May 19, 1970 S. PECHENIK 3,512,818

CLIP

Filed Nov. 29, 1968

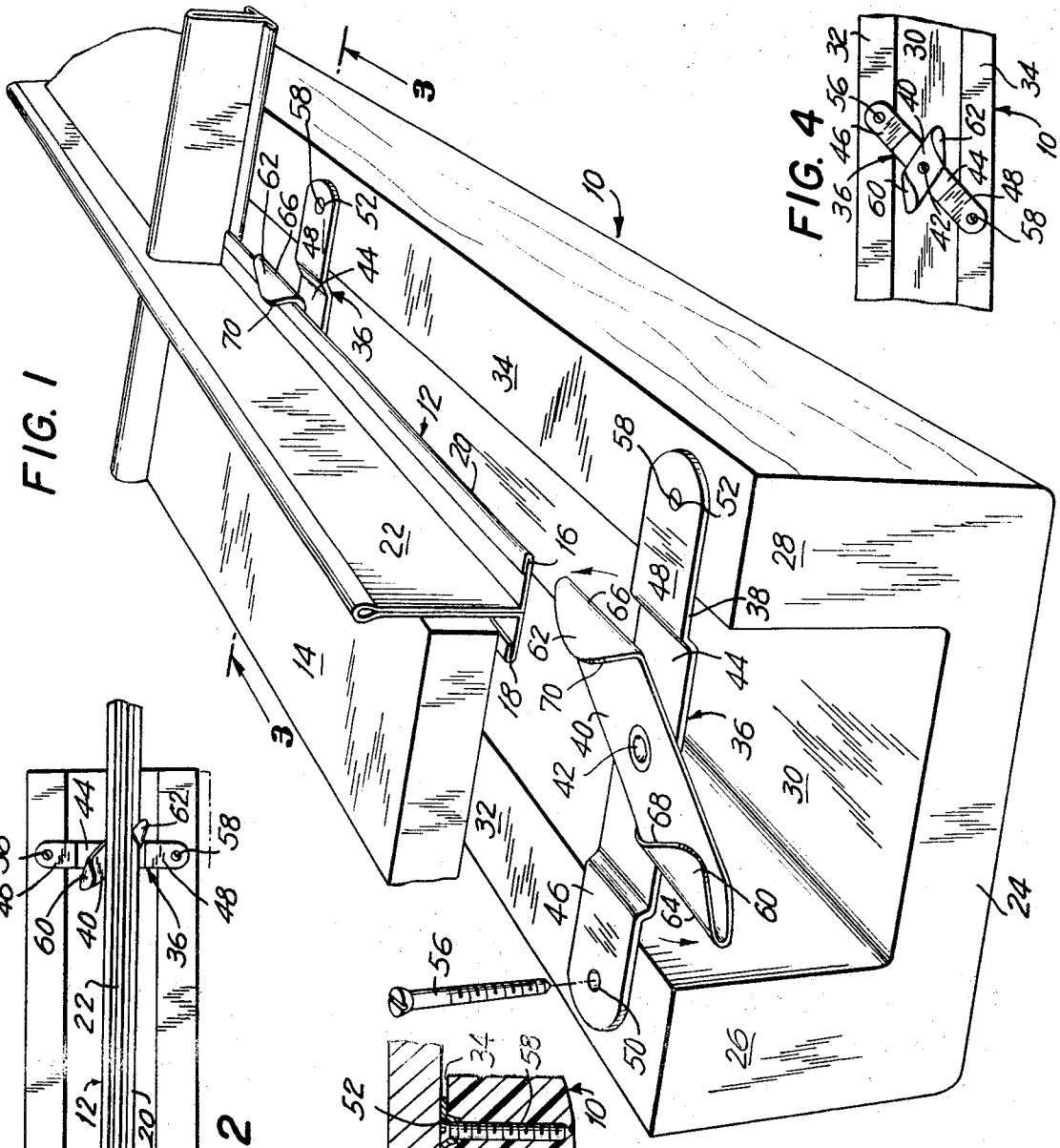


FIG. 1

FIG. 4

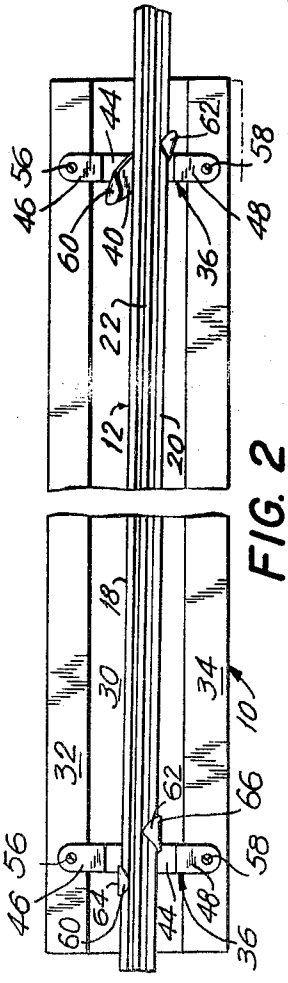


FIG. 2

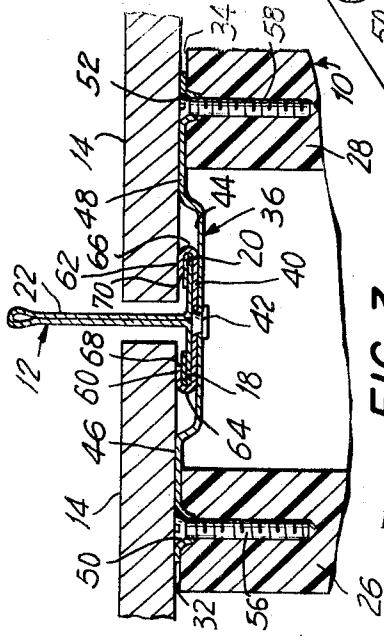


FIG. 3

INVENTOR.
STEPHEN PECHENIK
BY
Rachenbach & Siegel
ATTORNEYS

United States Patent Office 3,512,818
Patented May 19, 1970

3,512,818

CLIP

Stephen Pechenik, Red Lion, Pa., assignor to Paeco, Inc., a corporation of New Jersey

Filed Nov. 29, 1968, Ser. No. 779,882
Int. Cl. F16b 12/00
U.S. Cl. 287—189.35 9 Claims

ABSTRACT OF THE DISCLOSURE

Clip for supporting imitation, lightweight and cellular channel members comprising imitation beams of generally U-shaped cross-section for attachment to suspended ceilings comprising ceiling bars having generally inverted T-shaped cross-section by engagement with the flange thereof.

This invention relates, generally, to clips and, more particularly, to clips for attaching imitation beams to suspended ceilings.

In new construction and remodeling, the installation of suspended or false ceilings has become quite commonplace. One of the methods used widely in installing suspended or false ceilings comprises suspending a series of inverted T-shape supporting bars or rail members from an overhead supporting structure in parallel spaced arrangement by means of cables or rod members. Suitable ceiling panels are then supported between the transverse or horizontal portions of the T-shaped supporting bars. The ceiling panels commonly used are formed of several different materials such as plastic, steel, fiberboards, etc.

The beauty of exposed, hand-hewn wooden beams as architectural features in both homes and commercial establishments has long been appreciated. However, the degree of labor and skill necessary to produce and install such beams has, for all intents and purposes, substantially eliminated their use in modern times. However, there have recently been developed replicas of such beams fabricated of lightweight cellular material molded to define generally U-shaped channels with the exterior surface thereof being contoured and colored to imitate hand-hewn beams. Since these replica or imitation beams may be produced by molding and are easily installed on most surfaces merely by an adhesive bond, they are becoming very popular. However, while such replica or imitation beams may be installed on a suspended ceiling of the type referred to above by means of an adhesive, such mode of installation is not entirely satisfactory. Firstly, one advantage to such suspended ceiling systems is that individual ceiling panels may be readily and easily removed and replaced and the adhesive bonding of the ceiling panels and rails to the imitation or replica beams precludes the subsequent ready removal and replacement of such panels. Secondly, the adhesive bonding process requires that at least a moderate upward force be applied to the beams and resisted by the ceiling during formation of the bond. Such suspended ceiling systems, however, are not designed to resist the upward application of force thereto, occasionally making it difficult to achieve a good and secured bond.

Accordingly, it is a primary object of the present invention to provide novel and improved methods and apparatus for installing lightweight and cellular channel members to suspended ceilings.

Another primary object of the present invention, in addition to the foregoing object, is the provision of novel and improved methods and apparatus for installing replica or imitation beams contiguous the rails or bars of a suspended ceiling.

Yet another primary object of the present invention, in addition to each of the foregoing objects, is the provision of a novel clip for securing such beams with such ceilings.

Yet still another primary object of the present invention, in addition to each of the foregoing objects, is the provision of such clips which enable rapid, simple and secure installation of such beams with said ceilings and removal therefrom.

Another and yet still further primary object of the present invention, in addition to each of the foregoing objects, is the provision of such clips which enable the ceiling panel members to be removed as desired.

Yet still another and further primary object of the present invention, in addition to each of the foregoing objects, is the provision of such methods, apparatus and clips which do not require the application of even a moderate amount of upward force to the ceiling structure.

Another and yet still further primary object of the present invention, in addition to each of the foregoing objects, is the provision of such clips which are economical to manufacture and secure and durable in use.

The invention resides in the novel and improved methods and apparatus for mounting lightweight channel members, such as replica or imitation wooden beams with suspended shaped ceilings and in the combination, construction, arrangement and disposition of the various component parts and elements incorporated in improved clips in accordance with the principles of this invention. The present invention will be better understood and objects and important features other than those specifically enumerated above will become apparent when consideration is given to the following details and description which, when taken in conjunction with the annexed drawing describes, discloses, illustrates and shows a preferred embodiment or modification of the present invention and what is presently considered and believed to be the best mode of practicing the principles thereof. Other embodiments or modifications may be suggested to those having the benefit of the teachings herein, and such other embodiments or modifications are intended to be reserved especially as they fall within the scope and spirit of the subjoined claims.

In the drawing:

FIG. 1 is a pictorial perspective illustration of a suspended ceiling, channel member and clip structure for securing the panel member with the ceiling structure in accordance with the present invention;

FIG. 2 is a top plan view of a ceiling structure rail, channel member and clips for securing the channel member with the rail illustrating a step in the installation;

FIG. 3 is a cross-sectional view taken along line 3—3 in FIG. 1; and

FIG. 4 is a top plan view of a clip according to the present invention secured with another channel member.

With references now to the drawing, the present invention may be used for securing a channel member, such as a lightweight and cellular imitation or replica hand-hewn wooden beam **10** fabricated, as by molding, of low density rigid closed cell polyurethane foam to, by way of example only, a generally U-shaped cross-section, with a suspended ceiling structure comprising a grid system of rail or bar members **12** having a generally inverted T-shaped configuration and generally square or rectangular ceiling panel members **14**.

As heretofore pointed out, the ceiling bar or rail members **12** may be of generally inverted T-shaped configuration comprising side edges **18** and **20** and a generally upstanding portion **22** extending generally upwardly thereof generally medially of the side edges **18** and **20** with the ceiling panels **14** being supported by the flange

16 and positioned laterally by the upstanding portion 22.

The replica or imitation beams 10, as heretofore pointed out, may be of generally U-shaped or other channel or open topped configuration comprising, for example, a base portion 24 and a pair of spaced apart leg portions 26 and 28 extending generally upwardly thereof so as to define a generally open-topped channel 30 extending generally longitudinally of the beam 10. The upper surfaces 32 and 34, respectively, of the leg portions 26 and 28 would, generally, in the fabrication of the beams 10 be smoothed and lie in the same plane.

To enable the beam 10 to be secured with the ceiling rail or bar members 12, in accordance with the present invention, there may be provided a plurality of clip members constructed in accordance with the principles of the present invention and designated generally by the reference character 36.

Each of the clip members 36 may comprise a plurality of pivotally interassociated elongated bar members such as a cross bar 38 and a latch bar 40 pivotally interassociated at a location generally centrally of each, as by means of a rivet 42. The cross bar member 38 may comprise a generally flat central portion 44 adapted to be disposed within the channel 30 of the beam 10 and a pair of end portions 46 and 48 offset or dog-legged therefrom, provided with apertures 50 and 52 to enable ready and easy securement thereof with the beam 10, as by means of wood screws 54 and 56.

The latching bar member 40 may comprise a pair of oppositely upwardly and inwardly turned or folded corner portions 60 and 62 defining folded edges 64 and 66, respectively, extending generally parallel to one another at an angle of approximately 45 degrees to the longitudinal axis of the latching bar 40. The folded portions 60 and 62 therefore define a pair of generally parallel spaced apart adjacent edges 68 and 70 generally laterally disposed on either side of the rivet 42 with the space therebetween being sufficient to enable the flange portion 16 of the ceiling rail member 12 to pass unobstructed therebetween. Similarly, the folded edges 64 and 66 may be spaced apart a distance sufficient to enable the flange portion 16 of the ceiling bar or rail member 12 to extend therebetween with the central portion of the latching member 40 being disposed therebeneath and the folded portions 60 and 62 being disposed above the flange portion 16 of the rail or ceiling bar member 12. Yet further, the folds 64 and 66 may be of sufficient radius that the end portions 60 and 62, respectively, are spaced apart from the central portion of the latching bar member 40 a distance substantially equal to the thickness of the flange 16 so as to enable the flange 16 to be grippingly engaged therebetween.

Accordingly, with the latching bar member 40 disposed generally perpendicularly to the edges 18 and 20 of the flange 16 or, in other words, with the edges 68 and 70 disposed generally parallel the edges 18 and 20, the clip may be readily raised into engagement with the flange 16 with the flange 16 passing substantially unobstructed between the edges 68 and 70 to a position generally beneath the overturned end portions 60 and 62. Then, upon rotation of the locking bar member 40 to an angle of approximately 45 degrees, as indicated by the arrows to the position shown in FIG. 1, the flange 16 will be grippingly and securely engaged beneath the overturned end portions 60 and 62. The offset or dog legs of the cross bar member 38 enables the end portions 48 and 50 to be disposed closely subjacent the ceiling panels 14 even though the flange 16 and locking bar 40 may have some thickness. In other words, the dropped center portion 44 of the cross bar 38 extends downwardly into the channel 30 of the beam 10 and enables the beam 10 to be installed with the surfaces 32 and 34 thereof generally flush and closely adjacent the ceiling panels 14.

Imitation or replica wooden beams molded to a generally U-shaped configuration from low density rigid polyurethane foam may, therefore, in accordance with the present invention be readily, easily and quickly installed, substantially as follows:

First, the installer would take appropriate measurements, and cut and fit the replica beams, as with a knife, fine-toothed saw, or the like, for the desired position along the chosen ceiling bar or rail 12. With the ceiling panels 14 lifted out of the way, the installer would hold the beam 10 in position and pencil mark the upper surfaces 32 and 34 at all places where the ceiling bars or rails 12 cross it.

Then, the installer would locate a number of clips 36 along the beam 10 at, for example, three to five foot spacing, with each clip being spaced apart sufficiently from the marked locations where the ceiling bars cross to enable the latching portion 40 to be freely rotated without interference by cross bars or rails. The clip 36 should be centered laterally on the beam 10.

Then, each of the clips 36 may be secured with the beams 10, as by the screws 56 and 58 until the screwheads are flush against the clip.

Then, raising the beam 10 and associated clips 36 with the latching bars 40 thereof positioned to enable free passage of the ceiling rail flange 16 therein, the beam is raised into position and the latching bar 40 of the clip 36 at one end of the beam is turned counterclockwise to lock onto the ceiling bar flange 16. The clip at the other end of the beam 10 may then be rotated partially counterclockwise to engage the ceiling bar flange 16 and that end of the beam 10 be moved sideways until aligned parallel with the ceiling bar, after which all of the clips 16 are given their maximum counterclockwise turn, locking onto the ceiling bar flange 16 while preserving beam alignment (see FIG. 2).

Finally, the ceiling panels 14 would be re-positioned. The beams 10 may be removed at any time by merely reversing the above procedure. Beam members having a width less than the length of the center portion 44 of the cross bar 38 may be installed in accordance with the present invention by merely disposing the cross bar 38 generally angularly relative to the beam, as illustrated in FIG. 4.

For convenience in description, the terms "upper," "lower," "inner," "outer" and other similar directional terminology as used in the preceding description and the subjoined claims are to be construed and interpreted in their normal and accepted sense and with reference to FIG. 1. However, such terminology is not to be construed or interpreted in a limiting sense either in the preceding description or the subjoined claims, since the same is used merely to facilitate an understanding of, and to clearly set forth and particularly define the present invention.

While the invention has been describd, disclosed, illustrated and shown in terms of an embodiment or modification which it has assumed in practice, the scope of the invention should not be deemed to be limited by the precise embodiment or modification herein described, disclosed, illustrated or shown, such other embodiments or modifications as may be suggested to those having the benefit of the teachings herein being intended to be reserved especially as they fall within the scope and breadth of the claims here appended.

What is claimed is:

1. Clip, particularly for installing lightweight and cellular channel members such as imitation wood beams against suspended ceilings comprising, in combination, a cross bar member, a latching bar member and means for pivotally mounting said cross bar member and said latching bar member generally centrally together wherein said cross bar member is constructed and arranged so that it may extend generally transversely of such channel members and have each end thereof secured on opposite sides of the channel and wherein said latching bar member is

constructed and arranged so that it may be rotated between a first position enabling the clip to be positioned relative to a rail member of such suspended ceiling and a second position firmly engaging such rail to secure such beams subjacent thereto.

2. Clip defined in claim 1 wherein said cross bar member comprises a central portion offset generally in a direction away from said latching bar portion for extending into the channel so that the end portions and associated beam may be positioned closely subjacent and generally flush with such suspended ceiling structure.

3. Clip defined in claim 2 wherein said latching bar member comprises a pair of generally upwardly extending bent end portions folded over to grippingly engage a rail flange of such suspended ceiling upon rotation of said latching bar member.

4. Clip defined in claim 3 wherein said folded end portions are of generally oppositely inwardly open ended U-shaped configuration.

5. Clip defined in claim 4 wherein said end portions are folded along generally parallel lines disposed at angles of approximately 45 degrees to the longitudinal axis of the bar.

6. Clip defined in claim 1 wherein said latching bar member comprises a pair of generally upwardly extending bent end portions folded over to grippingly engage a rail flange of such suspended ceiling upon rotation of said bar.

7. Clip defined in claim 6 wherein said folded end portions are of generally oppositely inwardly open ended U-shaped configuration.

8. Clip defined in claim 7 wherein said end portions are folded along generally parallel lines disposed at angles of approximately 45 degrees to the longitudinal axis of the bar.

9. Clips defined in claim 1 wherein said latching bar comprises a pair of end portions folded generally inwardly approximately 180 degrees along generally parallel lines disposed at angles of approximately 45 degrees to the longitudinal axis of the bar member.

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MARION PARSONS, JR., Primary Examiner

U.S. Cl. X.R.

29—469; 52—483