CONCEALED GRID SUSPENDED CEILING STRUCTURE WITH SIMPLIFIED INSTALLATION

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ABSTRACT
A suspended ceiling structure for supporting ceiling panels, utilizing a system of main and cross runners in which the main runners are constructed for suspension from supporting means therefore, and the cross runners are each constructed to extend between and be supported at respective ends from the main runners, the cross runners being movable along the main runners and having panel supporting elements arranged to position the plane of ceiling panels supported thereby completely below said main runners whereby disposition of a ceiling tile is independent of the locations of main runners.

18 Claims, 11 Drawing Figures
CONCEALED GRID SUSPENDED CEILING STRUCTURE WITH SIMPLIFIED INSTALLATION

BACKGROUND OF THE INVENTION

Suspended ceiling structures utilizing a supporting grid of main runners and cross runners, from which kerfed or rabbitted ceiling tile are supported with the suspension members being concealed thereby i.e. so-called "concealed mechanical systems" may be broken down into several generally basic types. One is the so-called H and T system and utilizes a so-called "H" runner which is usually supported from suitable main runners, which, for example, may be of either "H" or "C" cross section and suitably supported as for example by hanger wires with the cross runners being supported in accurately spaced relation by interlocking the main runners through the use of suitable wire clips or the like. Junctions between adjacent ceiling tile, not supported thereat from a cross runner may have a cross tee or a pair of angles disposed at such juncture adapted to provide reinforcement therealong.

Another system, generally known as a "concealed grid" system employs main and cross runners arranged in a grid configuration with the cross runners being secured at spaced intervals to the main runner by means of wire clips or the like enabling adjustment of the cross runners along the main runners and may provide for access by utilization of special cross runners which enable removal of selected tile panels for providing access above the ceiling structure. Spacing between cross runners may be effected by suitable interlocking T or space bars extending between adjacent runners.

In all of these grid supported ceiling structures the main runner is constructed to directly support the ceiling tile whereby the main runners in such systems automatically define the tile lines or junctures and it is therefore essential that the main runners be accurately disposed in conformity with the planned tile layout. Consequently, such types of ceiling systems are substantially invariably installed by experienced professional installers, as distinguished from amateurs.

SUMMARY OF THE INVENTION

The present invention is directed to a suspended ceiling structure of the "concealed grid" type in which considerably greater flexibility in installation is achieved, i.e. embodies the advantages of the "concealed grid" system without the limitations thereof, making the structure particularly advantageous for amateur installations.

In the present invention, the main runners merely support a plurality of cross runners and the latter in turn support the ceiling tiles or panels. The cross runners are freely adjustable along the main runners and support the ceiling tiles or panels completely below the main runners, whereby extreme flexibility is provided in the disposition of the respective ceiling tiles or panels with respect to the main runners.

The installer thus may mount the main runners along parallel lines, suitably spaced to receive and support the cross runners with the main runners merely extending in the desired directions without regard to lateral positioning relative to the junction of tile panels.

In accordance with a further feature of the invention, novel hangers may be mounted to receive the main runners, with the latter being longitudinally adjustable relative to the hangers whereby critical positioning of the hangers is also eliminated, the installer merely insuring that the hangers extend in a reasonably straight line to receive the main runner structure.

The installer thus may readily set a horizontal line along which a main runner is to extend and mount the larger structures at spaced points, for example, four feet apart, on such line, aligning the runner receiving means both longitudinally along such line as well as vertically aligning the same along such lines. Additional lines extending parallel to the first lines may then be set up and like hangers installed, spacing such lines the required distance for the particular cross runners employed. The main runners may then operatively engage with their associated hangers, the cross runners disposed transversely therebetween, and the ceiling panels installed, adjusting the cross runners accordingly to provide the desired configuration to the finished ceiling, for example to insure a uniform or balanced margin around the perimeter of the ceiling area, etc.

The main runners and cross runners may assume various configurations in accordance with the present invention, and the construction readily adapts itself to cross runner designs which will permit access above the ceiling structure, for example, utilizing separable cross runners.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings wherein like reference characters indicate like or corresponding parts,

FIG. 1 is a top plan view of a ceiling structure constructed in accordance with the present invention, looking down upon the same;

FIG. 2 is a transverse sectional view, taken approximately on the line II—II of FIG. 1, illustrating a transverse sectional view of a main hanger, its connection to a supporting hanger, and the engagement of a pair of cross runners with the main runner;

FIG. 3 is a transverse sectional view, taken approximately on the line III—III of FIG. 1 through a cross runner and also illustrating how the supporting hanger may be bent to facilitate installation;

FIGS. 4a-c illustrates respective cross sections through ceiling tiles taken approximately on the lines A—A or B—B of FIG. 1;

FIGS. 5a and 5b illustrate two types of separable cross members which may be utilized in the present invention to provide access above the ceiling structure;

FIG. 6 is an isometric figure of a portion of a main runner and cross runner illustrating a modified construction of both;

FIG. 7 illustrates a further modification of the main runner, cross runner and hanger structures; and

FIG. 8 illustrates a further modification of the present invention, also illustrating the use of separate spacing members for the main runners.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings and more particularly to FIGS. 1–3, as illustrated in FIG. 1 the grid system comprises a plurality of spaced parallel main runners, indicated generally by the numeral 1, adapted to be supported from above by suitable means, comprising in the embodiment illustrated a plurality of spaced hangers 2 which, for example, may be suitably attached to avail-
able joists, or other suitable beams or supporting structure. Extending between each pair of main runners are a plurality of cross runners indicated generally by the numeral 3, which are adapted to be slidably supported at their respective ends from the adjacent main runners whereby the cross runners can be moved, as desired, longitudinally along the main runners.

The cross runners 3 are so proportioned that the tile supporting means thereon is disposed a sufficient distance below the plane of the lower edges of the main runner to support the respective ceiling tiles completely below the main runners, whereby they may be positioned without regard to the location of a main runner, the tiles extending across and below the main runner as hereinafter described in detail.

Likewise, as subsequently discussed in detail, the ceiling panels, or tiles illustrated as being of square configuration, are thus solely supported by the cross runners and may have suitable kerfs or overlying edge portions which engage and rest upon permissible portions of the cross runners. In the embodiment illustrated, each cross runner supports the adjacent edges of four such tile panels, with the adjoining edges of adjacent panels being constructed with a lap or tongue-and-groove joint, or merely with abutting edges.

Referring to FIGS. 2 and 3, the main runner 1 illustrated in transverse section in FIG. 2, is formed from a single sheet of strip metal, suitably roller or bent to the configuration illustrated, forming a pair of oppositely disposed cross runner supporting flanges 4 extending in alignment in opposite directions from the lower edge of a web portion 5 with the extreme outer edges of the flange portions 4 terminating in respective upwardly extending flange or edge portions 6, the portions 4, 5, and 6 all being fabricated with a double thickness of material.

Referring to FIG. 2 it will be noted that the runner 1 is provided with upper portions 7, illustrated as extending generally parallel to the web portion 5, each portion 7 being offset outwardly with respect to the associated portion 5 and connected thereto at its lower edge by a laterally extending portion 8, in effect forming a more or less box or channel section with the upper edges of the wall portions 7 having inwardly directed edge portions 9 which, in the embodiment illustrated, are inclined downwardly from their connection with the wall portions 7.

The hanger 2 is provided at its lower edge with a downwardly depending projection 10 terminating in a generally triangularly shaped head portion 11 connected to the lower portion of the hanger by a narrow neck portion 12, and thus of generally arrow head configuration.

Thus, the hanger 2 may be disposed in a plane extending at right angles to the longitudinal axis of the runner and by relative movement between the runner and the hanger, the head 11 may be inserted into the channel formed by the walls 7 and walls 8 to the position illustrated in FIG. 2. The walls 7 and edge portions 9 have adequate inherent resiliency to permit a springing thereof sufficient to enable entry of the head 11, following which the upper portion of the runner may resume the positions illustrated in FIG. 2 with the edge portions 9 interlocking with the adjacent outwardly extending edges of the head thus preventing separation of the runner from the hanger.

The hanger 2 illustrated in FIGS. 2 and 3 comprises a mounting plate 13, from the lower edge of which the projection 10 extends, the plate 13 preferably being provided therein with a plurality of nailing holes 14 and a plurality of horizontally extending slots 15. Depending upon the installation, the plate 2 may, for example, be laid flat along a vertical face of a floor ceiling joist 16 and nailed in position, with one or more nails passing through respective openings 14 into the joist. In some cases it may be desirable to mount the hanger 2 along the bottom of a joist or other flat surface, in which case the hanger may be readily bent along any one of the slots 15, for example as illustrated in FIG. 3 with the hanger then being mounted by nails passing upwardly through the holes 14 into the bottom face of the joist 16 (indicated in dotted lines) or other member. By selection of the proper slot 15 the main runner may be disposed at any desired distance below the joist 16 within the range provided by the hanger. If a greater drop is necessary, other mounting means may be utilized, for example, the usual type of wire tie.

The cooperative cross runners 3, in the embodiment illustrated may be of simple T configuration, formed from a single strip of material folded along its longitudinal median line to form a web portion 17 of double thickness, terminating at its lower edges in a pair of outwardly extending aligned flanges 18. As clearly illustrated in FIG. 2, the free ends of the respective cross runners each may have a longitudinally extending projection, indicated generally by the numeral 19, adjacent the upper edge of the cross runner which is provided with an upwardly extending notch 20 in the bottom edge thereof of a size to receive the adjacent upstanding flange or edge member 6 of the main runner, with the bottom edge of the projection 19 seated on the associated flange 4 of the main runner and supported therefrom. The projections of the projection 19 preferably are such that the top edge of the cross runner extends below and approximately up to adjacent the laterally extending wall 8 of the main runner whereby the projection 19 is, in effect, interlocked with respect to vertical movement, and at the same time lateral separating movement of the cross runner or the main runner is prevented by the upstanding edge member 6 and adjacent interlocking portion of the projection 19.

FIGS. 2 and 3 illustrated in dotted lines the positioning of ceiling panels or tiles 22, of generally standard construction, in which all edges of the panel are similarly constructed with a configuration corresponding to the section A—A illustrated in FIG. 4a. With the use of such panels, the flanges 18 of the cross runner are received in the edge kerfs or slots 23 of opposite edges of the panel, with the other edges of adjacent panels merely abutting as illustrated in FIG. 2. It will be apparent that such abutting edges may be disposed anywhere along the cross runners without regard to the main runners as the panels extend completely below and across the main runners without interference therefrom.

In the installation of a ceiling such as illustrated in FIG. 1, the following sequence of operations may be utilized:

After determining the height at which the exposed face of the ceiling is to be positioned, the installer may extend a line from one wall to the other in the direction in which the main runners are to be disposed, such line being at a height corresponding with the position of the
apex of the triangular head 11 when the hanger 2 is positioned at the height necessary to provide a positioning of the ceiling panels at the desired height. With such a line extended, the installer may then suitably mount the hangers 2 at intervals, for example, of four feet, properly centering the hangers on the line and at the height indicated, thereby automatically aligning the hangers both vertically and horizontally. After completing a series of hangers in this manner additional series of hangers may be similarly disposed at suitable spacing, corresponding to the effective length of the cross runners 3, until all necessary rows of hangers have been mounted.

The installer then may readily take lengths of main runner 1 and by an upward movement interlock each main runner with a series of aligned hangers. If more than one length of aligned main runners are required, hangers 2 may be closely disposed adjacent the meeting ends of the aligned main runners to provide adequate support thereat. After the main runners have been mounted, the cross runners 3 may be readily disposed in more or less operative positions, the cross runners 3 illustrated in FIG. 2 readily being interlocked with the main runners by rotating the plane of the web portion 17 of the cross runner into a more or less horizontal position at which time the cross runner may be readily swung into a position substantially normal to the axis of the main runners, following which the cross runner is rotated into its final position, as illustrated in FIG. 2, with the web portion 17 vertical. Usually, a trim angle will be mounted on the respective walls defining the area with the horizontal portion of the angle being suitably disposed to receive the adjacent edges of perimeter panels and support the same.

The ceiling panels or tiles are then installed and assuming that the area covered thereby does not have a width and length which are even multiples of the tile panels, the installer would determine the width of the perimeter panels to provide a uniform appearance at respective opposite ends of the enclosure. Following cutting such perimeter panels to the correct proportions, the respective panels may be readily assembled with the cross runners as illustrated in FIG. 3, the installer merely sliding the respective cross runners along the main runners to the desired positions. Thus, the respective positions of the ceiling panels are totally independent of the locations of the main runners and it is therefore unnecessary for the main runners to be specifically located at relatively rigidly fixed points as with prior systems. The only requirement is that the installer mount the hangers and main runners with reasonable accuracy to insure proper spacing therebetween and thus proper engagement of the cross runners with each adjacent pair of adjacent main runners.

As illustrated in FIG. 4, standard tiles having like slots or kerfs in all four edges, corresponding to those illustrated in FIG. 4a, and as illustrated in FIGS. 2 and 3, may be utilized. However, abutting edges of adjacent tiles, as illustrated in FIG. 2, i.e., as viewed on the section line B—B of FIG. 1, may be provided with a lap joint or with a tongue in groove joint, FIG. 4b illustrating the configuration of a tile panel along the line B—B of FIG. 1 to provide a lap joint, and FIG. 4c the corresponding configuration to provide a tongue and groove joint.

To provide ready access above the ceiling structure, if desired, selected cross runners may be fabricated as illustrated in FIG. 5a or FIG. 5b. In the construction of FIG. 5a the cross runner 3a is fabricated in two parts 24a and 24b; the part 24a having web portion 17a terminating at its lower edge in an outwardly extending flange 18 and terminating its upper edge in a downwardly directed flange 25a. The other member is provided with a web portion 17b likewise terminating at its lower edge in an outwardly extending flange 18 and at its upper edge in an angularly extending flange 25b which overlies the flange 25a whereby the member 24b may be supported from the member 24a. In this construction the member 24a would be provided with projections 19 to enable support of the member from a pair of spaced main runners in the same manner as illustrated in FIG. 2 for the runners 3, while the member 24b would have no such projections and thus would be supported entirely from the member 24a independent of the main runners. Thus, by utilizing two sets of cross runners such as illustrated in FIG. 5a at opposite sides of a ceiling panel or panels with such panels supported by a pair of members 24b, such panel or panels could be moved upwardly to provide access above the ceiling structure.

The cross runner 3b illustrated in FIG. 5b likewise comprises a pair of cooperating members 24c and 24d each of which are of generally angular shape in transverse cross section, the member 24c having an upstanding web or wall 17c terminating at its lower edge in a flange 18 while the member 24d is provided with an upstanding wall or web 17c terminating at its lower edge in a flange 18. The wall 17c terminates at its upper edge in a laterally extending wall 26, from the free edge of which extends a downwardly depending wall 17c having an inwardly directed continuous rib or bead 27. The upper edge of the wall 17d may be provided with a continuously extending groove 27' adapted to be engaged with the rib 27 by upward movement of the member 24d relative to the member 24c to permit entry of the wall 17d between the walls 17c and 17e to enable snap-in interlocking of the bead 27 with the groove 27' and thereby retain the structure in assembled relation. Thus, by supporting a panel or panels at a single edge by a single member 24d or at opposite edges by a pair of members 24d the panel or panels so supported may be readily removed from the ceiling by application of downward pressure upon such panels at the adjacent member 24d, for example with the aid of suitable tools or the like by means of which downward pressure may be applied to the panel. It will thus be apparent that by use of cross members such as illustrated in FIG. 5a access may be provided by upward movement of a panel with respect to the ceiling structure, and with the use of cross members such as illustrated in FIG. 5b a panel may be removed by downward movement thereof.

FIG. 6 illustrates a modification of the construction illustrated in FIGS. 1 and 2. In this arrangement the general construction corresponds to that previously described with the exception of interlocking the cross runners to the main runner. Referring to FIG. 6, it will be noted that the upwardly directed peripheral flange or edge member 6 on each flange 4 of the main runner is provided with one or more notches 28 therein and the upstanding wall or web 17 and flanges 18 of the cross runner are extended whereby the end edges thereof are coextensive with the end edges of the projection 19. This arrangement may be readily formed by cutting an L-shaped opening in the
end of the runner to form the notch 20 which is operatively connected to the adjacent end edge of the runner by a horizontally extending slot 29.

In assembling the cross runner of FIG. 6 with the main runner illustrated therein the notch 29 is disposed in alignment with the notch 28 and the cross runner 3 is moved towards the main runner 2 whereby the flange 31 is engaged in slot 29, permitting the notch 20 to be aligned with the adjacent edge member 6, following which the cross runner may be moved longitudinally along the main runner to expose the edge member 6 in the notch 20 whereby the members will assume substantially the positions illustrated in FIG. 2. As the cross runner is vertically locked in position by the flange 4 and slot 29 an interlock between cross runner and the upper portion of the main runner, for example the walls 8 thereof is unnecessary and this construction thus is particularly adaptable for use with main runners which do not have an enlarged head portion at the upper edge of the web. It will also be appreciated that either of the cross runner members 24a or 24c may be similarly constructed.

FIG. 7 illustrates a further modification of hanger, main and cross runner construction. In this arrangement the hanger 2 is constructed similarly to the hanger 2, illustrated in FIG. 2, being constructed from flat sheet stock and provided with nail holes 14 and transverse slots 15. The lower portion of the hanger 2, however, is provided with a generally T-shaped slot 30 having a generally horizontally extending portion 31 and a vertically extending portion 32 which opens on the lower edge of the hanger plate. In this construction the main runner 1 is of generally inverted T-shaped configuration, having an intermediate wall or web 5 terminating at its lower edge in transversely extending aligned flanges 4 and at its upper edge in oppositely disposed angularly extending longitudinal flanges 9. The flanges 9 are adapted to be sprung or deformed in directions toward one another to enable their insertion in the slot 32 and upon upward movement may be disposed in the slot 31 with the flanges 9 springing to their original positions and interlocking with the angularly disposed edges 33 forming the lower edge portions of the notch 31. In this construction the cross runner 3 is illustrated as having a projection 19 extending from the end edge thereof, the lower horizontal edge 34 of which is adapted to rest upon the upper face of the adjacent flange 4, while the upper edge of the projection 19 is provided with an angularly extending edge 35 extending generally parallel to the adjacent flange 9. The proportions of the projection 19 thus may be such that the edge 35 may be interlocked underneath the flange 9 of the cross runner 19 to restrict both vertical and longitudinal separating movement of the runner 3 relative to the main runner. Installation of the construction illustrated in FIG. 7 will follow the assembly of the construction illustrated in FIGS. 2 and 3.

FIG. 8 illustrates the utilization of a main runner of inverted T-shaped which may be of standard construction, the runner 1 having a web portion 17 of single thickness from the lower edge of which extend oppositely disposed flanges 4, the main runner being suspended by any suitable means, as for example wire ties 36 extending through openings in the intermediate wall or web 17. This modification also illustrates the use of individual spacer bars or strips 37 which may be provided with notches 38 for receiving the upper edge or head of the main runner and thus fixing the spacing between adjacent main runners. In this arrangement, the cross runner 3 is constructed similarly to that illustrated in FIG. 6 with the exception that the vertically extending notch 20 is omitted, the end of the runner being provided only with a horizontally extending notch 29 of a size to receive the adjacent flange 4. If desired, the lower portion of the free end of the runner could be cut away to a line spaced longitudinally inwardly the length of the slot 29 whereby the lower portion of the cross runner would generally conform to that of the cross runner illustrated in FIG. 7.

It will be appreciated from the above description that in all of the constructions illustrated, the cross runners are constructed to provide the support for the respective ceiling panels with the latter being disposed completely below the main runner and positioned independently thereof and with the cross runners being freely movable along the main runners to enable disposition of the ceiling panels in any desired relationship with respect to the ceiling area involved.

Consequently, the construction is ideal for non-professional installation, i.e. do-it-yourself projects and the like by relatively inexperienced persons with a complete elimination of accurate disposition of the runner structures with respect to the junctions of adjoining ceiling panels.

Likewise, the utilization of the novel hanger structures and interlocking main runner structures enable the mounting of the runners with a minimum of very simple operations, requiring only reasonable alignment of the hangers and spacing between adjacent rows of hangers.

Having thus described my invention it will be obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention.

I claim as my invention:

1. In a suspended ceiling system for supporting ceiling panels from a concealed grid structure, in which edge portions of the ceiling panels are provided with kerfs adapted to receive and conceal the adjacent portions of the grid structure, the combination of a plurality of main and cross runners, of generally inverted T-shape in transverse cross-section, with an elongated vertically extending intermediate portion terminating at its lower longitudinal edge in oppositely disposed flanges, the main runners of which are disposed in a common plane in uniformly spaced rows, the respective intermediate portions of the cross runners being of a length to span the distance between adjacent rows of main runners, with the free ends of the intermediate portions of the cross runners each forming a support portion, spaced above the flanges thereon, and resting upon a longitudinally intermediate portion of the flange of a cooperating main runner, said support portions of the respective cross runners terminating at the adjacent sides of the vertically extending intermediate portions of laterally adjacent main runners, whereby the cross runners are each adapted to define a minimum spacing between such main runners, and such cross runners are independently freely movable along the cooperating main runners in the longitudinal directions thereof, the flanges of said cross runners forming panel-supporting elements thereon which are disposed below the associated support portions and thus below the flanges of the main runners and arranged to permit disposition of
ceiling panels supported thereby in a common plane positioned below the common plane, and independent of the location, of said main runners such ceiling panels extending underneath a main runner and connecting the adjacent ends of two aligned cross runners, supported by the latter, whereby the cooperative kerfs of such a panel and of a cooperable laterally adjacent panel at the opposite side of such two cross runners will receive the panel-supporting thereof and thereby form position-retaining means for maintaining the otherwise independently freely movable adjacent ends of such two cross runners in alignment, and also adapted, upon sufficient upward movement of such end of a cross runner relative to the associated main runner, to provide and interlocking action restricting further upward movement of such end of the cross runner.

2. In a suspended ceiling structure according to claim 1, wherein the main and cross runners are provided with cooperable interlocking elements restricting longitudinal movement of the cross runners in a direction away from a main runner supporting the same and thus prevent undesired disengagement therebetween.

3. A suspended ceiling structure according to claim 2, wherein said cooperable interlocking elements comprise an upwardly directed longitudinally extending flange at the free outer edge of a flange of the main runner and an abutment formed on the support portion of the cross runner.

4. A suspended ceiling structure according to claim 3, wherein said upwardly directed longitudinally extending flange is provided with a notch therein and the support portion of a cross runner has a L-shaped notch therein disposed to receive the main runner flange following engagement of said support portion of the cross runner with the main runner at said notch therein.

5. A suspended ceiling structure according to claim 3, wherein said upwardly directed flange extends continuously, said support portion of said cross runner having an upwardly extending notch therein adapted to receive the longitudinal flange of the main runner.

6. A suspended ceiling structure according to claim 3, wherein the main runner is supported by longitudinally spaced hangers having runner engaging means at their lower ends, said main runner having continuously extending longitudinally directed relatively resilient means thereon cooperably engageable, by resilient deformation, with the means on said hangers by movement of said main runner in a vertical direction substantially normal to the longitudinal axis of the main runner for supporting such runner from the hangers.

7. A suspended ceiling structure according to claim 6, wherein said cooperative means on the hangers and runners comprises interlocking elements on the respective members, the means on one of the members being adapted to be sprung into operative engagement with the means on the other member.

8. A suspended ceiling structure according to claim 7, wherein said main runner comprises a strip of metal longitudinally bent to form a pair of generally horizontal oppositely disposed flanges upon which the end portions of respective cross runners may be supported, said main runner having a centrally disposed vertically extending web portion of double thickness terminating at its upper edge in a pair of oppositely disposed longitudinally extending edge portions forming said springable means and adapted to be sprung into engagement with cooperable means on the respective hangers.

9. A suspended ceiling structure according to claim 8, wherein said means on the hanger comprises a generally T-shaped slot opening on the bottom end of the hanger, said springable edge portions of the main runner extending downwardly in opposite directions from the web portion and adapted to be sprung toward one another to permit insertion in said T-slot.

10. A suspended ceiling structure according to claim 9, wherein the support portion of a cooperable cross runner has an end configuration correspondingly constructed to rest upon the flange of the main runner with such portion interlocked with the adjacent springable edge portion of the main runner.

11. A suspended ceiling structure according to claim 7, wherein said means on the hanger comprises a projection depending downwardly from the bottom edge of the hanger and having a generally arrow-head configuration with a generally triangular-head portion connected by a neck portion to the hanger, said springable edge portions of the main runner extending inwardly in opposed relation from laterally spaced portions of said double web and adapted to spring outwardly to permit insertion of the head of a hanger to enter therebetween and interlock therewith.

12. A suspended ceiling structure according to claim 11, wherein the lower portion of the web of said main runner comprises a pair of parallel, relatively closely spaced walls and the upper edge portion of the web is laterally offset outwardly to form a pair of parallelly extending relatively widely spaced portions with said springable edge portions extending inwardly from the top edges of the respective widely spaced portions.

13. A suspended ceiling structure according to claim 12, wherein the adjacent support portion of the cross runner has a configuration such that it will be disposed under and substantially abut said offset portion.

14. A suspended ceiling structure according to claim 1, wherein at least one of said cross members is constructed as two longitudinally extending separable elements, one of which is constructed to detachably support the other.

15. A suspended ceiling structure according to claim 14, wherein one of said separable elements is provided with means along its upper edge engageable with the upper edge portion of the other separable element for support therefrom.

16. A suspended ceiling structure according to claim 15, wherein said separable elements are provided with cooperative means permitting one of said elements to be separated by downward movement thereof from the other of said elements.

17. A suspended ceiling structure according to claim 1, wherein the support portion of the cross runner is provided with a longitudinally extending slot therein opening on the end edge thereof and adapted to receive the adjacent flange of the main runner.

18. A suspended ceiling structure according to claim 1, wherein the support portion of the cross runner extends longitudinally outwardly beyond the end edges of the associated flange and has a horizontally extending bottom edge adapted to rest upon the adjacent flange of the main runner.