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3,387,872

IMITATION CEILING BEAM ATTACHMENT CLIP

Filed July 19, 1966

2 Sheets-Sheet 1

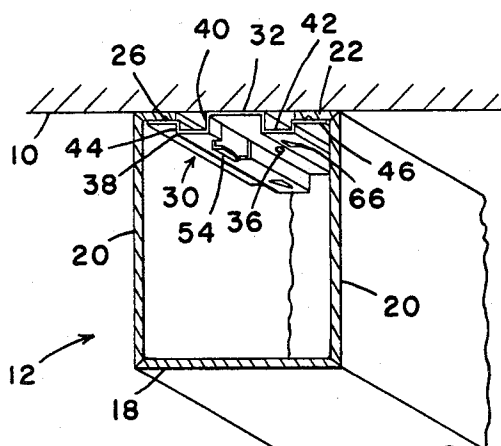


Fig. 1

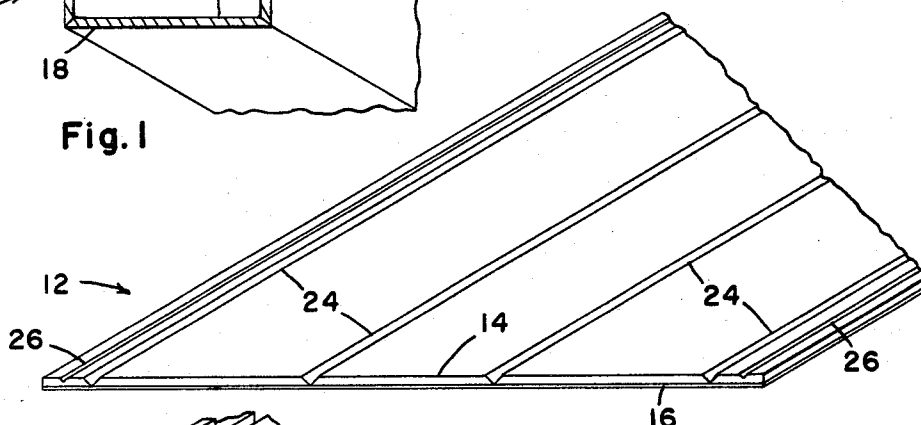


Fig. 2

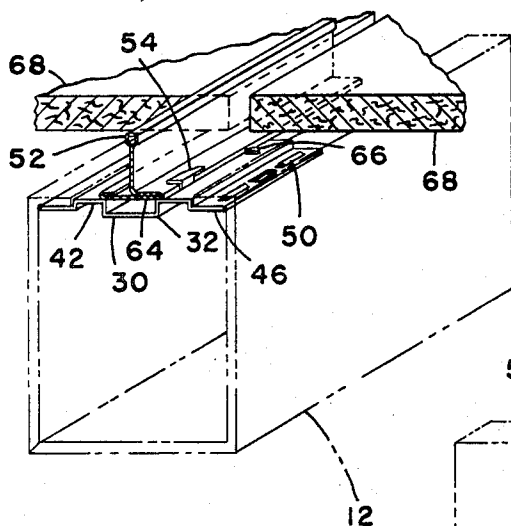


Fig. 4

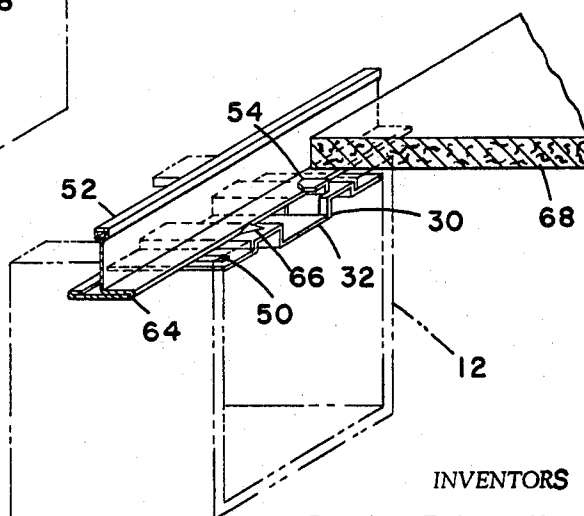


Fig. 5

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2 Sheets-Sheet 2

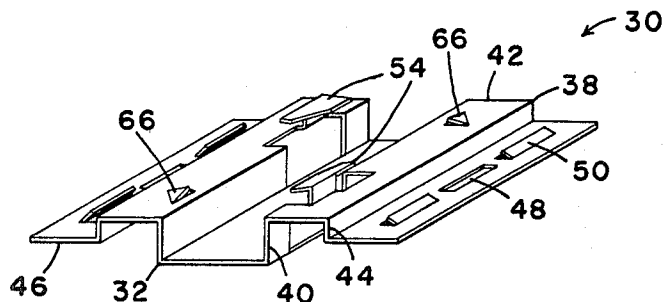


Fig. 3

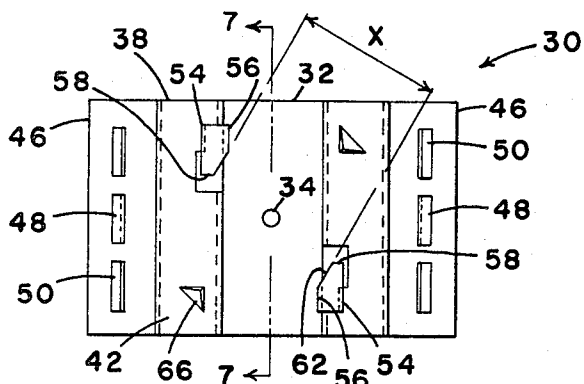


Fig. 6

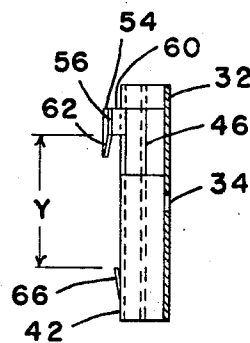


Fig. 7

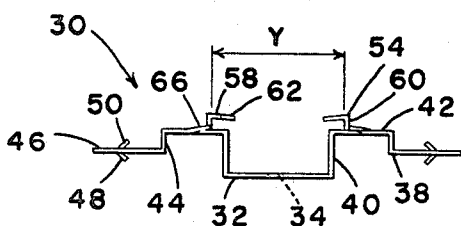


Fig. 8

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IMITATION CEILING BEAM ATTACHMENT CLIP

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ABSTRACT OF THE DISCLOSURE

A clip for attaching hollow imitation beams to either a plaster ceiling or by inverting, to an acoustical ceiling having an exposed grid system, formed from a substantially square sheet of metal folded to include portions in each of three parallel planes, the two opposite outermost, side flanges being in a plane between the other two planes and spaced from the other two planes a distance equal to the wall thickness of said hollow imitation beam; the portion between said two side flanges being partially in one of said other planes which part comprises a generally flat surface for affixation to a plaster ceiling and partially in the second of said other planes which part comprises means for affixation to an exposed grid system.

This invention relates to an improved means for attaching a foldable thin board, when folded to form a hollow imitation beam, to an existing wall such as sidewalls or ceilings.

Imitation beams, which are used primarily along ceilings but are equally adaptable to vertical walls, are presently commonly available in the form of metal or thin boards, folded or otherwise formed to provide a hollow, large elongate box having the appearance of a relatively large wooden beam. One form of imitation beam consists of a thin, high density wood fiber board having a plurality of parallel grooves extending lengthwise of the board, permitting the board to be shipped flat and then folded, along the grooves, on a job site to form the bottom and the two sides of an imitation beam and also having two inwardly directed top flanges, formed by folding the two board edges inward, which provide the means for attachment of the imitation beam to a wall or ceiling.

Attachment of the imitation beam by means involving the inwardly directed flanges is particularly desirable since the means are thus concealed by the imitation beam sides and bottom. Several ways for attaching these flanges to ceilings and walls have been developed, some adaptable to attachment to a plaster ceiling, others adaptable to attachment to the flanges of an exposed grid system of the type used for suspending ceiling tile in a suspended or drop-type ceiling. Previous methods for attachment have been found to lack the ease of application and the adaptability to the variety of potential conditions as is desirable in the preparation and sale of a complete packaged system to be used by, among others, the do-it-yourselfer.

It is an object of the present invention to provide an improved clip for use in attaching imitation beams to existing building structures.

It is a further object to provide such a clip which, in a single form, is adaptable to various of the most common forms of ceiling or wall structure.

It is a still further object to provide such a clip which is particularly adaptable to both a plaster ceiling and an acoustical ceiling with exposed grid T-members.

It is a still further object to provide such a clip which is adaptable to use on exposed grid T-members either parallel or perpendicular to the imitation beams.

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These and other objects and advantages of the invention will appear more fully when considered in connection with the following detailed description of the preferred embodiment of the invention and the accompanying drawing in which:

FIG. 1 is a perspective view of an imitation beam mounted by a novel clip onto a flat ceiling surface, in accordance with and embodying the present invention.

FIG. 2 is a perspective view of a short section of imitation ceiling beam, as shipped, prior to folding.

FIG. 3 is a perspective view of the imitation beam clip of FIG. 1, disposed with the opposite face thereof directed upwardly.

FIG. 4 is a perspective view of the clip of FIG. 3 mounting an imitation beam onto a main T of an exposed grid system, extending parallel and above the beam.

FIG. 5 is a perspective view similar to FIG. 4 with the novel clip attached to a main T extending perpendicular to the direction of the beam.

FIG. 6 is a plan view of the clip of FIG. 3.

FIG. 7 is a side sectional view of the clip of FIG. 6 taken on line 7-7.

FIG. 8 is an end view of the clip of FIG. 6.

Referring now to FIG. 1, a section of solid, monolithic ceiling 10 is shown, below which is attached thereto an imitation ceiling beam 12. In the preferred form, imitation beam 12 consists, as seen in FIG. 2, of an elongate strip of hardboard 14 with an outer facing layer of plastic sheet 16 having a wood grain design, which is folded, as in FIG. 1, to form a bottom 18, two sides 20, 20, and two inwardly directed top flanges 22, 22.

The form in which the imitation beam 12 is shipped is shown in FIG. 2, wherein the elongate strip of hardboard 14 is disposed flat with the plastic sheet 16 laminated thereto, and with a plurality of foldable 90° V-grooves 24, 24 extending lengthwise of hardboard 14, whereat folds are desired to form the hollow imitation beam shape. Two additional small grooves 26, 26 are disposed closely adjacent and parallel to each side edge of the elongate strip of hardboard 14, or, in other words, grooves 26 are disposed one in each of the two top flanges 22, 22.

The foldable grooves 24, 24 may extend entirely through hardboard 14, leaving the plastic sheet 16 to hold together the several sections of the imitation beam, or, alternatively, the grooves may be slightly less than the hardboard thickness but sufficient to permit folding without tearing the plastic sheet. When mounted on a ceiling or wall, imitation beam 12 appears to be a solid wooden beam. The ends of the imitation beams are disposed at the end of a ceiling or wall and the hollow and folded conditions of the product are hidden from view.

The imitation beam 12 is affixed to ceiling 10 by a novel three-way clip 30, which, in its single form, is adaptable for mounting in three distinctly different relationships to ceilings or walls. Briefly, three-way clip 30 is adaptable to mounting on a monolithic type wall or ceiling, such as in FIG. 1, on an exposed grid system T-member, in line with the T-member as shown in FIG. 4, and on an exposed grid system T-member perpendicular to the T-member as shown in FIG. 5. Preferably, the clip is formed from a single piece of electrogalvanized sheet steel of 0.030 inch thickness, as shown best in FIG. 3.

Considering the clip 30 structure, first as in FIG. 1, there is a central web 32 disposed uppermost, against ceiling 10, having a fastener hole 34, not seen in FIG. 1, through which is disposed a nail 36, affixing the clip 30 to ceiling 10. Two portions 38, 38 extending sideward from each side edge of central web 32 are generally symmetrical and include a first perpendicularly extending joining wall 40, a grid-attaching web 42 parallel to the central web 32, a second perpendicularly extending joining wall 44 parallel to a first joining wall 40 and an outer flange

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or brim 46 which is in a plane parallel to and half way between the planes of the central web 32 and the grid attaching web 42. The distance between the plane of outer brim 46 and the plane of either the central web 32 or the plane of the grid-attaching web 42 is substantially equal to the thickness of the hardboard 14, particularly the thickness at the top flanges 22, 22.

Although it is not shown in FIG. 1, each of the clip outer brims 46, 46 has at least one upwardly projecting convexity or lip 48 and at least one downwardly projecting convexity or lip 50, the upwardly and downwardly being taken in reference to the clip in the position shown in FIG. 1. The lip 48 and the lip 50 of one clip brim are spaced from the lip 48 and the lip 50 of the opposite clip brim a distance equal to the spacing desired between the small grooves 26, 26 in the top flanges 22, 22 of the mounted imitation beam 12. In the preferred form, lips 48 and lips 50 are formed such that when the clip is mounted, a beam top flange 22 may be forced between the clip brim 46 and the ceiling bending the clip brim slightly as the beam top flange 22 is forced in sufficiently that the lips 48, or lips 50, dependent on which are disposed directed upwardly, engage within the small groove 26 and are also formed such that they tend to resist the removal of the beam top flange, by their engagement within the small groove 26. In the form shown, the lips 48 and 50 are small sections of sheet material bent out of the clip brims to an angle of about 45°, having a short extent directed out of the plane of the clip brim and toward the center of the clip 30.

Clip 30 is provided with means for attachment to a main-T 52 of a ceiling grid system, when the clip is disposed upside-down from the mounted position for monolithic ceilings 10 of FIG. 1, and may be attached to the main-T 52 such that the imitation beam 12 will be centered along and below the main T or, alternatively, such that the imitation beam 12 will extend below and perpendicular to the main-T.

Referring to FIGS. 6, 7 and 8, these means for attachment to a main-T will be seen to consist of two identical cooperative tabs 54, 54. Viewing clip 30 face-on, as in FIG. 6, one tab 54 will be seen to be bent out of the upper half of the left grid-attaching web 42 and will be seen to have a side edge 56 extending out to the right and an end edge 58 extending downwardly. Symmetrically thereto, the other tab 54 will be seen to be bent out of the lower half of the right grid-attaching web 42 and will be seen to have a side edge 56 extending out to the left and an end edge 58 extending upwardly. The main portion of each tab 54 is in a plane substantially parallel to the plane of the grid-attaching web 42, the remaining portion being a perpendicularly extending leg 60 joining the tab to the grid-attaching web 42. The leg 60, of each tab 54, is disposed back away from the respective side edge 56 and the end edge 58. At the portion of tab 54 adjoining side edge 56 with end edge 58, the corner closest to the opposite respective tab 54, there is a diagonally cut corner edge 62. The corner edge 62 of each tab 54 is parallel to the other tab corner edge and, if extended, would form parallel lines a distance apart x equal to or slightly greater than the width y of the bottom ledges 64 of main-T 52.

Each leg 60, disposed back from side edges 56 and end edges 58, is disposed such that a main-T 52 may be disposed with its ledges between the two tabs 54 and the respective grid-attaching web 42, and when the main-T extends parallel to the side edge 56, the main-T ledges 64 of width y just touch the two opposite legs 60. Similarly, when the main-T is disposed perpendicular to side edge 56 and parallel to end edge 58, the ledges 64 again just touch each of the two opposite legs 60. Accordingly, a clip 30 may be attached to a main-T by passing the ledges 64 between the corner edges 62 while the corner edges 62 are parallel to the edges of the ledges 64, and thence turning the clip 30 relative to the main-T 52 in

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whichever direction it is desired that clip 30 be, relative to main-T 52, with the ledges 64 between tabs 54 and grid-attaching web 42. In one direction, the clip 30 can be turned until the main-T is parallel to side edge 56 and cannot be turned further. In the other direction of turning, the clip can be turned until the main-T is perpendicular to side edge 56 and cannot be turned further. These two relative positions would be the only relative positions that users would desire and thus an applicator may place the clip readily in either of two mounted positions very readily and accurately.

A locking prong 66 is formed in each grid-attaching web 42 at the opposite end thereof from the respective tab 54. Each prong 66 extends slightly out of the plane of its respective grid-attaching web 42 and each prong 66 is disposed a distance y from each of the legs 60 equal to the width of ledges 64, whereby when ledges 64 are turned to either parallel to side edge 56 or perpendicular to side edge 56, the main-T ledges 64 become locked between one locking prong 66 and one leg 60. If the ledges are disposed parallel to side edge 56, the locking occurs between a prong 66 on one grid-attaching web 42 and a leg 60 of the opposite grid-attaching web 42. If the main-T ledges are disposed perpendicular to side edge 56, the locking occurs between prong 66 and leg 60 of the same grid-attaching web 42.

In FIG. 4 there is shown a main-T 52 supporting two ceiling panels 68 on ledges 64. Imitation beam 12, indicated by broken lines, is affixed below main-T 52, parallel thereto, by means of clip 30. Clip 30 has its two grid-attaching webs 42 disposed uppermost, immediately below the panels 68, with tabs 54, disposed atop ledges 64. The outer brims 46 of clip 30 extend outward from the outermost width of the two grid-attaching webs 42, in a lower plane, and support the beam top flanges 22, 22. The brims 46 include what were referred to above as upwardly projecting lips 48 and downwardly projecting lips 50, which lips 48 project downwardly and lips 50 project upwardly when clip 30 is mounted with grid-attaching webs 42 upwardly, attached to ceiling grid main-T 52. Accordingly, lips 50, here projecting upwardly, engage the small grooves 26, 26 of the two respective beam top flanges 22, 22, whereby the top flanges are affixed between the clip brims 46 and the panels 68, or between the clip brims and ledges of cross T's (not shown) which are commonly employed.

The imitation beam 12 of FIG. 5 is affixed below main-T 52, perpendicular thereto, in a manner as described above as to FIG. 4 with only two exceptions, the directional relationship of the clip 30 to the main-T 52, and the fact that the top flanges 22, 22 are affixed between the clip brims 46 and the ledges 64 of the main-T.

The preferred construction of the clip 30 is that shown in FIGS. 6, 7 and 8. It is formed by a plurality of stamping and bending steps, performed on a strip of electro-galvanized sheet steel of about 0.030 inch thickness. The fastener hole 34 is stamped out. The lips 48 and 50 are the result of a short slit and a 45° bend. Locking prongs 66 are formed by two short perpendicular slits and a segment of sheet steel bent up at an angle of about 10°. Tabs 54 are formed by stamping out a substantial area of sheet steel around the portion to form the tab and the portion forming the tab is then bent up and over. The several main sections of the clip, the central web 32, grid-attaching webs 42 and brims 46, are formed into their respective planes by the folding up of the sheet steel.

Having completed a detailed disclosure of the preferred embodiment of our invention so that those skilled in the art may practice the same, we contemplate that variations may be made without departing from the essence of the invention or the scope of the appended claims.

What is claimed is:

1. An attachment clip for hollow imitation beams of folded thin board, said clip being formed of a substantially rigid, uniformly thin, folded sheet material and

comprising wall attachment means primarily in a first plane for attachment to a substantially flat wall surface, ceiling grid attachment means primarily in a second plane parallel to said first plane for abutting and attaching to a suspended ceiling exposed grid system, a pair of opposed, outwardly extending flanges in a third plane parallel to said first and second planes, said third plane being between said first and second planes and spaced from each of said first and second planes a distance substantially equal to the thickness of said thin board, means connecting said wall attachment means, said ceiling grid attachment means and said pair of flanges, said flanges each having raised means on both faces for grasping an edge of thin board of an imitation beam, whereby said raised means on one face engages an edge of thin board between itself and a flat wall surface when said wall attachment means is attached to a flat wall surface and said raised means on an opposite face engages an edge of thin board between itself and a portion of a suspended ceiling when said ceiling grid attachment means is attached to an exposed grid system.

2. An attachment clip as defined in claim 1, wherein said wall attachment means comprises essentially a flat portion of said rigid sheet material having a fastener hole therein.

3. An attachment clip as defined in claim 1, wherein said ceiling grid attachment means comprises essentially flat portions in said second plane, a pair of diagonally opposed tabs extending outward of said second plane and toward the opposite said tab, and a pair of raised locking prongs disposed diagonally with respect one to the other and disposed at perpendicular diagonally opposed relation relative to the diagonal disposition of said tabs.

4. An attachment clip as defined in claim 3 wherein said tabs and locking prongs are arranged and constructed such that an exposed grid T-member flanged bottom may be inserted between said tabs when said T-member extends diagonally in the direction of said locking prongs but said T-member is held by said tabs when turned in either direction from said diagonal direction.

5. An attachment clip as defined in claim 4 wherein said tabs include a leg adjacent said second plane, said leg of each said tab being spaced from each locking prong a distance equal the width of said exposed grid T-member flanged bottom, whereby said T-member may be turned to a locked position between said tab legs and said locking prongs in either of two relatively perpendicular dispositions.

6. An attachment clip as defined in claim 1, wherein said ceiling grid attachment means comprises essentially two opposed portions each in said second plane and each including one tab and one locking prong extending out of said second plane, said two portions being on respective opposite sides of said wall attachment means in said first plane.

7. An attachment clip as defined in claim 6, wherein each of said two portions of said ceiling grid attachment means has affixed thereto and extending outwardly therefrom one of said pair of flanges in said third plane.

8. An attachment clip as defined in claim 1 wherein said clip is formed from a single sheet of metal including a flat wall attachment portion in said first plane, a perpendicularly extending joining wall at each of two opposite sides adjoining said wall attachment portion to two ceiling grid attachment portions in said second plane, a pair of second perpendicularly extending joining walls at the outer sides of said ceiling grid attachment portions each adjoining one of said ceiling grid attachment portions to one of said outwardly extending flanges in said third plane.

9. An attachment clip as defined in claim 8 wherein said ceiling grid attachment means include a pair of diagonally opposed tabs each formed by portions cut from said sheet metal and bent outward from said second plane and toward the opposite said tab.

10. In combination, a wall, and a hollow imitation beam of folded thin board, the two opposed side edges of said thin board being held firmly against said wall by an attachment clip as defined in claim 1.

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