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|-----------|---------|--------------|----------|
| 3,190,208 | 6/1965 | Styne et al. | 98/40 |
| 3,203,150 | 8/1965 | Serneblad | 52/665 X |
| 3,302,355 | 2/1967 | Chinneck | 52/484 |
| 3,333,387 | 8/1967 | Deakins | 52/484 X |
| 3,471,981 | 10/1969 | Segil et al. | 52/484 X |

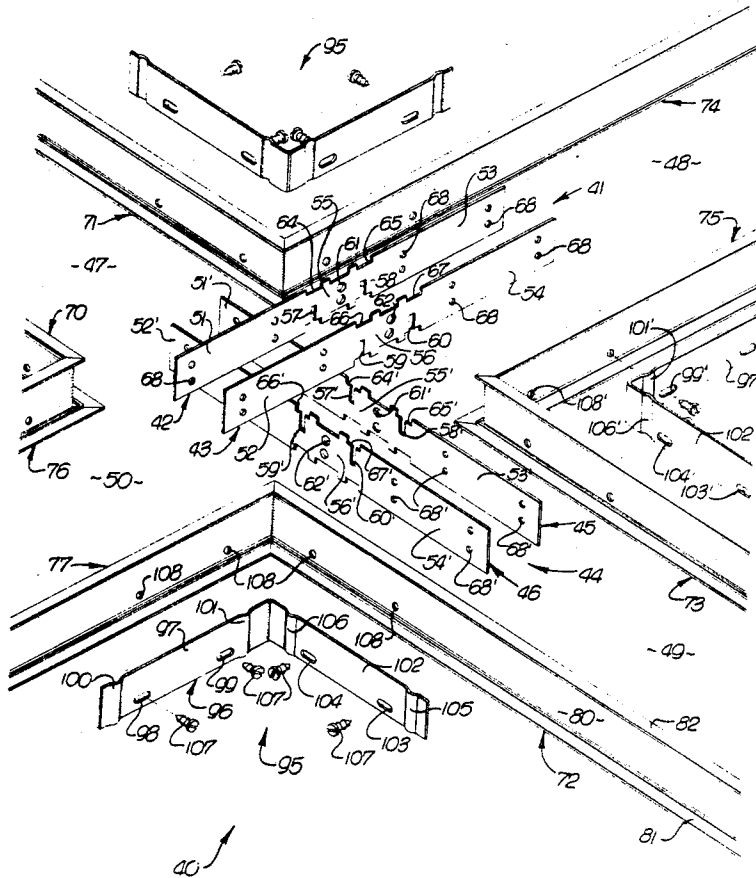
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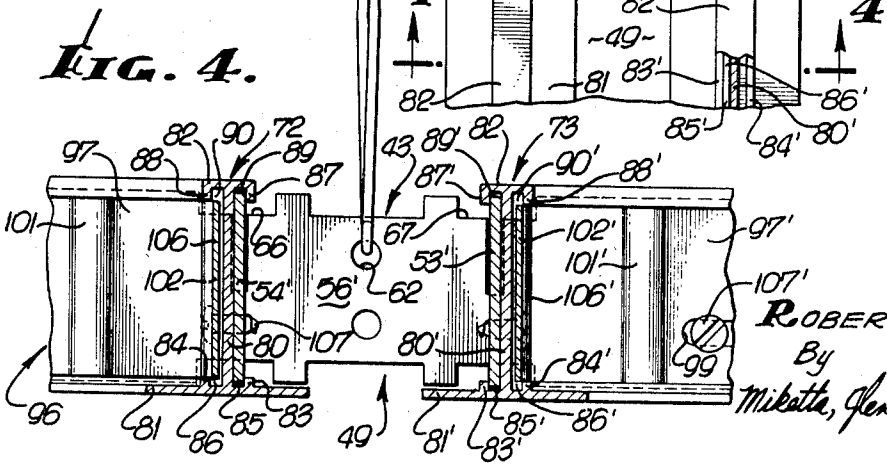
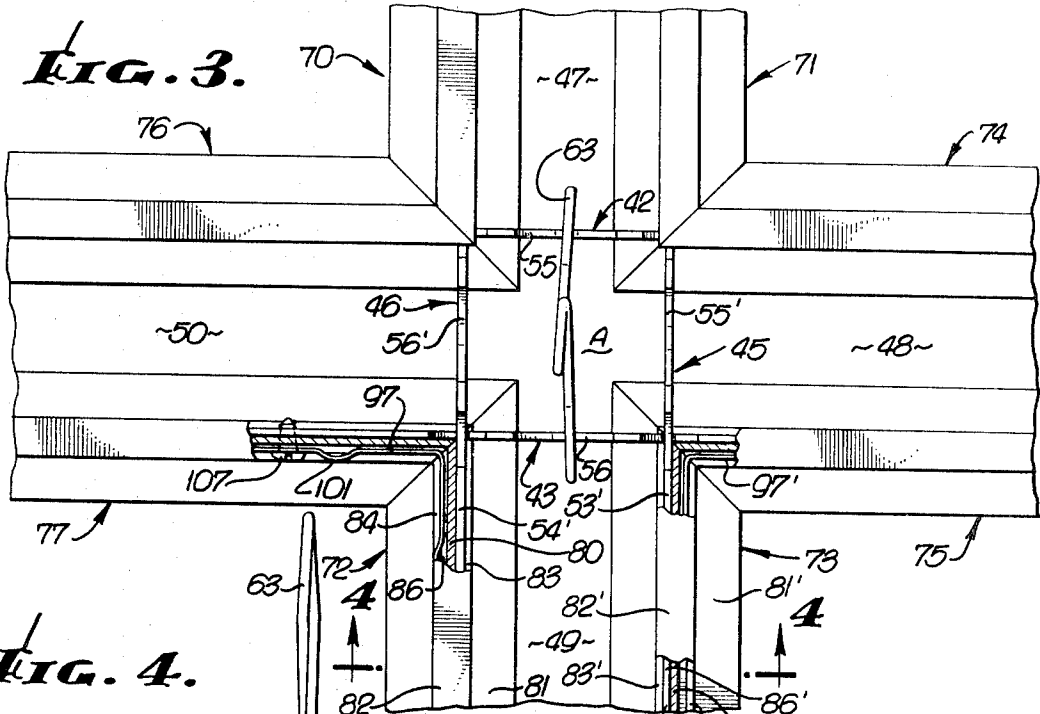
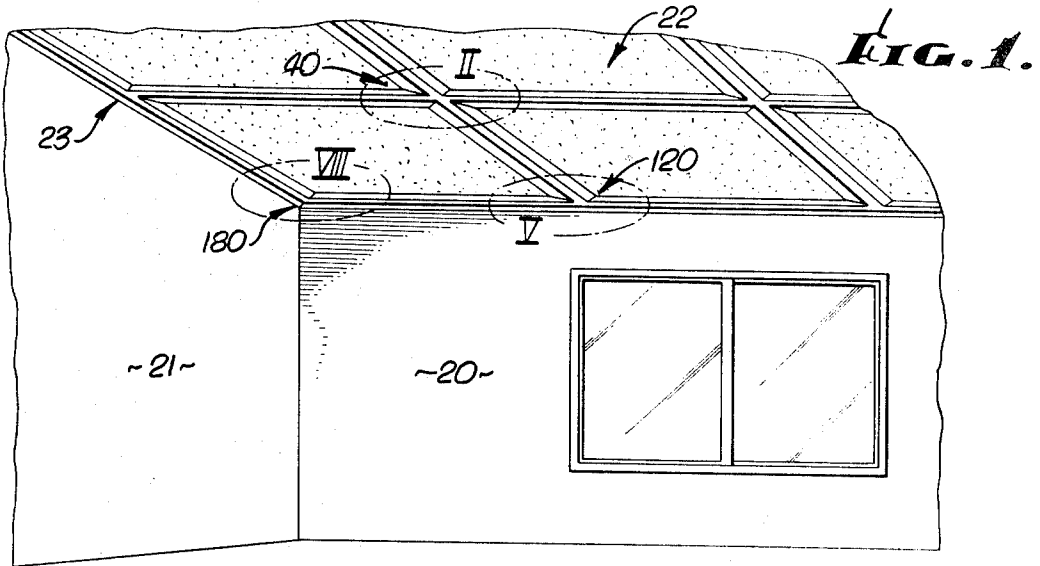
[54] **SUSPENDED CEILING SUPPORT AND AIR DISTRIBUTION OUTLET ASSEMBLY**
10 Claims, 10 Drawing Figs.

[52] U.S. Cl. **52/475,**
 52/664, 98/40, 287/189.36
 [51] Int. Cl. **F04b 5/52,**
 F24f 7/04, F24f 13/08
 [50] Field of Search 52/221,
 664, 484, 665, 493, 496; 98/40 D, 40 DL;
 287/20.92 C, 186.36 A

[56] **References Cited**
UNITED STATES PATENTS
 2,675,895 4/1954 Loewenstein 189/36 X
 3,031,042 4/1962 Drackett 52/484 X

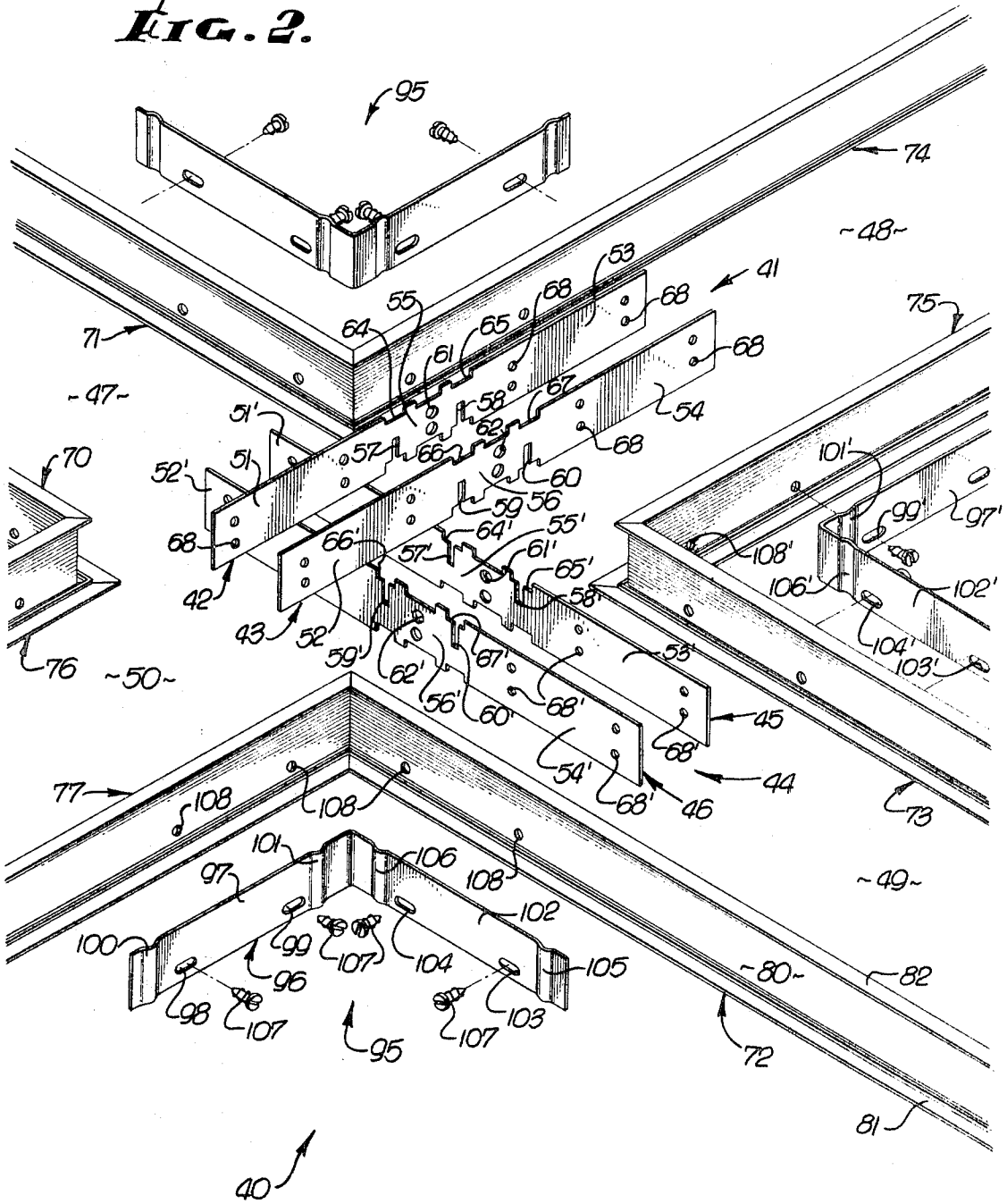
ABSTRACT: A suspended ceiling support assembly providing longitudinally extending air distribution outlets in a ceiling plane, the outlets intersecting in either the midportion of the ceiling, the intersection of the ceiling with a wall, or the intersection of the ceiling with two intersecting walls, each of the outlets comprising inverted T-shaped longitudinally extending ceiling elements in spaced parallel relation each including provision for connection to hangers, the hangers comprising an arrangement or grid of spaced-apart members which may be interfitted in various combinations to provide a grid of cruciform, T, or right-angle shape and on which the inverted T-shaped ceiling elements are mounted providing various air distribution outlet intersection configurations each having an open center or intersection area.



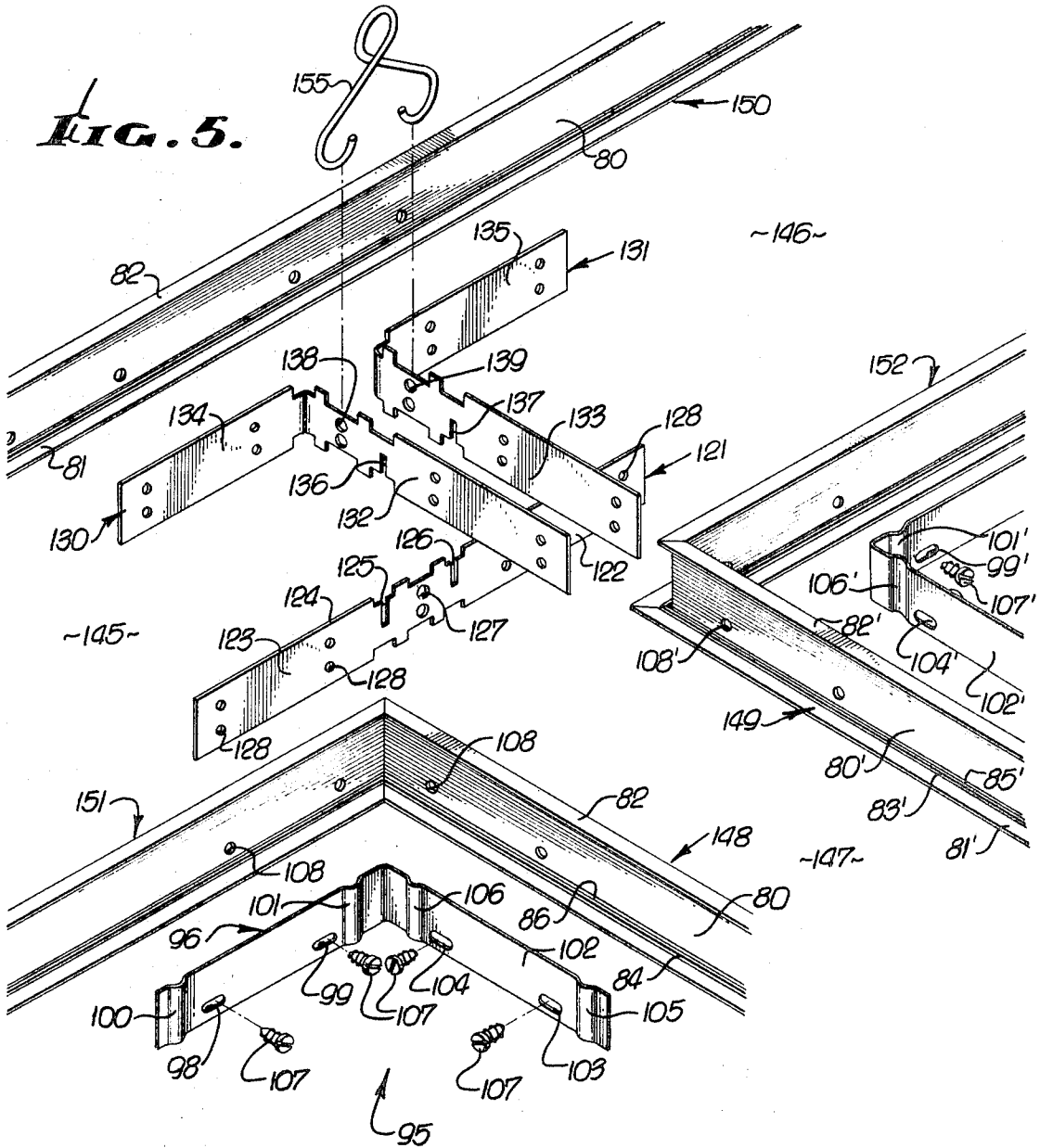


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FIG. 2.



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FIG. 6.

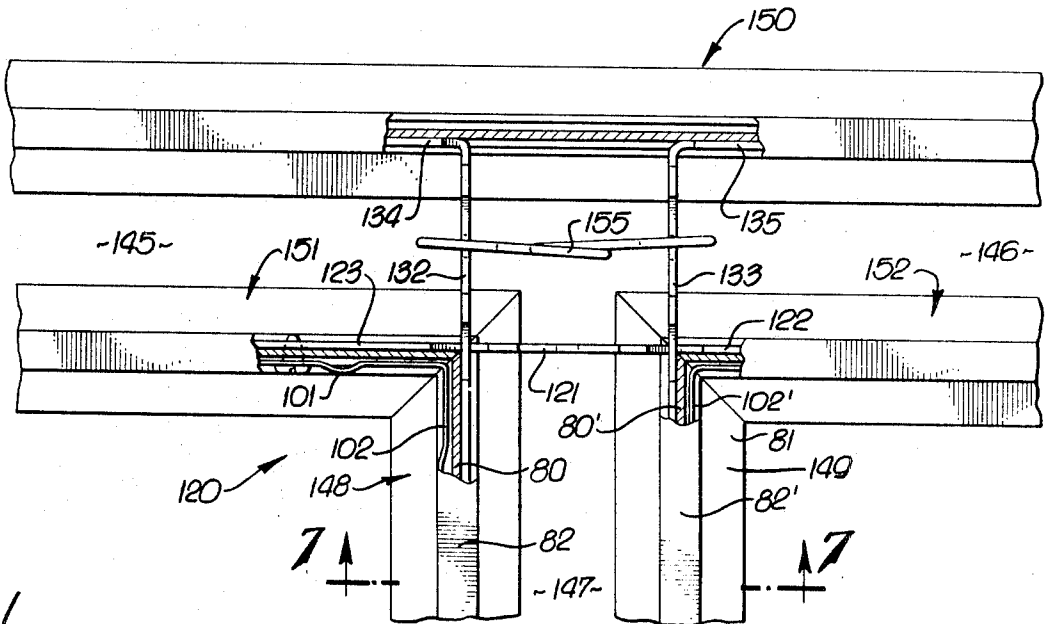


FIG. 7.

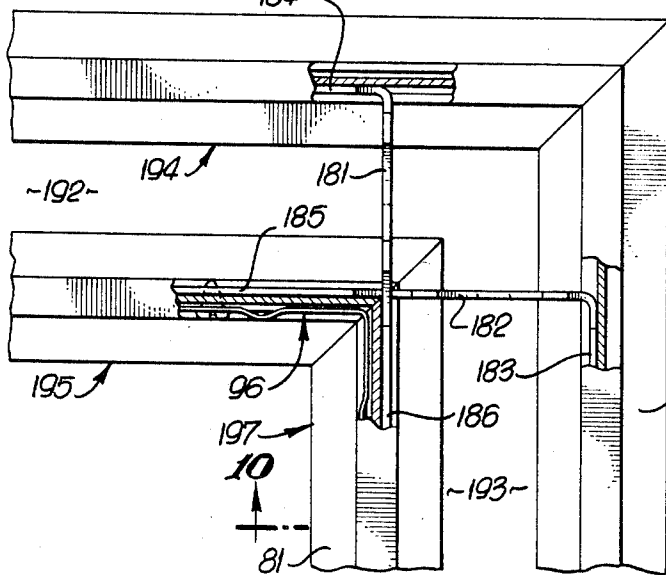
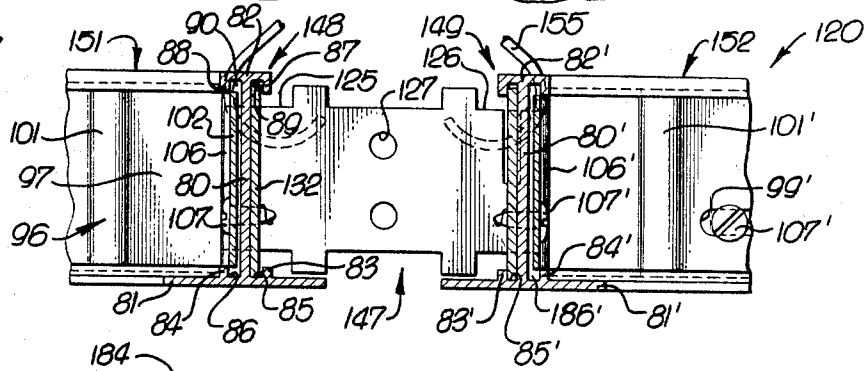


FIG. 9.

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FIG. 8.

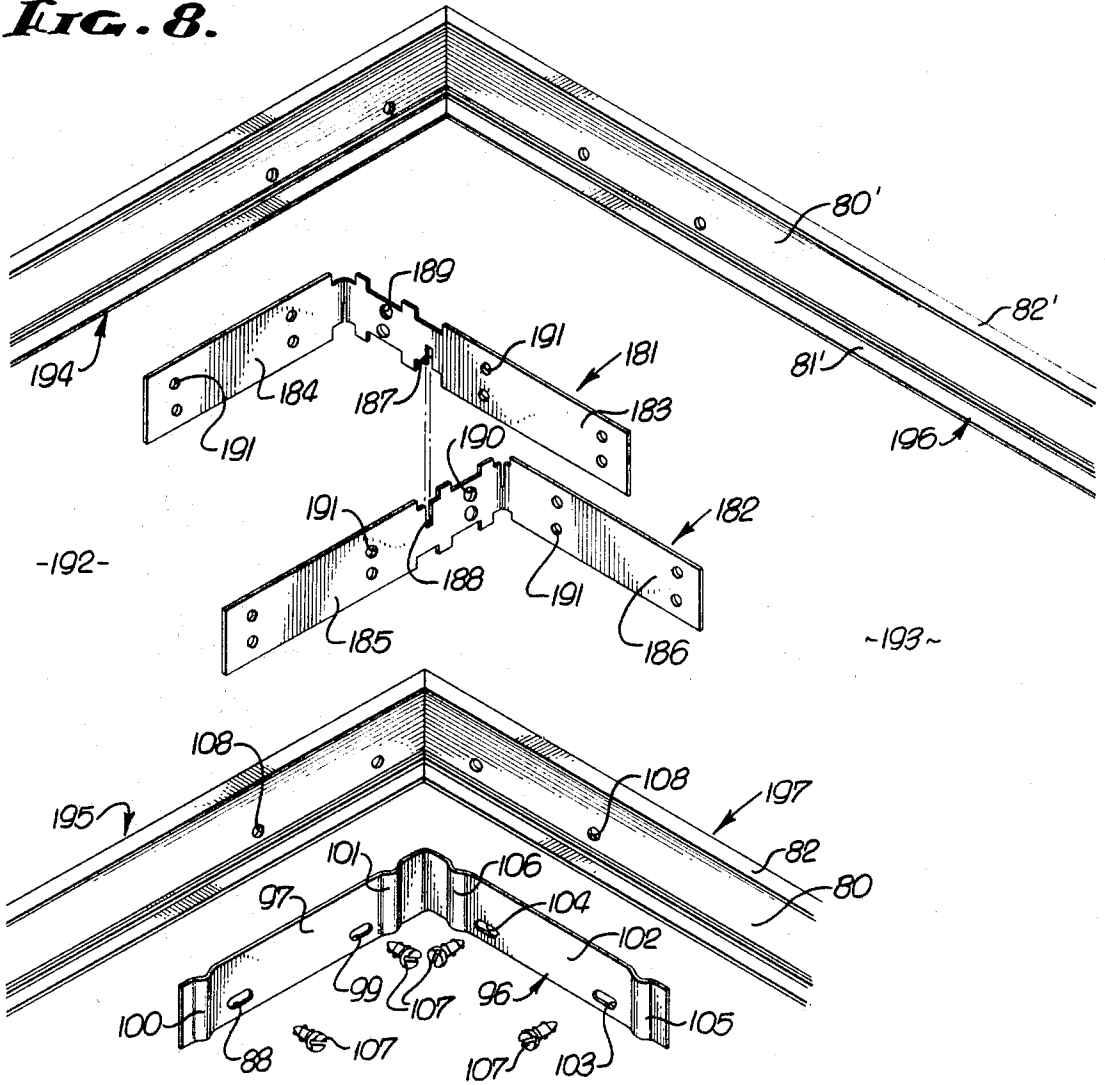
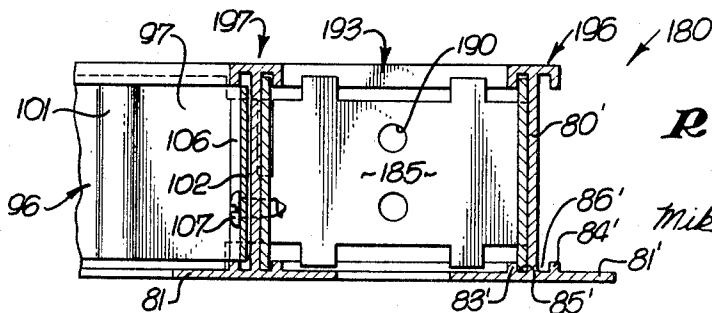


FIG. 10.



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SUSPENDED CEILING SUPPORT AND AIR DISTRIBUTION OUTLET ASSEMBLY

The building construction industry is making increased use of suspended ceiling installations wherein lighting fixtures, ceiling tiles, and air distribution units are all suspended from the underside of the soffit of the room and lie in a ceiling plane. The air distribution units generally include long slotlike air diffuser openings or outlets which are coplanar with the ceiling tiles and where the outlet is defined by suspended and spaced longitudinally extending ceiling elements which form an assembly by which the ceiling tiles, lighting fixtures, and air distribution units are supported. While such ceiling elements form a part of the air distribution system, they are generally installed by workmen who install the ceiling grid work rather than the air-conditioning contractor. It is important for the proper operation of the air distribution system that the ceiling elements defining the distribution or diffuser outlets be properly assembled in a predetermined spaced relation, such spacing generally being selected by the air distribution system contractor.

While various types of prior art support or hanger systems are available, these systems often lack the required flexibility needed by the workmen installing the system and involve innumerable parts and complements which comprise the overall system. It is of course highly desirable to provide a system in which the hanger elements are essentially identical so as to result in economy of manufacture but can be used in various configurations or with changes in the shape, such as bending or the like, to create a variety of configurations for supporting the ceiling elements which define the air distribution system outlets. For aesthetic reasons, the outlets for the air distribution system may be arranged in various patterns so that the ceiling elements forming outlets may intersect in the midportion of the room, at the intersection of one wall and the ceiling, or at the intersection of the ceiling with two intersecting walls, i.e., the corner of the room. One serious disadvantage of the prior art support or hanger systems outlets that each intersection outlets the air distribution outlets, where the hanger or support was connected completely blocked the intersection area of the two outlets precluding any passage of air therethrough and reducing the overall efficiency of the system.

Accordingly, it is one object of the present invention to provide a suspending ceiling support and air distribution outlet assembly in which ceiling elements, defining the air distribution system outlets, may be arranged in various intersecting configurations which maximize the total air distribution system outlet opening area.

It is one object of the present invention to provide a suspended ceiling support assembly including longitudinally extending ceiling elements, pairs of which define an air distribution system slotlike opening, which outlets intersect one another, and hanger members which may be arranged in various configurations to support the outlets without closing the outlets at the intersection thereof.

One more object of the present invention is to provide a suspended ceiling support assembly of the above-described type which uses hanger components for the various types of outlet intersections which are nearly identical stampings so as to decrease the manufacturing costs and increase the ease in assembly of the ceiling support.

A further object of the present invention is to provide a suspended ceiling support and air distribution outlet assembly in which hanger members are used to supportingly engage air distribution outlets formed by inverted T-shaped longitudinally extending ceiling elements in a manner such that the ceiling elements may be easily mounted onto the hanger members.

Still another object of the present invention is to provide a suspended ceiling support and air distribution outlet assembly including a plurality of hanger means for supporting the longitudinally extending ceiling elements which define the air dis-

tribution outlets, at each intersection of such outlets, and which hanger means includes slotted hanger members which may be easily interfitted to form an open area grid of various configurations for supporting the air distribution outlets.

Generally stated, the present invention comprises a suspended ceiling support and air distribution outlet assembly including longitudinally extending air distribution outlets in a ceiling plane, each of the outlets comprising inverted T-shaped longitudinally extending ceiling elements in spaced parallel relation, and the outlets intersecting in either the midportion of the ceiling, the intersection of the ceiling with a wall, or the intersection of the ceiling with two intersecting walls, and including hanger members having at least two pairs of spaced-apart longitudinally extending hanger member portions, each of the hanger members having at least one slot in one of the longitudinal edges thereof, the hanger member portions being engaged by interfitting the slots thereof, and the inverted T-shaped longitudinally extending ceiling elements being supported by each of said hanger member portions so that the air distribution outlet intersections supported by the hanger members include an open area through which air may pass.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same become better understood by reference to the following detailed description when considered in connection with the accompanying drawings.

In the drawings:

FIG. 1 is a perspective view of the ceiling of a building interior in which a suspended ceiling support and air distribution outlet assembly, constructed in accordance with the present invention, has been installed;

FIG. 2 is an exploded perspective view of the air distribution outlet intersection indicated at II in FIG. 1;

FIG. 3 is a top plan view of the intersection illustrated in FIG. 2 in assembled condition, with portions thereof in partial section;

FIG. 4 is a vertical section view taken along the plane 4-4 of FIG. 3;

FIG. 5 is an exploded perspective view of the intersection indicated at V in FIG. 1;

FIG. 6 is a top plan view of the intersection shown in FIG. 5 in assembled condition, with portions thereof shown in partial section;

FIG. 7 is a vertical sectional view taken along the plane 7-7 of FIG. 6;

FIG. 8 is an exploded perspective view of the intersection indicated at VIII of FIG. 1;

FIG. 9 is a top plan view of the intersection shown in FIG. 8 in assembled condition, with portions thereof in partial section; and

FIG. 10 is a vertical section view taken along the plane 10-10 of FIG. 9. Referring now to FIG. 1, there is shown the interior of a building and more specifically the portion of a room defined by first wall 20, a second wall 21, and a ceiling indicated generally at 22. The ceiling 22 is of the suspended type wherein lighting fixtures, ceiling tiles and the air distribution outlet are suspended from the underside of the soffit of the room and lie in a common ceiling plane. In such construction, the present invention comprising a suspended ceiling support and air distribution outlet assembly is employed and is indicated generally in FIG. 1 at 23. The suspended ceiling support and air distribution outlet assembly of the present invention provides an open air intersection of the air distribution outlets when such intersection occurs in the midportion of the room, such intersection being indicated generally at 40, at the intersection of the ceiling 22 with the wall 20, such intersection being indicated generally at 120, and the intersection of the ceiling 22 with the walls 20 and 21, such intersection being indicated generally at 180.

Referring now to FIGS. 2 through 4, there is shown an exemplary embodiment of the intersection 40 in the midportion of the ceiling 22 which generally comprises a first pair in-

licated generally at 41 of parallel spaced apart longitudinally extending planar hanger members 42, 43, a second pair 44 of parallel spaced-apart longitudinally extending planar hanger members 45, 46, four longitudinally extending air distribution outlets indicated generally at 47, 48, 49, and 50, and a plurality of means for stabilizing the intersection, indicated generally at 95.

Each of the hanger members 42, 43 of the first pair 41 are identical and comprise two pairs of spaced-apart longitudinally extending hanger member end portions 51, 52 and 53, 54. Hanger members 42, 43 also include center or intermediate portions 55, 56, respectively; each intermediate portion having a pair of spaced-apart slots 57, 58 and 59, 60, respectively, in the bottom longitudinal edge thereof. The hanger member intermediate portions 55, 56 each include at least one opening 61, 62, respectively, for engagement with a hanger wire 63 as seen best in FIGS. 3 and 4. The hanger member intermediate portions 55, 56 are also provided with notches 64, 65 and 66, 67, respectively, to facilitate the intersection of the outlets as explained in more detail hereinafter. The opposite longitudinal edges of the hanger member intermediate portions 55, 56 are also provided with identical notches for the same purpose.

Each of the hanger member end portions 51, 52, 53, and 54 are provided with a plurality of metal screw openings, indicated generally by reference numeral 68.

The hanger members 45, 46 comprising second pair 44 are identical to hanger members 42, 43 and the portions thereof have been respectively designated with the same reference numerals bearing a prime mark. The only difference between the second pair 44 and first pair 41 of hanger members is the inverted orientation of the second pair so that the slots 57', 58', 59', and 60' extend from the upper longitudinal edges of the members rather than the lower longitudinal edge as on hanger members 42, 43.

The suspended ceiling and air distribution outlet assembly as illustrated in the exemplary embodiment comprising intersection 40 also includes air distribution outlets 47, 48, 49, and 50. Outlet 47 comprises a pair of inverted T-shaped longitudinally extending ceiling elements 70, 71. The parallel air distribution outlet 49 comprises identical ceiling elements 72, 73. The intersecting air distribution outlets 48, 50 each include a pair of inverted T-shaped longitudinally extending ceiling elements, identical to ceiling elements 70 through 73 and indicated at 74, 75 and 76, 77, respectively. Since each of said outlets are identical, it will be necessary to describe only one of such outlets, such as outlet 49 as seen best in FIG. 4. More specifically, outlet 49 includes identical ceiling elements 72, 73 so that only element 72 will be described in detail with the identical portions of ceiling element 73 designated with the same reference numeral bearing a prime mark.

Ceiling element 72 comprises a vertical web 80, a lower horizontal flange 81 extending on both sides of web 80, and an upper horizontal flange 82 extending on both sides of web 80. The lower horizontal flange 81, being of substantially greater width than the upper horizontal flange 82 includes a pair of integral longitudinally extending projections 83, 84 disposed on opposite sides of web 80 so as to define an inner groove 85 and an outer groove 86. The upper horizontal flange is provided with longitudinally extending integral projections 87, 88 on opposite sides of web 80 so as to define an upper inner groove 89 and an upper outer groove 90. As seen in FIG. 4, the lower and upper inner grooves 85, 89, as well as the upper and lower outer grooves 86, 90, are of a thickness equal to the thickness of hanger members 42, 43 and 45, 46. The inner edges of lower horizontal flanges in a pair of such ceiling elements define the air passage and the outwardly extending flanges support the edge of the ceiling tiles.

In the exemplary embodiment of FIGS. 2 through 4, each of the ceiling elements are provided with a 45° mitered end so that two abutting ceiling elements will form a mitered joint. The intersection 40 is assembled by engaging the first and second pairs 41, 44 of hanger members by interfitting slots 59,

60 in hanger member 43 with slots 60', 58' of hanger members 46, 45 and slots 57, 58 of hanger member 42 with slots 59', 57' of hanger members 46, 45. This engagement of the hanger members provides a cruciform-shaped, open-center grid. The hanger wire 63 which is supported at its upper end from the upper ceiling, is attached at its lower end through the openings 61', 62' of hanger members 46, 45 having the slots in the upper longitudinal edge.

As seen in FIG. 4, the height of the web is substantially equal to the height of each of the hanger member end portions 51 through 54 and 51' through 54'. The ceiling elements are supported by slidably positioning the hanger member end portions in the upper and lower inner grooves 85, 89 and 85', 89' of the ceiling element thereby supporting such ceiling element. Each pair of abutting hanger members are slid toward the intersection until the miter joint is formed. It will be noted that the notches 64 through 67 and 64' through 67' in the upper longitudinal edges of the two pairs 41, 44 of hanger members, as well as the identical notches in the lower longitudinal edges of such hanger members allows the ceiling elements to abut without contacting the adjacent portions of the hanger members.

The exemplary embodiment of intersection 40 of the suspended ceiling support and air distribution outlet assembly may also include means 95 for stabilizing or rigidly fixing the ceiling elements with respect to one another and to the two pairs of hanger members. In this exemplary embodiment, such means 95 comprises, as seen best in FIG. 2, four right angle bracket members, several of which are illustrated in FIG. 2 and one of which is designated by reference numeral 96. Since each of the bracket members are identical, only one of such members will be described in detail. Right angle bracket member 96 comprises a first leg 97 having a pair of spaced-apart longitudinally extending slots 98, 99 and a pair of longitudinally spaced-apart vertically disposed crimped portions 100, 101. Right angle bracket member 96 also includes a second leg 102 including spaced-apart longitudinally disposed slots 103, 104 and vertically disposed spaced-apart crimped portions 105, 106. A plurality of metal screws, indicated at 107, are provided for fastening right angle bracket member 96 to the abutting ceiling elements 77, 72 by threading such screws into screw holes, indicated at 108 in the web portions of such ceiling elements. In this manner, the abutting ceiling elements are prevented from slidable movement with respect to the engaged, interfitted hanger members. As seen in FIG. 4, wherein the two right angle brackets are indicated at 97 and 97', the vertically disposed crimped portions prevent the legs of the bracket member from entering the outer grooves on the ceiling elements by supporting such bracket members on the lower and upper horizontal flange projections 83, 84 and 87, 88. It is to be understood that other means for stabilizing the intersection may be used including, by way of example and not limitation, a bracket member having a height equal to the height of the web of the ceiling elements which may be slidably received in the upper and lower outer grooves 90, 86 of such ceiling element.

It is also to be understood from the above description of the specific embodiment of the present invention that the terms "top" and "bottom" are entirely interchangeable and are used only for convenience of description. Moreover, the term "air distribution outlet" is used to refer to means through which air may be drawn into air distribution ducts or discharged from such ducts into the room. Of particular significance to the present invention is the provision of hanger means for the intersection of the air distribution outlets that does not restrict air passage through the center open area defined by the ceiling elements comprising each of the air distribution intersecting outlets. Referring to FIG. 3, such open area is indicated at A. It will also be appreciated that all of the components comprising the exemplary embodiment of the suspended ceiling support and air distribution outlet assembly are identical so as to facilitate assembly of the intersection.

Referring now to FIGS. 5 through 7, there is shown an exemplary embodiment of the air distribution outlet intersection 120 at the intersection of the ceiling 22 with the wall 20. Such generally T-shaped intersection comprises a first longitudinally extending planar hanger member 121 including a first longitudinally extending hanger member portion 122, a second longitudinally extending hanger member portion 123, and a longitudinal edge 124 having a pair of longitudinally spaced-apart transversely extending slots 125, 126 extending downwardly from upper longitudinal edge 124. The planar hanger member 121 includes at least one centrally disposed opening 127 and a plurality of screw-receiving openings 128 in each of the first and second hanger member portions 122, 123.

The hanger assembly also includes a pair of hanger members 130, 131 including a pair of spaced-apart parallel longitudinally extending portions 132, 133, respectively, and second portions 134, 135 extending at right angles to parallel portions 132, 133. Parallel hanger member portions 132, 133 each include at least one slot 136, 137, respectively, extending upwardly from the lower longitudinal edge and a hanger wire receiving opening 138, 139 disposed adjacent the second right angle extending portions 134, 135.

The suspended ceiling and air distribution outlet intersection 120 also includes air distribution outlets indicated generally at 145, 146, and 147. Air distribution outlet 147 comprises a pair of inverted T-shaped longitudinally extending ceiling elements 148, 149. The intersecting air distribution outlets 145, 146 comprise a first T-shaped longitudinally extending ceiling element 150, and a pair of parallel spaced-apart inverted T-shaped ceiling elements 151, 152. Each of the inverted T-shaped ceiling elements 148 through 152 have an identical cross-sectional configuration which is identical to the configuration of the ceiling elements 70 through 77 of the first air distribution outlet intersection 40 previously described. Consequently, these ceiling elements bear the same reference numerals as in the previously described embodiment.

The air distribution outlet intersection also includes means for stabilizing or rigidly fixing the ceiling elements with respect to one another and to the hanger assembly. In the exemplary embodiment, such stabilizing means comprises a pair of right angle bracket members which are identical in all respects and are also identical to bracket member 96 in the first exemplary embodiment of air distribution outlet intersection 40. Accordingly, the bracket members of the present embodiment are provided with identical reference numerals.

The intersection 120 is assembled by engaging the bent or right angle hanger members 130, 131 with hanger member 121 by interfitting the slots 136, 137 into the slots 125, 126. This engagement of the hanger members provides a T-shaped open-center grid. A hanger wire 155 may be engaged in the central openings 138, 139 in the parallel spaced-apart portions 132, 133 of hanger members 130, 131 and supported at its upper end from the upper ceiling so as to support the hanger assembly. The ceiling elements 151, 152 and the elements 148, 149 are provided with 45° mitered ends so that the abutting ceiling elements 148, 151 and 149, 152 may be engaged so as to form mitered joints.

Attention is directed to one of the significant features of the present invention, namely, that the hanger members 130, 131 are identical to hanger member 121 except for the bending of the former members to create the right angle portions. Moreover, it will also be seen that each of the hanger members used in the air distribution outlet intersection 120 are identical to the hanger members employed in the air distribution outlet intersection 40, previously described. Such elements are identical metal stampings which can be used in their planar form, or easily bent so as to create hanger elements such as members 130, 131. Furthermore, the T-shaped ceiling elements forming the air distribution outlets are all identical and it will thus be seen that the components required to construct either of the above-described intersections are in all respects

identical and require only minor on-the-job modification to adapt the components to form different air distribution outlet intersections with an open-center air passage.

Referring now to FIGS. 8 through 9, there is shown an exemplary embodiment of the air distribution outlet intersection 180 in the corner of the room formed by the walls 20, 21 and the ceiling 22. The intersection comprises hanger means including first and second hanger members 181, 182, respectively. Hanger member 181 includes a longitudinally extending portion 183 and a right angle portion 184; hanger member 182 includes a longitudinally extending portion 185, and a right angle portion 186. Longitudinally extending portion 183 includes at least one slot 187 extending upwardly from the lower longitudinal edge and spaced apart from the right angle portion 184. The longitudinally extending portion 185 of hanger member 182 also includes a slot 188 extending downwardly from the upper longitudinal edge and at a longitudinally spaced apart location from the right angle portion 186. Hanger members 181, 182 have hanger wire receiving openings 189, 190, respectively, in the longitudinally extending portions 183, 185 thereof for receiving a hanger wire to support the hanger assembly. The longitudinal and the right angle portions of the hanger members 181, 182 includes a plurality of screw-receiving holes 191.

The suspended ceiling and air distribution outlet assembly intersection 180 also comprises a pair of intersecting air distribution outlets 192, 193. Air distribution outlet 192 includes a pair of inverted T-shaped longitudinally extending ceiling elements 194, 195; air distribution outlet 193 includes longitudinally extending ceiling elements having an inverted T-shape 196, 197. As indicated with respect to the previous embodiments, the inverted T-shaped longitudinally extending ceiling elements have identical cross-sectional configurations which are identical to the elements described in connection with the air distribution outlet intersections 40 and 120. Accordingly, the portions of such elements are indicated by the same reference numerals.

The exemplary embodiment of intersection 180 of the suspended ceiling support and air distribution outlet assembly may also include stabilizing means including a single right angle bracket member identical in all respects to the bracket members previously described and indicated by reference numeral 96 with the portions thereof bearing identical reference numerals previously used in connection with the description of bracket 96.

The intersection 180 is assembled by engaging the first and second hanger members 181, 182 by interfitting the slots 187, 188 so as to define two pairs of spaced-apart longitudinally extending hanger member portions 184, 185 and 183, 186. Such spaced-apart pair of longitudinally extending hanger member portions define an open-center right angle grid. A hanger member may be provided engaging the center openings 189, 190 for supporting the hanger means form the upper ceiling. As in the previous embodiments, the T-shaped ceiling elements 194 through 197 may be slidably positioned on the spaced apart parallel hanger member portions 183 through 186 so as to support such T-shaped ceiling elements in spaced-apart relation defining air distribution outlets. The ends of the T-shaped elements are provided with a 45° mitered end so that abutting ceiling elements will form mitered joints.

Again, it is emphasized that all of the components used in the fabrication of the above-described air distribution outlet intersection 180 are identical in all respects to those components used to assemble air distribution outlet intersections 40 and 120. It will be noted that hanger members 181, 182 are bent as are the hanger members 130, 131 of intersection 120 but are repositioned so as to form a right angle open-center intersection rather than the T-shaped intersection of the wall-ceiling intersection. It is further pointed out that intersection 180 also provides an intersection for air distribution outlets which has an open-center area allowing air passage therethrough.

It will now be seen that all of the above-stated objects of the present invention are met by the specific embodiments above described and that other modifications and variations of the present invention are possible in light of the above broad teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described and illustrated.

I claim:

1. A suspended ceiling support and air distribution outlet assembly, comprising:

a plurality of inverted T-shaped longitudinally extending ceiling elements having a vertical web and at least a bottom flange;

hanger means for mounting said ceiling elements including a plurality of hanger members, each of which includes an intermediate and two end portions and one or more open ended slots in one edge of said intermediate portion;

said hanger members being interfitted together by assembling at least one of said members with the associated one or more slots facing upwardly to at least one other of said members with its associated one or more slots facing downwardly to form an intersecting assembly of said members; and

means associated with said plurality of ceiling elements for receiving and holding the end portions of each of said members generally parallel and adjacent to a web of an associated ceiling element to mount said ceiling elements in a spaced nonintersecting assembly forming open convergent air distribution outlets therebetween.

2. The suspended ceiling support and air distribution outlet assembly of claim 1 wherein said hanger means comprise a first pair of parallel hanger members, each of said hanger members having a pair of spaced apart slots in the bottom longitudinal edge of the intermediate portion thereof, and a second pair of parallel hanger members, each of said second hanger members having a pair of spaced-apart slots in the top longitudinal edge of the intermediate portion thereof, said first pair and second pair of hanger members being engaged by interfitting the slots thereof so as to define a double intersecting grid, whereby said hanger members support associated inverted T-shaped longitudinally extending ceiling elements in an open cruciform-shaped air distribution outlet.

3. The suspended ceiling support and air distribution outlet assembly of claim 1 wherein said hanger means comprises a single longitudinally extending planar hanger member having a pair of spaced-apart slots in one of the longitudinal edges of the intermediate portion thereof, and wherein said hanger means additionally comprises a pair of hanger members each having end portions extending at right angles to the intermediate portions thereof, said end portions extending away from one another, said pair of hanger members being engaged by interfitting the slots thereof with the pair of spaced-apart slots in said single planar hanger member so as to define three pairs of spaced-apart longitudinally extending hanger member end portions, whereby said inverted T-shaped longitudinally extending ceiling elements supported by each of said hanger member end portions define an open intersection of the three air distribution outlets defined by said pairs of ceiling elements.

4. The suspended ceiling support and air distribution outlet assembly of claim 1 wherein said hanger means comprises first and second hanger members, each of said hanger members including a longitudinally extending intermediate portion and an end portion at right angles thereto, said first and second hanger members being engaged by interfitting the slots thereof so as to define two pairs of spaced-apart longitudinally extending hanger member end portions defining an open-center right angle grid, whereby said inverted T-shaped longitudinally extending ceiling elements supported by each of said hanger member end portions define an open intersection of two air distribution outlets, each defined by a pair of ceiling elements.

5. The suspended ceiling support and air distribution outlet assembly of claim 1 additionally including means for stabilizing the intersection of said air distribution outlets.

6. A suspended ceiling support and air distribution outlet assembly comprising:

a first pair of parallel spaced-apart longitudinally extending planar hanger members, each of said members having a pair of spaced-apart slots extending from one longitudinal edge,

a second pair of parallel spaced-apart longitudinally extending planar hanger members, each of said members having a pair of spaced-apart slots extending from one longitudinal edge,

said first and second pairs of hangers being engaged by interfitting the slotted portions so as to define an open double intersecting grid, and

four pairs of inverted T-shaped longitudinally extending ceiling elements including means for engaging the edges of the hangers so as to be supported thereby, each pair of said ceiling elements defining a longitudinal air distribution outlet, the intersection of said outlets being open and of a cruciform-shape.

7. The suspended ceiling support assembly of claim 6 additionally including a plurality of right angle brackets, said inverted T-shaped ceiling elements including means for engaging the edges of said brackets so as to stabilize the intersection of said outlets.

8. The suspended ceiling support assembly of claim 1 wherein each of said T-shaped ceiling elements includes an upper horizontal flange and longitudinally extending projections on both of said upper and bottom flanges so as to define a pair of opposed grooves,

and each of said hanger members has a height substantially equal to the height of a ceiling element web and is slidably received in between a pair of said opposed grooves of an associated ceiling element so as to support said associated ceiling element.

9. A suspended ceiling support and air distribution outlet assembly, comprising:

a longitudinally extending planar hanger member having a pair of spaced-apart slots extending from one longitudinal edge thereof,

a pair of hanger members including parallel spaced-apart longitudinally extending portions, each of said parallel portions having a second portion extending at right angles thereto, said second portions extending away from one another, each of said first portions having a slot extending from one longitudinal edge thereof, said slots being longitudinally spaced from the right angle portions,

said pair of hanger members being engaged by interfitting the slots thereof with the pair of spaced-apart slots in said planar hanger member so as to define an open T-shaped grid, and

inverted T-shaped longitudinally extending ceiling elements including means for slidably engaging the edges of the hangers so as to be supported thereby, each pair of said ceiling elements defining a longitudinal air distribution outlet, and the intersection of said outlets being open.

10. A suspended ceiling support and air distribution outlet assembly comprising:

a first hanger member including a longitudinally extending portion and a right angle portion, the longitudinally extending portion having a slot extending from the longitudinal bottom edge thereof at a spaced-apart location from said right angle portion,

a second hanger portion, including a longitudinally extending portion and a right angle portion the longitudinally extending portion having a slot extending from the upper longitudinal edge thereof, said slot being space apart from said right angle portion,

said first and second hanger members being engaged by interfitting the slots so as to define an open right angle grid; and

inverted T-shaped longitudinally extending ceiling elements including means for slidably engaging the edges of the hangers so as to be supported thereby, each pair of said ceiling elements defining a longitudinal air distribution outlet, and the intersection of said outlets being open.