Aug. 1, 1961 P. D. DAIL 2,994,113

CEILING CONSTRUCTION

Filed Aug. 3, 1956

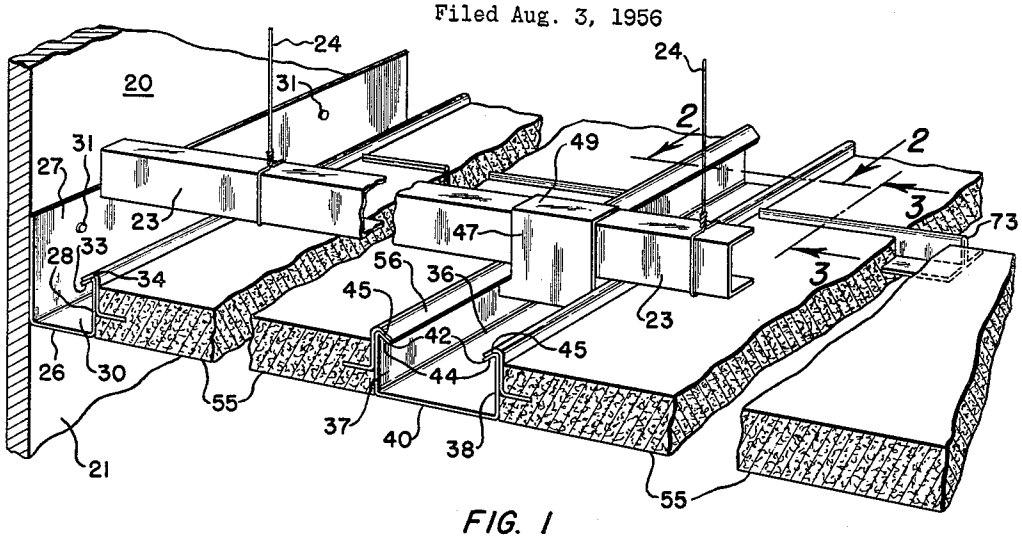


FIG. 1

FIG. 4

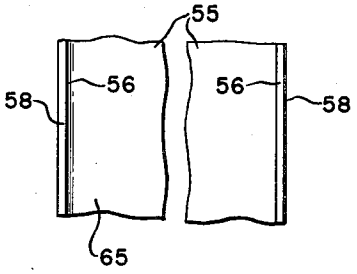


FIG. 2

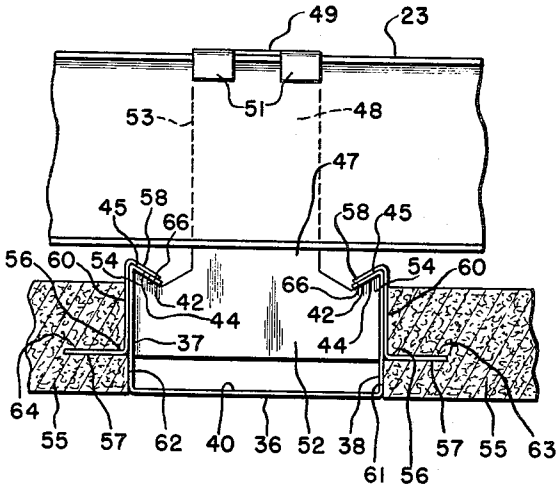
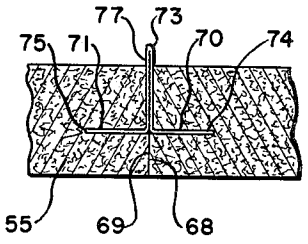


FIG. 3



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CEILING CONSTRUCTION

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The present invention relates to ceiling construction and more particularly to a construction in which the ceiling is suspended in spaced relationship from the top wall of a building framework.

In practicing my invention, I employ a plurality of runners which are suitably hung in parallel spaced relationship from the top wall of a building framework. Each of these runners includes a pair of parallelly arranged, upwardly facing shoulders which extend longitudinally of the runner. Substantially S-shaped splines are utilized to support a row or rows of ceiling tile between and by pairs of runners. These splines each includes an upper leg or flange, a lower leg or flange, and a vertically extending section which connects these two legs. The upper legs are each adapted to rest upon a shoulder of a runner and the lower legs are each adapted to fit within a kerf formed in the side face of a rectangularly shaped ceiling tile, i.e. each tile is provided with kerfs disposed in each of the opposite side faces of the tile, and one of these kerfs receives the lower leg of one of the S-shaped splines and the opposite kerf receives the lower leg of another of the splines; the upper legs of these splines rest on the shoulders of the next adjacent runner.

For this purpose, each of the tiles is provided with kerfs in the other two end faces of the rectangularly shaped tile. The bridging member between tiles has portions extending into each of the kerfs of confronting side faces. If desired, this bridging member may be T-shaped, in which event, the upper leg of the member extends between confronting faces of the tile and the horizontal legs extend into the kerfs of the confronting side faces.

Further objects and advantages will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred embodiment of the invention is illustrated.

In the drawing:

FIG. 1 is a fragmentary perspective view, showing a fragment of a side wall of the building framework, and showing a fragment of a ceiling;

FIG. 2 is a fragmentary sectional view taken along line 2—2 of FIG. 1 but on a larger scale;

FIG. 3 is a fragmentary sectional view taken along line 3—3 of FIG. 1, on a scale like that of FIG. 2; and

FIG. 4 is a view, on a smaller scale, showing a unit including a tile and two S-shaped splines.

Referring more in detail to the drawing, one of the side walls of a building 20 is shown at 21. A plurality of parallelly arranged and suitably spaced C-shaped members are carried in any desirable manner by the framework, for example by the roof or top wall of a room. One of these C-shaped members is shown at 23 carried by wires 24.

A plurality of runners are carried either directly by the building framework or by the member 23. Preferably the extreme side runners are carried by the side walls 21 of the building. One of these side runners is shown at 26; it includes upwardly extending side walls 27 and 28 and a connecting yoke or bottom wall 30. The side wall 27 is suitably secured to the side wall of the building as by nails 31. The upper end of the side wall 28 of the runner 26 is turned inwardly and bent downwardly, forming a flange 33, the upper surface of which forms a shoulder 34.

Other runners extend parallelly of runners 26 and with one another. One of these runners is shown at 36. Each runner is disposed at right angles with respect to the C-shaped members 23. Each includes opposite side walls 37 and 38 and a connecting bottom wall 40. The upper ends of the side walls are bent inwardly, i.e., toward one another and downwardly to form inwardly and downwardly extending flanges 42. The underside of flanges 42 provide downwardly facing shoulders 44 extending longitudinally and throughout the length of the runner. The upper side of flanges 42 provides upwardly facing shoulders 45 extending longitudinally of and throughout the length of the runner.

Each of the runners 36 is suspended from C-shaped members through clips 47. These clips, like the C-shaped members and the runners 26 and 36, are formed of pliable sheet material, such as sheet metal. Each clip includes a vertically extending section 48 connected with a bent over top section 49, which latter merges into tines 51. The top section is supported by the top C-shaped member 23, and the tines 51 are bent downwardly at right angles to the top section to prevent the accidental movement of the clip. The lower portion 52 of vertical section 48 is wider than the upper portion 53 of section 48, its width being slightly less than the distance between walls 37 and 38 of runner 36. The outer ends of portion 52 extend upwardly, outwardly to provide upwardly-outwardly extending and upwardly facing shoulders 54 which support the runner 36 through the shoulders 45 of flanges 42.

In hanging the runner 36, lower portion 52 of the clip is inserted into the channel formed by the side walls 37 and 38 of runner 36; then the clip is turned so that the portion 52 is at right angles to the runner; the clip is then hung on the C-shaped member. In removing the runner, it is necessary merely to raise the clip to unhook it from the runner; then the clip is lowered and turned so that the sides of the clip portion 52 clears the inner edges of flanges 42.

Rows of rectangularly shaped tiles, for example, tiles 55, formed of acoustic material are carried by the runners 26 and 36 through S-shaped splines 56. Each spline includes a lower horizontally extending leg or flange 57, an upper leg or flange 58 and a vertically extending connecting section 60. The opposite side faces 61 and 62 of the tiles 55 are provided with horizontally extending kerfs 63 and 64 respectively. These kerfs receive the horizontally extending legs 57 of the S-shaped spline 56. These legs 57 are frictionally held in place in the kerf, and a pair of these splines and a tile form a unit 65. This unit is hung in place through the hooking engagements of the legs 58 over the shoulders 45 of flanges 42, the undersides 66 of the legs 58 forming shoulders carried by the shoulders 45. In placing the tile in position, the aforementioned unit 65, while being lifted into position, is tilted slightly so that the outer ends of the legs 58 clear the sides 37 and 38 of adjacent runners; then, after the legs 58 are moved above the top edge of the sides 37 and 38, the unit is lowered into supported position on the shoulders 45 of flanges 42. The spline, being coextensive with the length of the tile, bridges the space between the side edge of the tile and the next adjacent side of the runner.

The other two side faces 68 and 69 of the tile 55 are provided with kerfs 70 and 71, respectively, as is more clearly shown in FIG. 3. Confronting faces 68 and 69 receive a sealing or bridging member 73, a part 74 thereof extending into kerf 70 and another part 75 thereof extending into kerf 71. The ends of these members 73 should extend up to the legs 57, or slightly beyond the legs 57, of splines 56 to assure sealing throughout the

length of the confronting end faces. Preferably the bridging member 73 is T-shaped, i.e., having an upright leg 77 which adds rigidity to the member.

Thus the runners, tiles, splines, and sealing members 73 cooperate to provide a ceiling which is impervious to light and dust.

While the method herein described constitutes one preferred method, it is to be understood that other methods may be adopted falling within the scope of the claims that follow.

I claim:

1. In combination, a plurality of runners, said runners each including a bottom wall, connecting upwardly extending side walls and a pair of parallelly arranged upwardly facing shoulders extending longitudinally of the runner in the direction of one another; means for supporting said runners from a framework of a building in spaced parallel relationship; substantially S-shaped splines, each having an upper leg supported by one of said shoulders of the runner in detachable relationship, a vertically extending section connected to one end of said upper leg and extending downwardly therefrom along the outside face of a side wall of the runner; and a substantially horizontal lower leg extending horizontally outwardly from the lower end of the vertically extending section at a point above the bottom wall of said runner; and a row of ceiling tiles, each being of a length substantially equal to the distance between two runners and each having horizontally extending kerfs in the opposite end faces thereof, said horizontal lower legs of said splines extending within said kerfs, the distance of said kerf from the lower face of the tile being substantially equal to the distance between said lower leg and the face of the bottom wall, the bottom wall of each of said runners being substantially flush with the bottom face of said tiles; said splines being substantially coextensive with the length of the tile thereby bridging the space between the side edge of the tile and the side of the adjacent runner, each of said tiles being individually removable from said runners and said splines.

2. In combination, a plurality of runners, said runners each including a bottom wall, connecting upwardly extending side walls and a pair of parallelly arranged upwardly facing shoulders extending longitudinally of the runner in the direction of one another; means for supporting said runners from a framework of a building in spaced parallel relationship; substantially S-shaped splines, each having an upper leg supported by one of said shoulders of the runner in detachable relationship, a vertically extending section connected to one end of said upper leg and extending downwardly therefrom along the outside face of a side wall of the runner; and a substantially horizontal lower leg extending horizontally outwardly from the lower end of the vertically extending section at a point above the bottom wall of said runner; and a row of ceiling tiles, each being of a length substantially equal to the distance between two runners, said tiles being rectangularly shaped, each of the opposite end faces of each tile having horizontally extending kerfs

therein, said horizontal lower legs of said splines extending within said kerfs, the distance of said kerf from the lower face of the tile being substantially equal to the distance between said lower leg and the face of the bottom wall, the bottom wall of each of said runners being substantially flush with the bottom face of said tiles, each of the other two faces of each tile having horizontally extending kerfs therein, said splines being substantially coextensive with the length of the tile, thereby bridging the space between the side edge of the tile and the side of the adjacent runner, and bridging members, each of said bridging members having portions extending into the last-mentioned kerfs and confronting the side faces of said tiles, each of said tiles being individually removable from said runners and said splines.

3. In combination, a plurality of runners, said runners each including a bottom wall, connecting upwardly extending substantially parallel, spaced side walls and a pair of parallelly arranged upwardly facing shoulders extending longitudinally of the runner in the direction of one another; means for supporting said runners from a framework of a building in spaced parallel relationship; substantially S-shaped splines, each having an upper leg supported by one of said shoulders of the runner in detachable relationship and extending toward a like leg of another spline carried by the other of said shoulders of said runner, said legs extending downwardly from the shoulders to thereby hook over said shoulder, each of said splines having a vertically extending section connected to one end of said upper leg and extending downwardly therefrom along the outside face of a side wall of the runner; and a substantially horizontal lower leg extending horizontally outwardly from the lower end of the vertically extending section at substantially right angles thereto and at a point above the bottom wall of said runner, and a row of ceiling tiles, each being of a length substantially equal to the distance between two runners and each having horizontally extending kerfs in the opposite end faces thereof, said horizontal lower legs of said splines extending within said kerfs, the distance of said kerf from the lower face of the tile being substantially equal to the distance between said lower leg and the face of the bottom wall, the bottom wall of each of said runners being substantially flush with the bottom face of said tiles, said splines being substantially coextensive with the length of the tile thereby bridging the space between the side edge of the tile and the side of the adjacent runner, each of said tiles being individually removable from said runners and said splines.

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