

Oct. 22, 1968

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3,406,623

PLENUM AIR DIFFUSER ASSEMBLY

Filed May 9, 1967

2 Sheets-Sheet 1

FIG. 1.

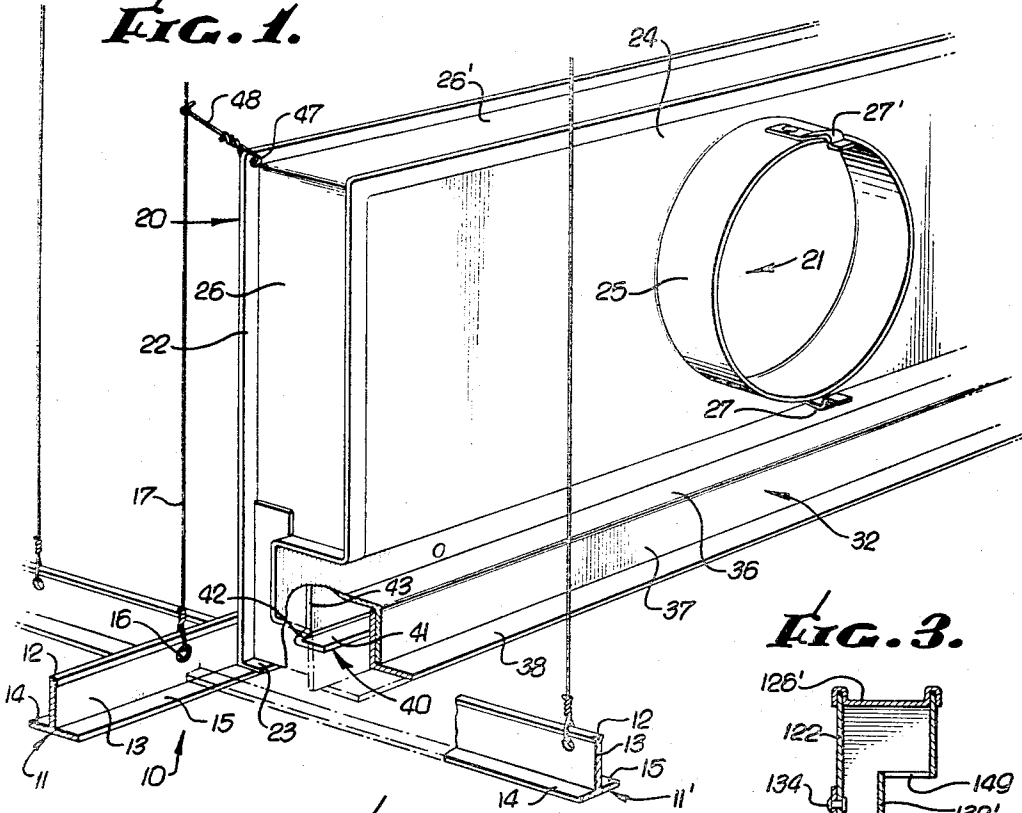


FIG. 2.

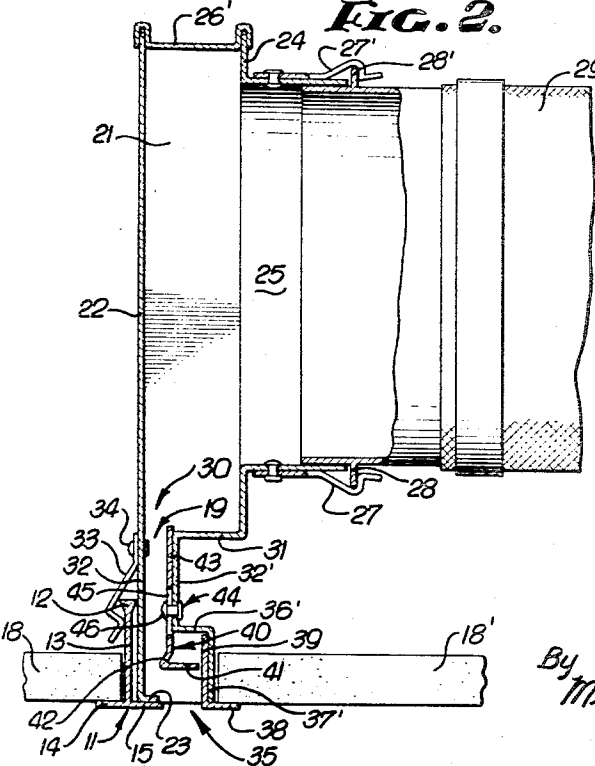


FIG. 3.

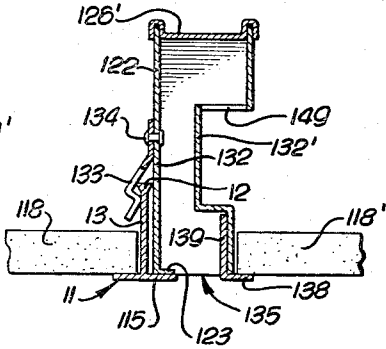
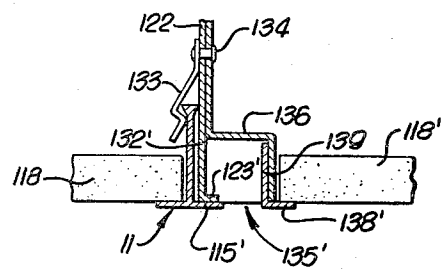


FIG. 4.



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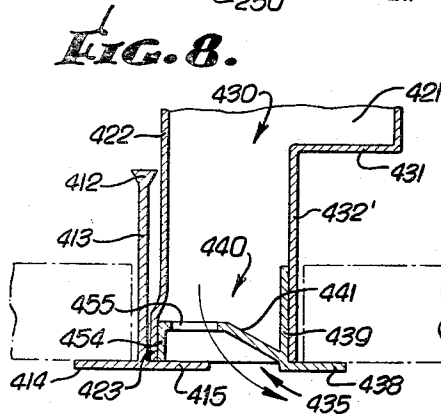
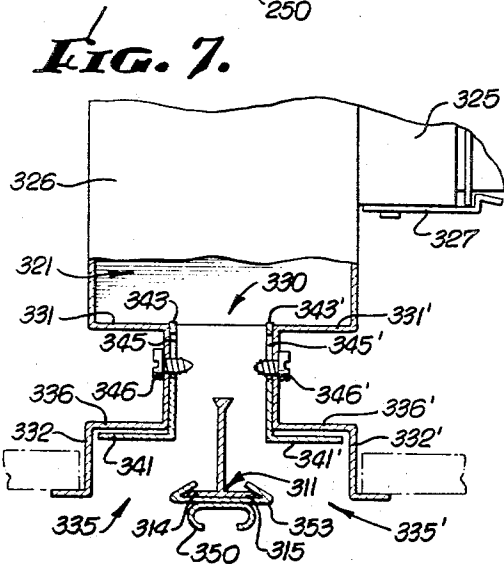
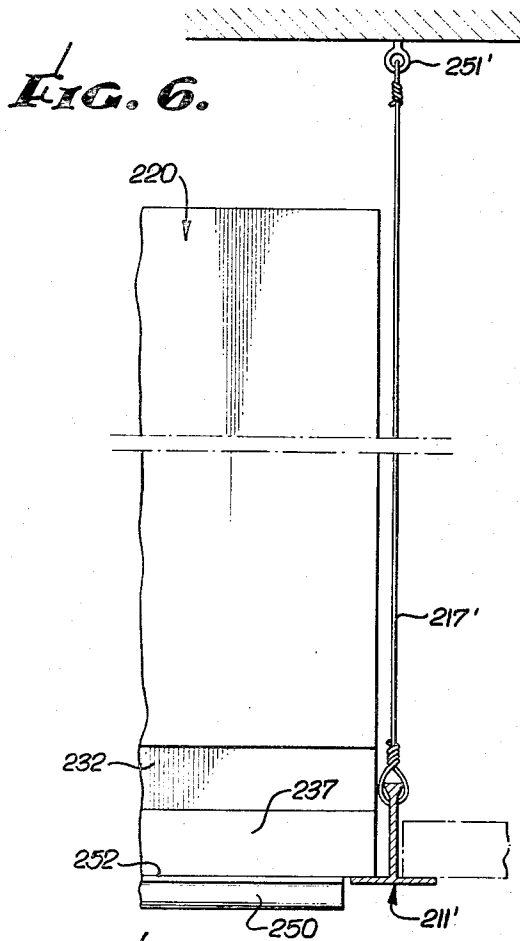
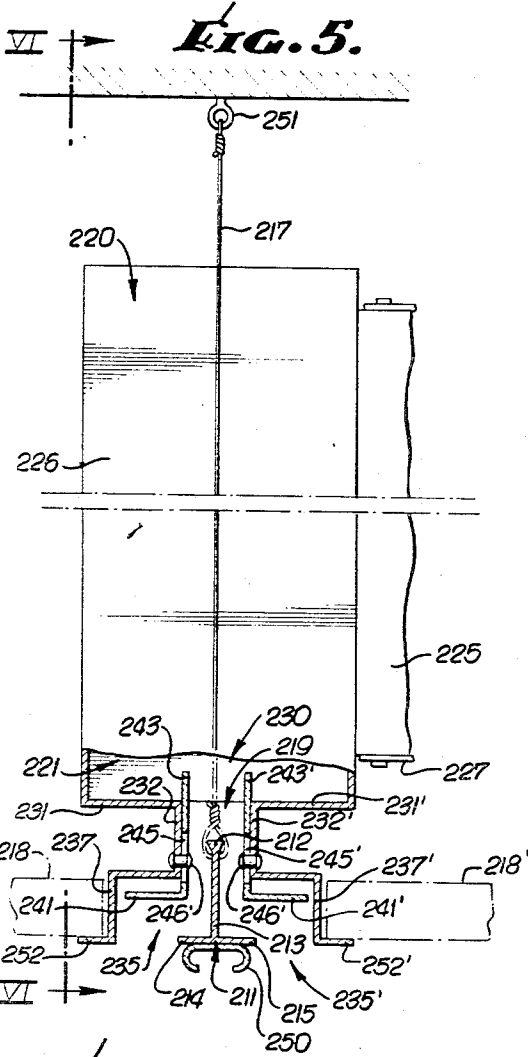
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PLENUM AIR DIFFUSER ASSEMBLY

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ABSTRACT OF THE DISCLOSURE

A plenum air diffuser assembly including a rear wall having a bottom footing to seat on a flange of an inverted T-bar framework provided in a suspended ceiling installation, the inverted T-bar flange also defining a portion of the diffuser outlet at the plane of the surrounding suspended ceiling tiles, and a flange on the assembly front wall to support an adjacent ceiling tile. A weir plate located in the air diffuser with a horizontal plate disposed parallel and spaced above the plane of the diffuser outlet, the horizontal plate having an effective width equal to that of the diffuser outlet, and means for mounting the weir for vertical movement to place the horizontal plate in selected location above and parallel to the plane of the diffuser outlet.

BACKGROUND OF THE INVENTION

This invention relates to a plenum air diffuser assembly adapted to be integrated into a sub-ceiling suspended from a main ceiling, the sub-ceiling or suspended ceiling being composed of inverted T-bar ceiling elements which support ceiling tile or acoustical boards. The portion between the suspended ceiling and the actual ceiling is generally used to house piping for plumbing, electrical conduits, telephone lines, etc. In addition, this attic above the suspended ceiling has been used to provide ducts for providing conditioned air into the room or rooms below the suspended ceiling.

Suspended ceiling arrangements are becoming very prevalent in new office buildings as well as in older office buildings which originally had very high ceilings. In those office buildings provided with suspended ceiling installations which did not include a means for supplying conditioned air into the room it has been found to be difficult to construct means for providing such conditioned air without greatly disrupting the suspended installation and without giving the room the appearance of having been altered specifically so that the room could be supplied with conditioned air.

Another problem with the prior art devices which supply conditioned air to a room is the disadvantage that the air from the duct is not distributed uniformly through the room; a person standing directly beneath the duct is hit with a cold or hot draft of air, as the case may be, while a person standing on the other side of the room may not feel the general effect of the conditioned air.

SUMMARY OF INVENTION

It is therefore a general object of this invention to disclose and provide a plenum air diffuser assembly which can be easily integrated into an existing suspended ceiling installation. It is a further object of this invention to disclose and provide a plenum air diffuser assembly which can be readily adjusted to selectively deliver conditioned air throughout the entire room below the plane of the ceiling.

Generally stated, the present invention comprises an assembly for supplying air to a room. The lower portion of the assembly includes an air diffuser which stands on and is supported by an inverted T-bar of the suspended

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ceiling. The air diffuser has at least one outlet for supplying conditioned air to the room below and a weir member having a plate portion which has substantially the same effective horizontal width as the diffuser outlet. Preferably the weir plate is virtually horizontal to the plane of the suspended ceiling and the weir member has weir mounting means for mounting the weir member for vertical movement relative to the suspended ceiling to adjustably position the horizontal weir plate in selected locations within the air diffuser.

The air diffuser has a tile supporting flange extending laterally from a lower end of one of the air diffuser walls. This wall also, preferably, defines a portion of the air diffuser outlet; another part of the diffuser outlet being defined by a flange of an inverted T-bar.

Above the air diffuser is a plenum chamber having an inlet and an outlet, the outlet being connected to an inlet neck of the air diffuser. The outlet of the air diffuser is so positioned that air coming from the plenum outlet cannot pass directly out of the air diffuser outlet. This is preferably accomplished by having the air diffuser outlet offset from the air diffuser inlet.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view, partly in section, of the preferred exemplary embodiment of a plenum air diffuser assembly according to the present invention installed in a suspended ceiling installation ready to receive flexible air supply conduit to be attached thereto;

FIG. 2 is an enlarged sectional view of the plenum air diffuser assembly of FIG. 1 with a flexible air supply conduit connected thereto and, additionally, exemplary ceiling tiles;

FIG. 3 is a sectional view of an exemplary return air duct assembly to be located in a suspended air ceiling installation in combination with the exemplary plenum air diffuser assembly of my invention;

FIG. 4 is a sectional view of a false air duct assembly to be installed in combination with the exemplary plenum air diffuser assembly of FIGS. 1 and 2;

FIG. 5 is a sectional view of a first alternative exemplary embodiment of a plenum air diffuser assembly installed in a suspended ceiling installation ready to receive a flexible air supply conduit to be attached thereto;

FIG. 6 is a sectional view of the plenum air diffuser assembly of FIG. 5 taken therein along the plane VI-VI;

FIG. 7 is a partial sectional view of a modified alternative exemplary embodiment of a plenum air diffuser assembly installed in a suspended ceiling installation; and

FIG. 8 is a sectional view of a second alternative exemplary embodiment of a plenum air diffuser assembly according to my present invention installed in a suspended ceiling installation.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now particularly to FIGS. 1 through 4, an exemplary embodiment of a plenum air diffuser assembly and integrated suspended ceiling installation, according to my invention, will be described in detail. It should be noted here that the embodiment of FIGS. 1 and 2 is a preferred embodiment, but that other modifications and alterations as shown in FIGS. 5 through 8, as well as others not shown are contemplated within the scope of my invention.

In FIG. 1, the plenum air diffuser assembly, indicated generally at 20, is shown installed in a suspended ceiling system, indicated generally at 10. The ceiling system is of the type wherein a false, lowered ceiling is provided

by ceiling tiles or acoustical boards 18 and 18' supported by a framework or grid of inverted T-bar ceiling elements 11 and 11'. Each of the inverted T-bar ceiling elements has a vertical leg or web 13 which has an aperture 16 through which a hanger wire 17 is connected. Wire 17 is connected to the ceiling or soffit by any suitable means, not shown. Each inverted T-bar ceiling element has an outwardly extending bottom flange or flange portion 14 and another oppositely outwardly extending bottom flange or flange portion 15. The ceiling tile or acoustical board 18 is supported on flange portion 14. Ceiling or acoustical board 18' is supported by tile supporting flange 38 of the air diffuser.

The plenum air diffuser assembly is supported on the inverted T-bar ceiling element 11 by a bottom wall portion or footing of the assembly rear wall 22. Wall 22 has an upper portion defining part of a plenum, a lower portion defining part of the diffuser and the bottom wall portion or bottom inturned footing flange 23 which rests or seats along its entire length on the outwardly extending bottom flange 15. The assembly thus stands on the inverted T-bar flange and in order to prevent the plenum air diffuser assembly from tipping, a wire 48 (which is connected to hanger wire 17) is attached at the top of the vertical rear wall 22 of the plenum air diffuser assembly through hole 47. The plenum air diffuser assembly is also stabilized by having a spring clip 33 which slips over the ceiling element head 12. The spring clip 33 is attached to the upper portion of the upper rear wall 32 of the air diffuser by fastener means, e.g., a rivet 34.

A flexible air supply conduit 29, as best seen in FIG. 2, for supplying conditioned air to the plenum air diffuser assembly, is connected to the plenum inlet 25 located in the front wall 24 of the plenum chamber. The conduit 29 is connected to the plenum inlet 25 by spring clips 27 and 27' which clip over or on flanges 28 and 28' of conduit 29.

The plenum chamber 21 has six walls, a vertical back wall 22, a vertical front wall 24, a top wall 26', a bottom wall 31, a forward side wall 26, and a rearward side wall, not shown. As has already been noted, the conditioned air is received by the plenum chamber through a plenum inlet 25 located in the front wall 24 of the plenum chamber. The conditioned air travels out of the plenum chamber through an outlet or aperture 30 in the bottom wall 31 of the plenum chamber. This slot or aperture 30 is connected to a narrowed or reduced neck inlet, indicated generally at 19, of the air diffuser. The neck inlet is formed by upper rear wall 32 (a lower integral portion of back wall 22 of the assembly) and upper forward wall 32' of the air diffuser. The lower portion of the air diffuser is made wider than the upper neck inlet by providing horizontal wall 36'.

A weir means, indicated generally at 40, is provided for controlling air flow from the plenum out of the diffuser assembly outlet, indicated generally at 35. The weir means includes a horizontal plate portion 41 having a width approximately equal to that of the diffuser outlet, indicated generally at 35, at the plane of the suspended ceiling. An air deflection portion 42 joins plate 41 to a vertical body or plate 43.

Air flow from the air plenum 21 is directed by neck inlet 19 against the weir member, indicated generally at 40. The weir member, depending upon its vertical location within the diffuser, selectively deflects air passing its outwardly inclined deflection portion 42 toward the assembly back wall and the footing flange 23 and T-bar flange portion 15.

Weir mounting means are provided for mounting the weir member and its horizontal plate for vertical movement or translation while the plate 41 is maintained generally horizontal, i.e., parallel to the plane of the suspended ceiling. Such mounting means in the exemplary embodiment include the provision of the vertical plate 43 slidably abutting the assembly wall 32 and the adjustable

fastener means, indicated generally at 44, acting through slot 45 to hold plate 43 to wall 32 in selected vertical adjustment. The fastener means may comprise a round headed bolt conventional nut fastener 46.

By loosening the fastener means 46, the vertical plate or body 43 may be moved upwardly or downwardly via the slot 45. This in turn moves the horizontal weir flange 41 and the offsetting web 42 upwardly or downwardly. In this manner the angle that the air leaves the diffuser outlet 35 can be controlled. For example, if the horizontal weir plate 41 is at its uppermost position the plenum air received in the diffuser portion will strike the inner front wall provided by upper leg 39 of tile supporting flange 38. This will cause the air to flow out of the outlet 35 in a generally straight downward direction. With the weir plate 41 in its lowermost position the plenum air will tend to be deflected by the weir plate against the T-bar flange and out of the diffuser outlet 35 generally along the plane of the ceiling. Intermediate positions for weir member 40 will cause air flow in a variety of selectable flow paths from outlet 35 between the generally straight down and generally horizontal paths described.

Tile supporting flange 38 is attached by any suitable means, e.g. welding, to front wall 37' of the diffuser at the upper leg 39 of the tile supporting flange. If desired, one can omit upper leg 39 and attach tile supporting flange 38, by any suitable means, to the bottom of lower front wall 37' of the air diffuser. The same is true of bottom inturned footing flange 23 which could be eliminated so that the plenum air diffuser assembly would be supported on the T-bar flange by the assembly back wall 32 without having an inturned footing flange.

In practice, it is not necessary that the plenum chamber and air diffuser extend the entire length or width of the ceiling of a room. However, for aesthetic reasons it should appear that the slit or slot of the air diffuser outlet 35 is continuous over the entire length or width of the ceiling of a room. This appearance of a continuous slot throughout the entire length or width of a ceiling can be accomplished as shown in FIGS. 3 and 4.

In FIG. 3, an exemplary embodiment of a return air assembly is shown in which the slot 135 appears to be the same as that shown in FIG. 2, even though the embodiment of FIG. 3 does not have a weir means. A person looking up at the assembly of FIGS. 1 and 2 including the weir plate 41 and looking up at the construction of FIG. 3 cannot perceive any difference in appearance. This return air construction is placed adjacent or longitudinally spaced from the plenum chamber of FIGS. 1 and 2 to provide return circulation of air through return air inlet 149. It should be particularly noted that the construction of FIG. 3 is readily adapted to be integrated into a ceiling installation as the embodiment of FIGS. 1 and 2 since there is provided a flange 138 for supporting the ceiling tile 118' and a back wall footing 123 to stand upon flange 115. A spring clip 133 is attached to rear wall 132 by fastener means e.g. a rivet 134. The spring clip 133 is clipped over the ceiling element head 12 located on top of the vertical leg 13 of the inverted T-bar ceiling element 11.

FIG. 4 shows a "fake" or closed slot assembly construction which functions to close the continuous diffuser slot while making it appear continuously open. The top wall 136 does not have any openings for air travel through slot 135'. To an observer looking at this assembly from below, there is no difference in appearance from the constructions of FIGS. 1 through 3. This assembly also includes a back wall 122' having a footing 123', a spring clip 133, and a front wall tile supporting flange 138' as in the foregoing embodiment.

Referring to FIGS. 5 and 6, an alternative embodiment of a plenum air diffuser assembly, according to my invention, is shown. In this embodiment, the inverted T-bar ceiling elements 211, 211' are suspended from the ceiling by hanger wires 217 and 217', respectively. The

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hanger wires are attached to the ceiling by, e.g. eye bolts 251 and 251'. The plenum chamber, indicated generally at 220, is supplied by conditioned air from the plenum inlet 225 which in turn is attached to any suitable air supply means, not shown.

In the alternative exemplary embodiment of FIG. 5, the plenum air passes out of the plenum outlet 230 into a reduced narrowed inlet neck portion, indicated generally at 219, of the air diffuser. This reduced neck inlet portion is divided into two distinct parts by the ceiling element head 212 and the vertical leg 213 of inverted T-bar ceiling element 211. Two distinct diffuser outlets 235, 235' are thereby formed. Diffuser outlet 235 is bounded by the rear wall 237 of the air diffuser and outwardly extending bottom flange 214 of inverted T-bar ceiling element 211. The other diffuser outlet 235' is bounded by outwardly extending bottom flange 215 of inverted T-bar ceiling element 211 and front wall 237' of the air diffuser.

Horizontal weir plates 241, 241' are positioned directly above each of the diffuser outlets as in the prior embodiment of FIGS. 1 and 2. The width of the horizontal weir plates 241, 241' are substantially the same as the respective diffuser outlets. The weir mounting means, as in the prior embodiment, mount the horizontal weir plates 241, 241' in spaced, parallel position above their respective outlets by fasteners 246, 246'. Fasteners 246, 246' hold vertical plates 243 and 243' to the air diffuser walls 232, 232', respectively. In each vertical plate 243, 243', there are slots or apertures 245, 245' by which the weir plates can be vertically adjusted by merely loosening the fasteners and then, after the particular weir plate is moved upwardly or downwardly into a selected position, tightening the fasteners.

At the bottom, and integrally united thereto, of air diffuser lower walls 237 and 237' are tile supporting flanges 252 and 252'. The ceiling tiles 218, 218' would normally be supported by the bottom flanges of inverted T-bar ceiling elements. When the plenum air diffuser assembly is installed the ceiling system T-bar becomes a part of the diffuser assembly as seen in FIG. 5; the assembly being mounted at its longitudinal ends or cross T-bars, as 211' as seen in FIG. 6.

The inverted T-bar ceiling element 211 has attached to it a curtain rod 250. This arrangement allows the plenum air diffuser assembly to be located directly over a curtain; a portion of the conditioned air passing in front of the curtain and the other portion of the conditioned air passing behind the curtain.

Another embodiment of the plenum air diffuser assembly, according to my invention, is shown in FIG. 7. The plenum outlet, indicated generally at 330, is centered directly over an inverted T-bar ceiling element 311 as in the embodiment of FIGS. 5 and 6. This creates two air diffuser outlets 335 and 335', each accommodating an equal amount of conditioned air. In this embodiment, is provided an air diffuser strip 353 around the outwardly extending bottom flanges 314, 315 of inverted T-bar ceiling element 311 which serves to deflect plenum air at approximately a forty-five degree angle to the plane of the suspended ceiling rather than directly along it with the weir members in fully raised position, as shown. Weir plate 341 and 341' are vertically adjustable by means of slots or apertures 345, 345' located in vertical body plates 343, 343' as in the prior embodiments by bolts 346, 346' which can be loosened to allow plates 343, 343' to be moved upwardly or downwardly as desired.

As seen in FIG. 7, a curtain rod or track 350 may be attached to the diffuser strip 353 by welding or any other suitable fastening means. The diffuser strip 353, by its inclined top flanges, deflects conditioned air from the plenum out of the diffuser into the room areas therebelow on either side of a curtain which may be suspended from the rod or track means 350. This construction is particularly adapted for use in hospital rooms where movable curtains are optionally employed for dividing a single room into separate semi-private areas.

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A still further exemplary embodiment of the plenum air diffuser, according to my invention, is shown in FIG. 8. As in the prior embodiment, the diffuser assembly has a rear wall 422 forming one of the side walls of the plenum and the diffuser of the assembly as well as providing a lower footing 423 which seats upon the inverted T-bar flange 215. The assembly is thereby easily introduced into a preassembled suspended ceiling system by merely removing a ceiling tile, standing the assembly on the T-bar flange 215, as well as cross T-bar flanges at opposite ends of the assembly, and placing a reshaped ceiling tile back into the ceiling system on the new tile supporting flange 438 provided by the diffuser assembly as hereinafter explained.

The tile supporting flange 438 is provided at the forward wall 432' of the diffuser as an integral part of an easily assembled weir member 440. In this embodiment, the weir member 440 includes a central plate area with a plurality of ports or apertures 455 as well as a generally inclined portion 441. The weir member is easily positioned into the diffuser assembly, without additional fastening or welded means through the provision of an upstanding wall 439, which abuts the inner surface of diffuser front wall 432', and the depending wall 454 seated upon the inverted T-bar flange 215. As seen in FIG. 8, the cooperation between weir member walls 439 and 454 with the diffuser wall 432' and the lower end 423 of back wall 422 causes positioning of the weir member 440 within the diffuser and maintains the integral tile supporting flange 438 assembled to the diffuser portion of the assembly. The weir member 440 has the same effective width as the air diffuser outlet, indicated generally at 435, due to the effective horizontal width of the inclined portion 441, as seen in FIG. 8, therein.

In the exemplary embodiment of FIG. 8, conditioned air coming out of the plenum 421 via the plenum outlet, indicated generally at 430, is directed by the weir member through the plurality of ports 455 toward the T-bar flange 215, at which the air is deflected outwardly of the diffuser as indicated by the arrow in FIG. 8.

As is apparent to those skilled in the art from the foregoing detailed descriptions of the preferred and alternative exemplary embodiments of the plenum air diffuser assembly, according to my invention, the assembly according to the present invention is particularly suited for use in preassembled suspended ceiling insulations. The assemblies are very easily integrated into the pre-existing inverted T-bars provided in the installed ceiling system. The diffuser outlet from which a conditioned air is directed into the room area beneath the ceiling is partially formed by one of the pre-existing inverted T-bar bottom flanges. The T-bar flange thus perform a new function as part of the diffuser assembly rather than as merely a tile supporting flange. The assembly includes a flange for supporting a shortened piece of ceiling tile. The construction according to the present invention allows the complete integration of a plenum air diffuser assembly into the pre-existing ceiling components including ceiling tile or boards, lighting fixtures and other ducts, conduits or wires employed without the need for redesigning or special engineering of a new ceiling system. In the exemplary embodiments having a movable weir member, the direction of air flow into the room area beneath the ceiling is readily adjustable. The vertically adjustable horizontal plate included in the exemplary weir means, in addition to its function in controlling air flow through the diffuser, provides a surface traversing the effective width of the diffuser outlet which can be seen by a viewer from beneath the ceiling insulation giving the appearance of a finished, completed installation with clean lines rather than a clutter of veins and hinged plates as in prior conventional installations.

According to the present invention, the plenum air diffuser assembly is adapted to be integrated into a ceiling system with generally similarly constructed and installed air return duct assemblies as well as "fake" or closure assemblies. A single continuously extending outlet

may thus be provided for the entire length of a ceiling with a variety of combinations of air diffusers, air return ducts and blank or closure assemblies included in the system to provide the uniformly appearing outlet in the ceiling. A very pleasing and economically installed air conditioning system is thus easily integrated into a suspended ceiling system.

While I described a preferred exemplary embodiment as well as various alternative exemplary embodiments of the plenum air diffuser assembly herein according to the present invention, it should be understood that other modifications, alterations and adaptations thereof may be made within the scope of my present invention which is defined and limited only by the following claims.

I claim:

1. A plenum air diffuser assembly to be introduced into a previously assembled suspended ceiling installation having a grid or framework of metal T-bars supporting a plurality of ceiling tiles, comprising:

a plenum chamber including an inlet to be connected to a source of air under pressure and an outlet;

an air diffuser having an inlet neck connected to the outlet of the plenum chamber, a front wall and a back wall, and at least one outlet which is offset from said air diffuser inlet, said air diffuser outlet being defined partly by the bottom of one of said walls and a flange of one of said T-bars, said flange being located directly under the plenum outlet;

a weir member having a plate which has an effective horizontal width substantially equal to the width of said air diffuser outlet, said weir member being located between said air diffuser walls and sufficiently above said air diffuser outlet to allow air to pass therethrough; and

a tile supporting flange extending laterally from a lower end of said one of said walls.

2. A plenum air diffuser assembly according to claim 1 wherein:

means are provided for mounting said weir member for vertical movement, whereby said weir member can be moved vertically relative to said air diffuser outlet, to adjust the direction of the flow of air from said air diffuser outlet.

3. A plenum air diffuser assembly according to claim 1 wherein:

said air diffuser back wall is provided with a bottom footing flange to stand the plenum air diffuser assembly on an associated, adjacent T-bar flange.

4. A plenum air diffuser assembly according to claim 1 wherein:

both the front wall and the back wall of the air diffuser have a tile supporting flange extending laterally therefrom;

the air diffuser has two outlets, each of which is offset from the plenum chamber outlet, one of said outlets being defined partly by the back wall of the air diffuser and by an outwardly extending first bottom flange portion of a T-bar and the other of said outlets being defined by the front wall of the air diffuser and by a second bottom flange portion of the same T-bar but extending in an opposite direction to that of said first bottom flange.

5. A plenum air diffuser assembly according to claim 4 wherein:

an adjustable weir plate having substantially the same effective horizontal width as the corresponding air diffuser outlet is located directly above each air diffuser outlet.

6. A plenum air diffuser assembly according to claim 4 wherein each of said first and second bottom flange portions of said T-bar is located directly under one-half of the plenum chamber outlet.

7. In an air diffuser assembly to be introduced into a previously assembled suspended ceiling installation hav-

ing a ceiling tile supporting framework of inverted T-bars, the improvement comprising the provision of:

a generally planar back wall in said assembly having an upper wall portion defining a portion of an air plenum in said assembly, the lower wall portion defining a portion of an air diffuser in said assembly and a bottom wall portion seated upon an associated inverted T-bar flange portion of said ceiling tile supporting framework;

a front wall in said assembly connected to said back wall seated on said T-bar, and defining a diffuser outlet passage with said bottom wall portion, said assembly being supported in said ceiling installation by said previously assembled ceiling tile supporting framework;

a weir plate having a horizontal plate portion provided between said front and back walls; and weir plate mounting means supported on one of said walls for mounting said weir plate and its horizontal plate portion for movement in a vertical direction to, and maintaining said plate portion horizontal to, the plane of said ceiling.

8. The improvement in air diffuser assembly of claim 7 wherein:

said back wall bottom wall portion is provided with a bottom footing flange to seat on said associated T-bar flange portion, said footing flange having a width of less than that of said T-bar flange portion, and said associated T-bar flange portion upon which said assembly back wall is seated defines an edge of an outlet of said diffuser at the plane of said suspended ceiling.

9. In an air diffuser assembly to be introduced into a previously assembled suspended ceiling installation having a ceiling tile supporting framework of inverted T-bars, the improvement comprising the provision of:

a generally planar back wall in said assembly having an upper wall portion defining a portion of an air plenum in said assembly, the lower wall portion defining a portion of an air diffuser in said assembly and a bottom wall portion seated upon an associated inverted T-bar flange portion of said ceiling tile supporting framework; and

a front wall in said assembly connected to said back wall seated on said T-bar, and defining a diffuser outlet passage with said bottom wall portion, said front wall being provided with a laterally extending flange to receive and support an edge of associated ceiling tile by way of said T-bar but spaced therefrom by a spacing of said front and back walls of said diffuser assembly, said assembly being supported in said ceiling installation by said previously assembled ceiling tile supporting framework.

10. The improvement in air diffuser assembly of claim 9 wherein:

said associated T-bar flange portion upon which said assembly back bottom wall portion is seated defines an edge of an outlet of said diffuser outlet passage at the plane of said suspended ceiling.

11. The improvement in air diffuser assembly of claim 10 wherein:

a weir plate is provided between said front and back walls having an effective horizontal width substantially at least equal to the width of said outlet from said diffuser.

12. In an air diffuser assembly to be introduced into a previously assembled suspended ceiling installation having a ceiling tile supporting framework of spaced inverted T-bars and cross T-bars, the improvement comprising the provision of:

a generally planar back wall in said assembly having an upper wall portion defining a portion of an air plenum in said assembly, a lower wall portion defining a portion of an air diffuser in said assembly and a bottom

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wall portion seated upon flanges of a single inverted T-bar and at least one cross T-bar of said ceiling tile supporting framework; and

a front wall in said assembly connected to said back wall and supported from said single inverted T-bar through said back wall, said front wall having a lower wall portion defining a diffuser outlet passage with said back wall lower wall portion and a diffuser outlet with the flange of said single inverted T-bar.

13. The improvement of claim 12 wherein said front wall lower wall portion includes a laterally extending ceiling tile supporting flange.

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