharge is shown in FIGS. 10 and 11. In this case, the vane comprises two elongated sections 53 and 54 co-extensive in length and capable of being positioned as shown in FIG. 10 with the section 54 lying beneath the other section 53. In this condition, the composite vane 52 is movable edgewise back and forth along the tops of the crossbars 55 in the same manner as the vane 13 shown in FIGS. 3 through 6. Bowed spring plates 57 stressed between the tops of the vane and lugs 58 on the diffuser sidewalls 18 and 19 above the vane hold the vane against the crossbars.

To vary the cross-sectional area of the slot-like opening around the composite vane 52, the section 54 is movable relative to the section 53 into a laterally extended position in which the combined width of the two overlapping sections is sufficient to close the passage as shown in FIG. 11. By only partially extending this section from the fully contracted position in FIG. 10, the width of the slot-like opening can be reduced for a correspondingly reduced flow past the deflector vane. In this partially extended condition, the composite vane is movable edgewise along the crossbars to vary the pattern of the discharged air.

The section 54 is made somewhat narrower and substantially thinner than the section 53 and the underside of the wider section is formed with a longitudinal recess 59 for receiving the section 54 in the contracted position with the undersides of both sections engaging the tops of the crossbars. A longitudinal rib 60 is formed on the underside of each section and a group of laterally spaced notches 61 are formed in the top of each crossbar to receive these ribs in each position and condition of the composite vane. Thus, the two sections are held positively in place, but are adjustable individually or simultaneously to vary the volume and direction of discharged air.

From the foregoing, it will be seen that the improved diffuser is versatile and easily adaptable for many different conditions encountered in service use. Not only is the adjustable deflector simply and inexpensively mounted for movement between its various deflecting positions and positively but releasably held in each selected position, but it also may be utilized as a volume control to eliminate the need for a conventional damper.

I claim as my invention:

1. An air distributor having, in combination, first and second elongated walls disposed in laterally spaced side-by-side relation and cooperating to define a passage of elongated cross-section for the flow of air in one direction between said walls, first and second elongated deflecting flanges extending along the downstream edges of said first and second walls, respectively, and projecting across said passage in a common plane to define between their opposed edges an elongated outlet slot for said passage, a plurality of bars spaced apart longitudinally of said passage in a second plane spaced inwardly from and paralleling the plane of said flanges, each of said bars being secured at its opposite ends to said walls to join the latter rigidly together, an elongated deflector vane substantially narrower than said passage disposed in and extending longitudinally of the passage along corresponding sides of said bars with one side of said vane facing upstream, said vane being supported on said bars for back and forth edgewise movement relative to the bars between a first deflecting position in which one longitudinal edge of the vane is closely adjacent said first wall and the other edge is spaced from said second wall to define a slot-like opening in said passage aligned with said second flange,

6

and a second deflecting position closely adjacent said second wall to define a slot-like opening in said passage aligned with said first flange whereby said vane and one of said deflecting flanges cooperate to deflect air flowing through said passage first laterally and along one of said walls and then out through said outlet slot along an inclined path, and means for holding said vane releasably in each selected position relative to said bars.

2. An air distributor as defined in claim 1 in which said holding means comprise a plurality of resiliently flexible spring arms supported on said walls and pressed against the side of said vane opposite said bars thereby to hold the vane against the bars.

3. An air distributor as defined in claim 2 further including a longitudinal rib on the side of said vane adjacent said bars, and two laterally spaced series of longitudinally aligned notches in said bars positioned to receive said rib in said first and second positions and coast with said spring arms in holding said vane in the pre-selected positions.

4. An air distributor as defined in claim 3 including a third series of aligned notches in said bars positioned between said two series to receive said rib in a third position of said vane spaced from both said walls.

5. An air distributor as defined in claim 2 including opposed abutment surfaces on said vane and said crossbars for cooperating with said spring arms in positively holding said vane in a plurality of different laterally spaced positions.

6. An air distributor as defined in claim 1 in which said vane comprises two elongated and laterally overlapping sections coextensive in length and having a combined width sufficient to close said passage, said sections being slidable laterally relative to each other to contract said vane to a width substantially less than the passage width and to extend the vane to close the passage.

7. An air distributor as defined in claim 6 including a longitudinal rib on the side of each section adjacent said bars, and aligned notches in said bars for receiving both said ribs when said sections are extended to close said passage and when said sections are contracted and said vane is disposed in each of said positions.

8. An air distributor as defined in claim 1 in which said vane is composed of perforated metal having approximately substantial free area for passing air through the vane to merge with the air deflected by said flanges.

9. An air distributor as defined in claim 1 in which said vane is of inverted U-shaped cross-section with a flange on each of said longitudinal edges projecting toward said outlet slot to cooperate with the adjacent walls in channeling and guiding air from said openings toward said deflecting flanges, and said flat side is perforated to pass a substantial amount of air through said vane without deflection to merge with the air flowing laterally off said deflecting flanges.

10. An air distributor having, in combination, first and second upright walls disposed in laterally spaced side-by-side relation and cooperating to define a passage for the flow of air downwardly between said walls, a pair of flanges extending laterally toward each other from the lower edges of said walls in a common plane perpendicular to said flow and defining an outlet slot substantially narrower than the width of said passage, two bars secured to said walls and extending laterally across said passage in a common plane spaced above said flanges, an elongated deflector vane substantially narrower than the width of said passage disposed in the passage between said bars and said flanges in a plane spaced above and paralleling the flanges, said vane having laterally elongated slots therein aligned with said bars, screws threaded into said bars through said slots and having heads engaging the underside of said vane thereby to suspend the vane from the bars while permitting back and forth edgewise sliding of the vane along said screws between a first position in which the vane is closely adjacent said

first wall and spaced from said second wall and a second position in which the vane is closely adjacent said second wall, means on said screws accessible through said outlet slot for turning the screws and shifting the vane between raised and lowered positions, and two ribs extending the full length of said passage and projecting toward each other from said walls in a common plane parallel to said vane and spaced above the latter, the adjacent ends of said ribs being spaced apart a distance less than the width of said vane whereby said vane is adjustable toward and away from said ribs to vary the area of the passage between the vane and said ribs and to close the passage when the vane is in said raised position.

11. An air distributor as defined in claim 10 further including coiled springs telescoped onto said screws and compressed between said bars and said vane to urge the latter into frictional engagement with said heads.

12. An air distributor having, in combination, first and second walls disposed in laterally spaced side-by-side relation and cooperating to define a passage for the flow of air in one direction between said walls, a pair of flanges extending laterally toward each other from the downstream edges of said walls and defining an elongated outlet slot substantially narrower than the width of said passage, an elongated deflector vane substantially narrower than said passage disposed in the passage in a plane spaced inwardly from said slot and generally parallel to said flanges with one side of the vane facing upstream, means supporting said vane in said passage for selective back and forth lateral movement between a first position in which the vane is closely adjacent said first wall and spaced from said second wall, a second position in which said vane is closely adjacent said second wall and spaced from said first wall, and a third position in which said vane is generally centered between said walls, elongated members projecting toward each other from said walls in a common plane spaced inwardly from and paralleling the plane of said deflector vane and spaced apart to define a second slot of approximately the same width as said vane and centered between said walls, and means for selectively adjusting said vane sideways toward and away from said members from an open position spaced outwardly from the members to a closed position closely adjacent the members.

13. In an air distributor, the combination of, first and second walls disposed in laterally spaced side-by-side relation and cooperating to define an elongated passage for the flow of air in one direction between said walls, at least one elongated flange extending laterally part way across said passage from the downstream end of said first wall to define an elongated outlet slot substantially narrower than the width of said passage, an elongated deflector vane narrower than the width of said passage spaced inwardly from said slot, said vane extending transversely of the direction of air flow and having a longitudinal edge spaced from said first wall to deflect air in said passage along said first wall and toward said flange, a member spaced inwardly from said vane and projecting laterally part way across said passage from said first wall to define a second slot for the flow of air between said walls toward said vane, said second slot being approximately the same width as said vane, and means for relatively moving said vane and said member parallel to the direction of flow to vary the area of the flow passage defined between said member and said longitudinal edge.

14. An air distributor having, in combination, first and second walls disposed in laterally spaced side-by-side relation and cooperating to define an elongated passage for the flow of air in one direction between said walls, a first elongated flange projecting laterally part way across said passage from the downstream end of said first wall to define an elongated outlet slot substantially narrower than the width of said passage, an elongated deflector vane in said passage in a plane spaced inwardly from said slot with one edge of said vane spaced from said first wall to define a slot-like opening along said first wall,

the other edge of said vane being closely adjacent said second wall whereby the vane deflects air laterally toward said first wall to flow through said opening and along said first wall toward said flange, means defining a plurality of perforations in said vane for admitting a substantial amount of air directly through the vane to flow toward said outlet slot, and a second elongated flange on said vane extending along said one edge and projecting toward said outlet slot from said vane to cooperate with said first wall in channeling the air passing through said opening toward said first flange for sharp deflection laterally across and through said slot whereby the deflected air merges with and similarly deflects the air from said perforations.

15. An air distributor having, in combination, first and second elongated walls disposed in laterally spaced side-by-side relation and cooperating to define a passage for the flow of air in one direction between said walls, said passage being elongated in a direction perpendicular to said flow, a pair of elongated flanges extending laterally toward each other from the downstream edges of said walls and defining an elongated outlet slot substantially narrower than the width of said passage, an elongated deflector vane substantially narrower than said passage disposed in the passage in a plane spaced inwardly from said slot and generally parallel to said flanges, two laterally extending crossbars spaced apart longitudinally of said passage and each secured at its opposite ends to said walls, and means supporting said vane on said bars for back and forth edgewise movement between a first position in which the vane is closely adjacent said first wall and spaced from said second wall and a second position to which the vane is closely adjacent said second wall thereby to vary the direction of deflection of air discharged through said slot.

16. An air distributor having, in combination, first and second walls disposed in laterally spaced side-by-side relation and cooperating to define a passage for the flow of air in one direction between said walls, a pair of flanges extending laterally toward each other from the downstream edges of said walls and defining an elongated outlet slot substantially narrower than the width of said passage, a deflector vane substantially narrower than said passage disposed in the passage in a plane spaced inwardly from said slot and generally parallel to said flanges, and means supporting said vane in said passage for back and forth edgewise movement in said plane between a first position in which the vane is closely adjacent said first wall and spaced from said second wall and a second position in which the vane is closely adjacent said second wall thereby to vary the direction of deflection of air discharged through said slot.

17. An air distributor having, in combination, first and second walls disposed in laterally spaced side-by-side relation and cooperating to define a passage for the flow of air in one direction between said walls, a flange extending laterally part way across said passage from the downstream end of said first wall to define an elongated outlet slot substantially narrower than the width of said passage, a deflector vane substantially narrower than said passage disposed in a plane spaced inwardly from said slot and parallel to said flange, and means supporting said vane in said passage for back and forth edgewise movement in said plane from a first position in which one longitudinal edge of the vane is closely adjacent said second wall and the other edge is spaced from said first wall to a second position in which said one edge is closely adjacent said first wall thereby to vary the direction of deflection of air discharge through said slot.

18. In an air distributor, the combination of, first and second walls disposed in lateral spaced side-by-side relation and cooperating to define a passage for the flow of air in one direction between said walls and an outlet slot between the downstream edges of said walls, an elongated deflector in said passage spaced inwardly from said slot

and narrower than the passage to extend part way across the latter, and means supporting said deflector for back and forth sidewise movement transversely of said passage relative to said walls from a first position in which one longitudinal side of said deflector is closely adjacent said first wall whereby air is deflected around the deflector and along said second wall, to a second position in which said one side is spaced from said first wall.

## References Cited by the Examiner

## UNITED STATES PATENTS

3,183,821 5/1965 Averill et al. ----- 98—40

5 ROBERT A. O'LEARY, *Primary Examiner*.JOHN F. O'CONNOR, *Examiner*.