Sept. 29, 1970 J. C. OLLINGER 3,530,625

CEILING PANEL HANGER REMOVAL

Filed March 29, 1968

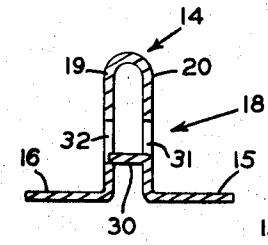


Fig. 1

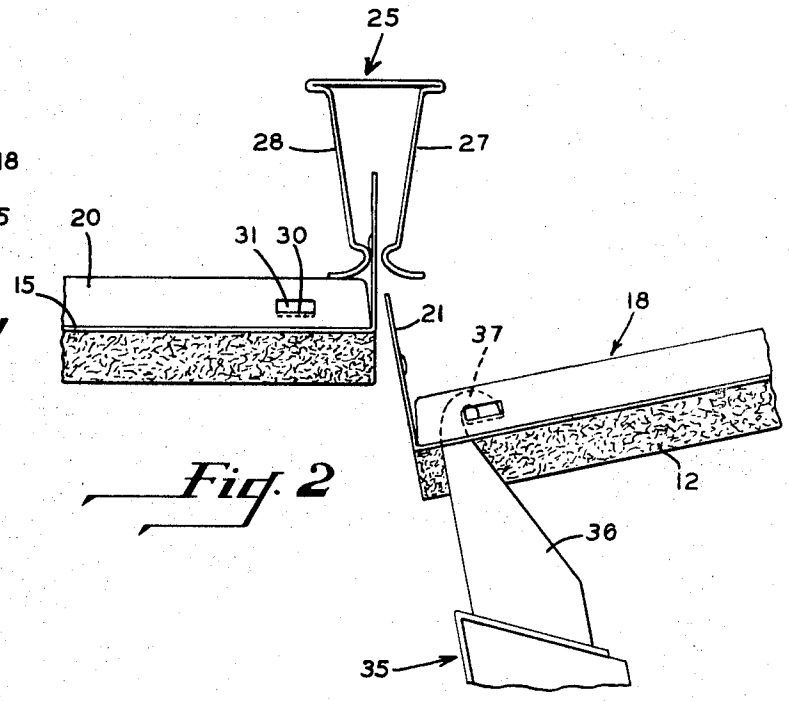


Fig. 2

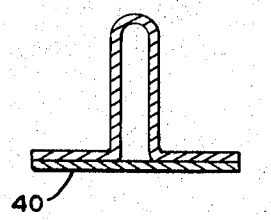


Fig. 3

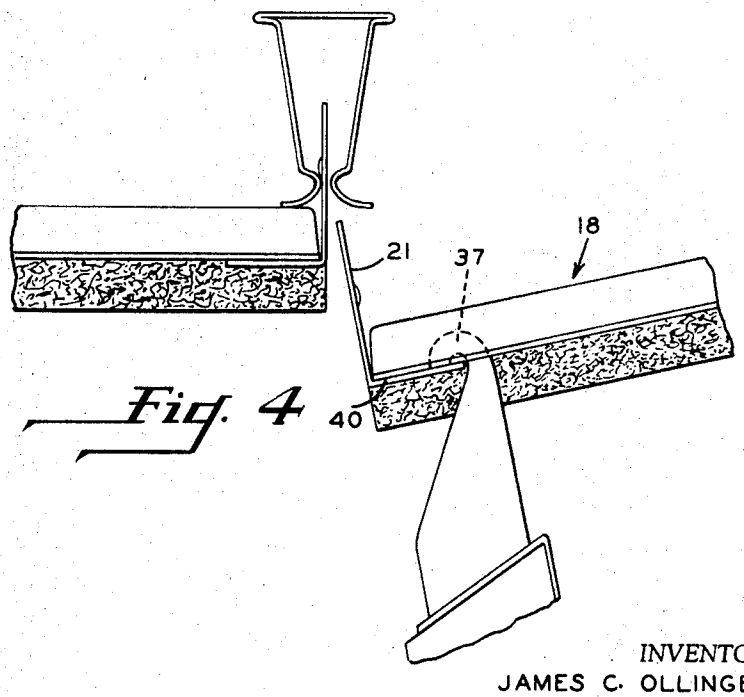


Fig. 4

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CEILING PANEL HANGER REMOVAL

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U.S. Cl. 52—127 3 Claims

ABSTRACT OF THE DISCLOSURE

A method and apparatus for the easy removal of ceiling panels in a suspended ceiling system. The ceiling panels are supported by hangers which snap into main runner supports. The main runner supports provide the primary supports for the ceiling system, while the hangers provide the support for the individual panels. Accessibility to the area above the suspended ceiling is desirable and a means must be provided for readily removing the panels to gain access to the area above the ceiling system. The use of a hook tool to slide between adjacent panels to engage the individual hangers will permit a downward movement of the tool to free the hangers from the main runner supports. The freeing of the hangers from the main runner supports thus permits removal of individual panels to gain access to the area above the ceiling system.

BACKGROUND OF THE INVENTION

Field of the invention

This invention relates to the assembly of ceilings and other surfaces from tiles or panels and, more particularly, relates to an improved method and apparatus for permitting the removal of the tiles or panels to provide access to the area above the ceiling assembly.

Description of the prior art

The main runner support and the hanger support are set forth in Pat. No. 3,271,918. That patent discloses the use of a blade and lever and fulcrum action to release the hanger support from the main runner support. Such a system of hanger support removal places an undue stress on the sidewall of the main runner support and requires an awkward exertion to remove the hanger support from the main runner support.

The proposed method of removing the hanger support from the main runner support involves a simple downward pull on a tool that is hooked to the hanger support. Such a method places no undue stress on any of the component parts of the suspended ceiling system and applies a force only in that direction necessary to release the hanger support from the main runner support. The modified hanger support assembly may be easily fabricated.

SUMMARY OF THE INVENTION

The proposed method of removing the hanger support from the main runner support involves merely the use of a hook-shaped tool for grasping the hanger support and applying a directly downward movement to remove the hanger support from the main runner support.

The modified hanger support structure is provided with a means engageable by the hook structure to facilitate removal of the hanger support. The means engageable by the hook support may be any type of structure that will provide a grasping surface for the hook structure. The hook is a flat, thin metal structure that slides between two adjacent tiles or panels and engages the means on the hanger support, which means permits the hook to apply a downward force to the hanger support.

The means engaged by the hook may be a tab between the two sidewalls forming the vertical rib. The tab is formed by merely folding a small portion of metal out of one sidewall and bending it towards the second sidewall of the vertical rib.

An alternate structure would involve the use of a small plate being fastened to the underneath surface of the support flanges of the hanger support. The support plate could be separate from or an integral part of the vertical end flanges which engage the main runner support.

Any other type of structure could be used to provide a means engageable by the hook structure.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a cross-sectional view of one embodiment of the hanger support;

FIG. 2 is a side view of the hook structure engaging the structure of FIG. 1;

FIG. 3 is a sectional view of another embodiment of the hanger support; and

FIG. 4 is a side view of the hook structure engaging the embodiment of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The main runner support **25** has two converging sides **27** and **28** for grasping the ends of the hanger supports. The hanger supports or support brackets **14** are composed of a vertical web **18** formed from two parallel sides **19** and **20** and two horizontal flanges **15** and **16** extending from the bottom portion of the vertical web **18**. The horizontal flanges **15** and **16** engage the ceiling tiles or panels **12** and support them in the overall ceiling system. Vertical flange **21**, on the end of the hanger support **18**, snaps between the sides **27** and **28** of the main support runner **25**. The vertical flange **21** is frictionally held between the sides **27** and **28** of the main runner.

FIG. 1 shows the first embodiment wherein a tab **30** is bent out from portion **31** of sidewall **20** towards portion **32** of sidewall **19**. The tab **30** merely bridges the gap between sidewalls **19** and **20** of the vertical rib **18** to provide a means to be engaged by the hook structure of the removing tool **35**. The removing tool has a thin, flat portion **36** which slides between two adjacent ceiling tiles or panels and a hook portion **37** which engages the means of the hanger support to provide the downward force to the hanger support to remove it from the main runner support.

FIG. 3 discloses another embodiment wherein the vertical flange **21** is separate from the metal being used to form the horizontal flanges **15** and **16** and vertical rib **18**. The vertical flange **21** is formed from a separate piece of metal bent at a 90° angle to form the vertical flange portion **21** and a horizontal portion **40**. The horizontal portion **40** is fastened to the underside of the horizontal flanges **15** and **16**. Where element **40** spans the gap between sidewalls **19** and **20** of the vertical rib **18** there is formed a means to be engageable by the hook element **37**. As shown in FIG. 4, the hook element **37** will engage this portion of element **40** to provide the downward force necessary to remove the hanger support from the main runner support.

Other means may be provided on the hanger support to be engaged by the hook structure to facilitate removal of the hanger support from the main runner support.

What is claimed is:

1. A method of removing from a main runner support a hanger support resiliently fastened to said main runner support, said hanger support being disposed transversely between two spaced panels in a ceiling system to support said two panels, said hanger support having removal means disposed thereon for engagement by the hooked blade of a removal tool slipped between said two spaced

panels, said method comprising the steps of inserting the blade of the removal tool from the front side of said ceiling system into the space between said two panels so that damage thereto is avoided, hooking the blade of the tool on the removal means in the hanger support, pulling downward on the tool in a generally perpendicular direction from the front surface of the ceiling system and thereby providing a downward pull on the hanger support to remove the hanger support from the resilient grip of the main runner support whereby the hanger support and tiles may be readily removed from the main runner support by placing minimum stress upon the ceiling system.

2. A support apparatus comprising a ceiling panel support bracket having a longitudinal, vertical, hollow web, two horizontal, longitudinal panel support flanges extending traversely from opposite sides of the vertical web, flange means disposed on each end of the hanger support in a plane generally perpendicular to the plane of the horizontal flanges, and removal means disposed adjacent the vertical web, said means forming a surface adapted to be engaged by a thin hook-shaped tool to permit the application of a force to the support bracket in a direction generally perpendicular to the plane of the horizontal flanges, said means further being a tab bent out from one wall of the vertical web and attached only to that one wall and bridging the hollow area between the two sides forming the vertical web of the support bracket.

3. A support apparatus comprising a ceiling panel support bracket having a longitudinal, vertical, hollow web, two horizontal, longitudinal panel support flanges extending traversely from opposite sides of the vertical web, flange means disposed on each end of the hanger support in a plane generally perpendicular to the plane of the horizontal flanges, and removal means disposed adjacent the vertical web, said means forming a surface adapted to be engaged by a thin hook-shaped tool to permit the application of a force to the support bracket in a direction generally perpendicular to the plane of the horizontal flanges, said means further being a plate fastened to the horizontal flanges on the side away from the vertical web to provide a bridge spanning a portion of the space between the two sides of the hollow vertical web.

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U.S. Cl. X.R.

29—273, 427; 52—493