Sept. 13, 1966 G. T. PHILLIPS 3,271,918

HANGER ASSEMBLY

Filed June 16, 1964

FIG.1.

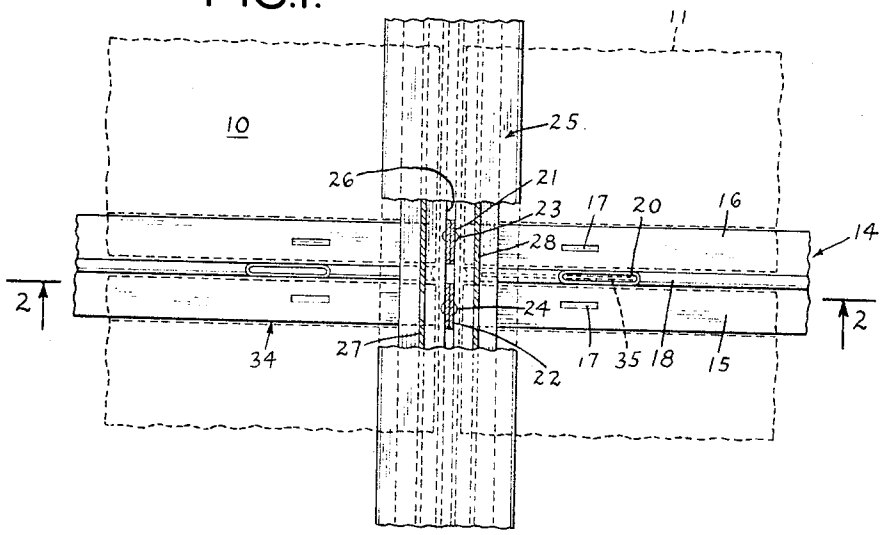


FIG.2.

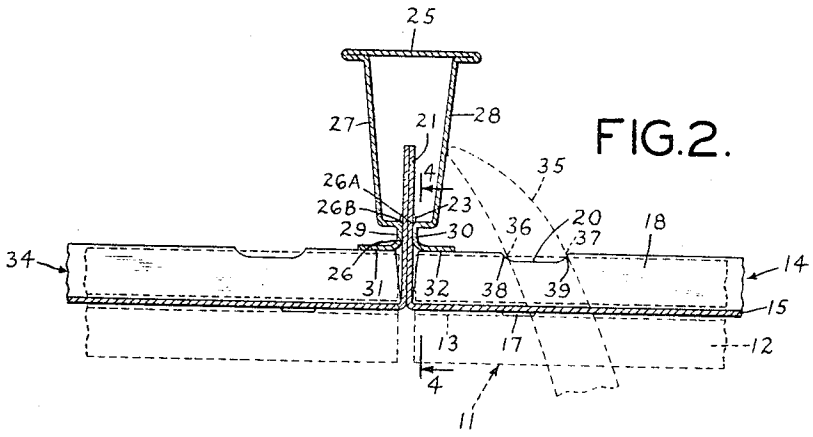
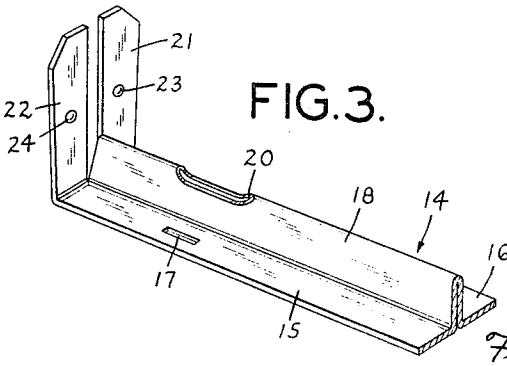


FIG.3.



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HANGER ASSEMBLY

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This invention relates to the assembly of walls and other surfaces from tiles and, more particularly, relates to an improved method and apparatus for securing such tiles in position.

Walls or drop ceilings formed of an array of removable acoustic tiles supported from hangers are often used in modern building construction to provide attractive walls or ceilings and allow access to mechanical and electrical equipment installed in the spaces between the walls or between adjacent ceilings and floors. The tiles are frequently damaged during removal from the supporting hangers when access is required to these spaces.

In accordance with the present invention, such tile damage is eliminated by mounting the tiles by brackets of which each is removable from the tile wall or ceiling without preliminarily breaking or otherwise damaging the particular tiles supported by that bracket.

For a better understanding of the present invention, reference may be had to the following description and to the drawings, in which:

FIG. 1 is a plan view partly in section of an embodiment of a drop ceiling according to the present invention;

FIG. 2 is a side view in section of the ceiling in FIG. 1, the view being taken along the line 2—2 of FIG. 1; and

FIG. 3 is a perspective view of a bracket according to the present invention.

Referring to FIG. 1, the drop ceiling **10** is comprised of a horizontal array of conventional acoustic tiles **11**. The tiles **11** have vertical edges **12** (FIG. 2) which are provided with horizontal rabbets **13**.

A stiff transverse member or bracket **14** has a pair of horizontally disposed flanges **15** and **16** receivable in the horizontal rabbets formed in the vertical edges **12** of the tiles **11**. Detents **17** may be stamped or similarly formed in the horizontal flanges **15** and **16** to provide a snug fit between the rabbets **13** and the flanges **15** and **16**.

An inverted V-shaped hollow vertical web **18** having a height at least equal to approximately one-half of the thickness of the tiles **11** is formed in the bracket **14** between the flanges **15** and **16**. As shown (FIG. 3), a portion of the top of the web **18** is cut away to form a slot **20** whose purpose will be described subsequently.

Upwardly protruding vertical flanges **21** and **22** are formed on the end of the bracket **14** adjacent to the slot **20**. A pair of small hemispherical detents **23** and **24** are formed in the vertical flanges **21** and **22** and are spaced above the apex of the vertical web **18**.

A stiff, tubular longitudinal member of channel **25** is (FIGS. 1 and 2) permanently fixed to a portion of a building (not shown) and is disposed immediately above the bracket **14**. The channel **25** has resilient, downwardly converging sides **27** and **28** on opposite sides of a lengthwise slit **26**, the sides **27** and **28** having upwardly diverging curved inner edges **26A** and **26B**. A pair of parallel sides **29** and **30** form the lower portion of the lengthwise slit **26**. Longitudinal and horizontally disposed bracing flanges **31** and **32** are flared away from the lower edge of the parallel sides **29** and **30**, respectively.

In operation, as shown in FIGS. 2 and 4, the rabbeted edges of the tiles **11** are placed on the horizontal flanges **15** and **16** of the hanger **14** so that the upper halves of the

vertical tile edges **12** abut the web **18**. The detents **17** on the horizontal flanges **15** and **16** engage the inner surfaces of the rabbets **13** and retain the tiles **11** on the bracket **14**. When the tiles **11** are suitably arranged on the bracket **14**, the vertical flanges **21** and **22** are urged into the slit **26** which is wedged apart by the uppermost quadrants of the hemispherical detents **23** and **24**. The hemispherical detents **23** and **24** on the vertical flanges **21** and **22** of the bracket **14** are so spaced above the apex of the vertical web **18** that the lowermost quadrants of the detents are wedged against the curved inner edge **26A** of the slit **26** to thereby draw the apex of the web **18** against the bracing flange **32**.

In like manner, a similar bracket **34** is urged into the slit **26** in abutting relationship with the bracket **14**, thereby further separating the opposing edges of the slit **26** and increasing the forces holding the brackets **14** and **34** within the channel **25**.

To withdraw the bracket **14** from engagement within the channel **25**, the blade **35** of a knife or like tool is inserted between the vertical edges **12** of adjacent tiles **11** and through the central slot **20** in the vertical web **18**. As shown (FIG. 2), the blade is passed laterally through the slot at an angle to the vertical so that the forward end of the blade comes to rest against the side **28** of channel **25**, and so that lower and upper edge portions **36** and **37** of the blade are in contact with, respectively, the upper portion **38** of the edge at the left hand edge of the slot and the lower portion **39** of the edge at the right hand end of the slot. Those two edge portions provide fulcra against which the tool is levered to jack the bracket **14** out of the slit **26**.

Such jacking is accomplished by gripping the tool handle (not shown), and by then tilting the tool counterclockwise by wrist movement and simultaneously displacing the tool in a downward movement guided by the channel side **28** against which the blade **35** rests. After the vertical portions **21** and **22** of the bracket **14** have been jacket out of the slit **26**, the tiles **11** may be removed from the horizontally disposed flanges **15** and **16**.

Since the slot **20** enables the tool blade **35** to be slipped in between the two tiles to either side of bracket **14** and to then engage with the bracket in a manner permitting it to be jacked out of the channel **25** by the tool, the provision in the bracket **14** of the slot **20** permits the bracket to be removed without preliminarily disturbing one or the other or both of such tiles in order to get a good grip on the bracket. Hence, a slotted bracket in accordance with the present invention eliminates the practice which was hitherto necessary of breaking or otherwise damaging some of the tiles of a tile panel in order to remove the tile-supporting brackets of the panel.

While a representative embodiment of the present invention has been shown and described for purposes of illustration, various changes and modifications may be made therein without departing from the principles of this invention. Therefore, all such changes and modifications are included within the intended scope of the invention as defined by the following claims.

I claim:

1. Tile support apparatus for a panel of tiles comprising, a channel member having formed therein a lengthwise slit with resiliently separable sides, a tile-support bracket disposed outwards of said slit in transverse relation to the center plane thereof, said bracket having a web towards said slit, flange means extending from said bracket into said slit and releasably grasped within said slit by the resilient sides thereof, and fulcrum means provided by said web for a tool adapted by engagement with said fulcrum means to exert on said bracket a pulling force by which said flange means is removable from said slit.

2. Tile support apparatus comprising, bracket means having a longitudinally extending, transversely central portion and having on transversely opposite sides thereof a pair of longitudinal means for supporting transversely spaced tiles on said opposite sides of said portion, means laterally salient in one direction from said bracket means and yieldably graspable by a support and backing member for said bracket means, and means in said transversely central portion providing on said bracket means at least one fulcrum portion for a tool blade insertable between said spaced tiles, said fulcrum portion being engageable by the edge of a blade portion offset in said one direction away from said fulcrum portion so as to permit said blade portion to jack said bracket means away from said member.

3. Tile support apparatus comprising, bracket means having a longitudinally extending, transversely central portion and having on transversely opposite sides thereof a pair of longitudinal means for supporting transversely spaced tiles on said opposite sides of said portion, means laterally salient in one direction from said bracket means and yieldably graspable by a support and backing member for said bracket means, such bracket means having formed in said central portion a longitudinal slot passing laterally through such portion, and said slot providing at each of its longitudinally opposite ends a fulcrum portion on said bracket means for a tool blade insertable between said spaced tiles through said slot to engage said bracket means at each of said ends.

4. Tile support apparatus comprising, a bracket member having a longitudinal vertical hollow web of inverted V shape, said member also having two horizontal longitudinal tile support flanges on transversely opposite sides of said web, said web having a portion thereof cut away to provide a longitudinal slot extending vertically through said web, and flange means salient from said bracket member and insertable into a resilient holding slit in a support and backing channel for said bracket member.

5. A method of removing from a support and backing member a tile-support bracket resiliently fastened to and backed by said member, said bracket being disposed transversely between two spaced tiles in a panel thereof to support such two tiles, and said bracket having a slot passing laterally therethrough at a position transversely intermediate said two tiles, said method comprising, inserting the blade of a tool from the front side of said panel between said two tiles and through said slot to position a portion of said blade at the back side of said bracket, tilting said tool by manipulation thereof at said front side to engage opposite sides of said blade with fulcrum portions of said bracket at opposite ends of said slot and on opposite lateral sides of said slot, and further manipulating said tool to draw said engaged blade away from said panel and to thereby jack said bracket away from said member.

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