# United States Patent [19]

**Mattix**

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[54] **METHOD OF APPLYING A PANEL SYSTEM UTILIZING A CONCEALED CORNER LOCKING CLIP**


[76] Inventor: **Jacob M. Mattix,** 341 Hennessy, New Orleans, La. 70119



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**Related U.S. Application Data**

[62] Division of Ser. No. 61,194, Aug. 5, 1970, Pat. No. 3,688,459.

[52] **U.S. Cl.** ..... **52/747,** 52/489

[51] **Int. Cl.** ..... **E04b 1/40**

[58] **Field of Search** ..... 52/747, 748, 745, 741, 34, 52/35, 285, 489



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*Primary Examiner*—Price C. Faw, Jr.

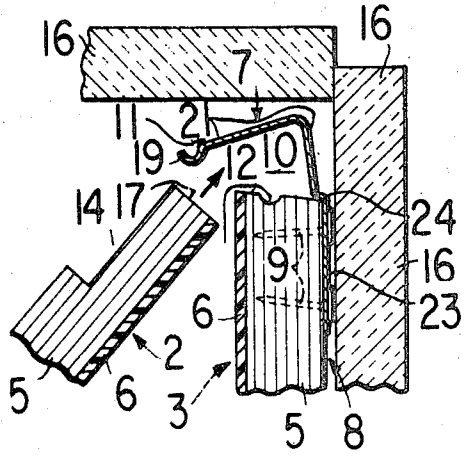
*Attorney, Agent, or Firm*—C. Emmett Pugh



[57] **ABSTRACT**

A concealed corner lock clip system for installing and securing sheet material such as laminated plastic wallboards, plywood and the like for finishing off bathtub and/or shower walls and the like; the locking system includes a vertically extending resilient clip attached to one wallboard and into which the other, adjacent wallboard can be easily and quickly inserted and locked into place; the clip is unobstructive and compact and is completely invisible after installation.


**2 Claims, 5 Drawing Figures**



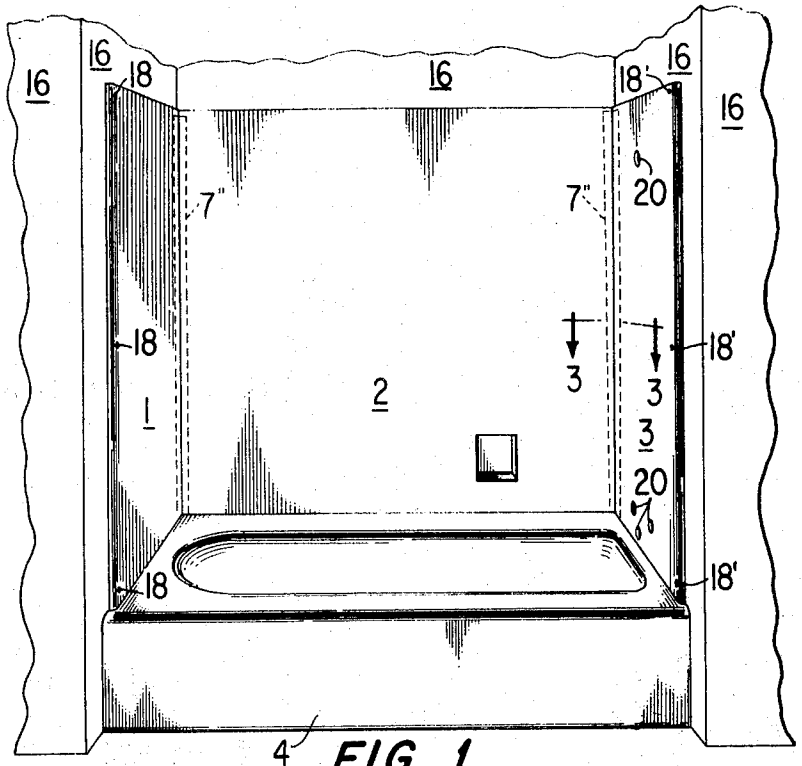



FIG. 1

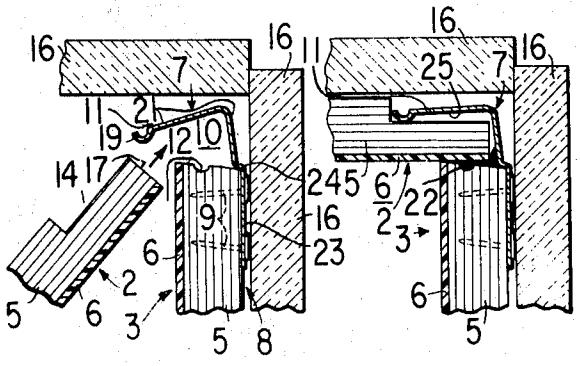



FIG. 2




FIG. 3

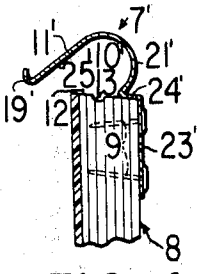



FIG. 4

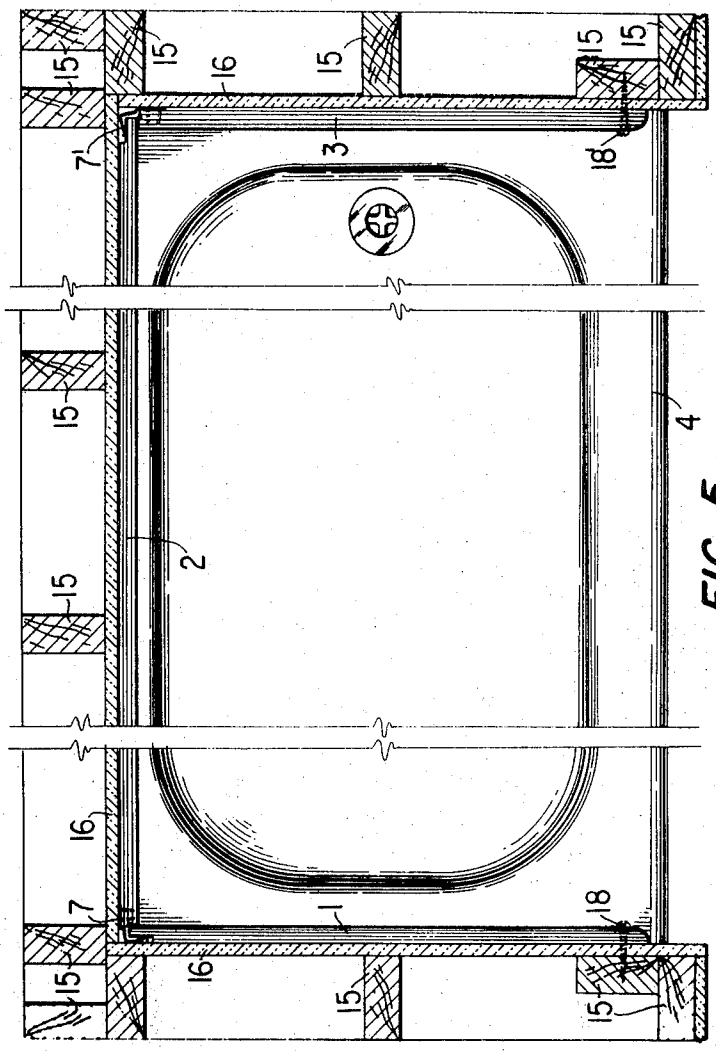



FIG. 5

# METHOD OF APPLYING A PANEL SYSTEM UTILIZING A CONCEALED CORNER LOCKING CLIP

This is a division of application Ser. No. 61,194, filed Aug. 5, 1970 entitled "CONCEALED CORNER LOCK CLIP SYSTEM" issued as U.S. Pat. No. 3,688,459 on Sept. 5, 1972.

## BACKGROUND OF THE INVENTION

Heretofore, it has often been the practice to finish off the walls surrounding or abutting tub and shower fixtures by means of ceramic tiles. However, such finishing jobs with its requisite grouting are very time-consuming. Moreover, the finished ceramic tile walls are difficult to clean because of the presence of the mortar joints.

Although others of course have taught the use of plastic laminated wallboards and the like for finishing of shower and bathtub installations in place of the ceramic tiles and have taught various means of installing the wallboards and fixing them in place, all such prior art systems have various distinct disadvantages such as clumsiness, bulk, unattractiveness, visibility, expense and irreversibility or require some degree of skill, have leakage problems or are unduly time consuming or expensive in their application.

Examples of such prior art systems are the U.S. Pat. Nos. to Anglinetti, 3,420,021; Wilhoyte, 2,218,273; McBride, 3,277,617; Hobbs, 2,677,268; Sperry, 2,219,714; Gregoire, 3,376,679; and Schmitt, 1,672,914.

In contradistinction, the present invention provides a system of attaching and locking together angularly intersecting wallboards, especially those intersecting at ninety degrees, particularly in such applications as wallboards for bathtub and shower installations, which is simply, easily and quickly utilized. The resulting installation is easily reversible, i.e., can be readily undone, does not harm the wallboard, does not require any critical alignment and takes no real skill to assemble. The joint provided by the installation is virtually leakproof and attractive, the clip being used in the system adding no real over-all bulk to the installation and indeed being completely invisible after installation.

Other advantages, achievements and objects of the present invention will become apparent in considering the preferred embodiment described below.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a bathtub installation wherein the wallboards have been installed and locked into place by means of the system of the present invention.

FIG. 2 is a cross-sectional view showing the mating of the wallboards during installation as one wallboard panel is inserted for installation next to the other.

FIG. 3 is similar to FIG. 2 and is a cross-sectional view along section lines 3—3 of FIG. 1 showing the clip of the system of the present invention locking one wallboard to the other, after the two have been installed.

FIG. 4, similar to FIGS. 2 and 3, is a cross-sectional view showing a second embodiment of the clip of the present invention.

FIG. 5 is a top, plan view of the total installation.



## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in FIGS. 1 and 5, the system of the present invention has particular application to the providing of suitable wallboard or panel installations for bathtub and shower base enclosures and the like.

As is standard, there is provided three sheets 1, 2 and 3 of wallboard enclosing three sides of a bathtub installation 4. The three panels or sheets 1, 2 & 3 that comprise the outer walls above the tub 4 can be, for example, made up of ⅝ exterior plywood 5 to which either 0.050 or 1/32 laminated plastic 6 is adhered by contact cement, a composite wallboard which has been found quite satisfactory in this application. However, of course, the present invention can be applied to many different kinds os substantial sheet or panel materials.

One of each pair of panels, for example panel 3, to be joined together has along one side edge a resilient clip or corner lock strip 7 attached at one end to the back side 8 of the panel by means of screws or nails 9 or some other fastening means.

The clip first extends out by means of a first portion 21 in a direction generally parallel to the front surface 6 of the wallboard for a certain distance dependent upon the thickness of the edge of the panel which is to be placed in the clip. As noted in FIG. 2, the clip forms an angular cul-de-sac 10 with the extremity of the clip 7 forming a second portion 11 directed inwardly back toward and past the front 6 of the panel to which it is attached. As seen in the illustration (FIG. 2), the second portion extends back inwardly a substantial distance back toward and angularly toward the front surface of the panel, thereby with the panel forming the cul-de-sac 10.

The clip 7 can extend down along the entire side edge of the panel, as a single, integral clip as indicated by the phantom lines 7'' in FIG. 1, or there can be provided a series of similar clips down along the edge. The clip is resilient or springy and can be made of, for example, 24 or 26 gauge galvanized sheet metal, which has been found to be satisfactory. Other materials, for example, stainless steel or plastic, could be used, as long as the requisite amount of strength, durability and resiliency is maintained.

Rather than the straight line cross-sectional configuration of the clip 7 shown in FIGS. 2 and 3, other configurations are possible. A second clip 7', having a rolled or rounded configuration is shown in FIG. 4. (The analogous elements of clip 7' to clip 7 are indicated by the same numbers except primed.)

The side edge surface 12 of the panel to which the clip 7 is attached has a slight relief bevel, a 5° bevel usually being adequate. Also included in and extending down along the side edge surface 12 is a sealant groove 13.

A rabbet or rectangular cut-out 14 is provided in the adjacent panel (for example panel 2) along the side edge surface which is to be juxtaposed to the first panel. The rabbet 14, as will be seen, serves as a mating or receiving area for the extremity arm 11 of the clip 7. The presence of the rabbet or cut-out allows for a more positive mating and locking action with the clip 7 and also results in a finished structure having no increased bulk in spite of the presence of the clip structure 7 by allowing the back side of the panel to lie flat or flush against the support structure (note FIG. 3).

The clips 7 with the bevel surfaces 12 and the grooves 13 as well as the rabbet 14 are provided on the panels during manufacture or in the shop where they can be done on a production basis. There is thus no make-up work necessary on site, leaving only a simple installation job.

As best seen in FIGS. 2 and 3, the system includes the following easy and straightforward steps for installation of the tub or shower enclosure in the field.

The initial panel (for example panel 3) with the clip thereon is first attached by sealant or other fixing means such as screws 18' to the basic support structure of the building. As is standard, sutds 15 to which gypsum board (e.g. that sold under the trademark "Sheetrock") 16 or other such material is attached is provided for the basic support structure (note FIG. 5). As shown in FIG. 2, the cul-de-sac portion 10 of the clip is thus exposed. Sealant material 22 is then placed along the beveled surface 12 and in the groove 13.

The leading edge 17 of the other panel (for example the right hand portion of panel 2) of the combination is then angularly inserted, i.e., at an acute angle to the surface 6 of the initial panel, into the cul-de-sac, is designed to have substantially the same dimension, i.e. be of the same order of magnitude, as the thickness of the panel to be inserted to allow for easy insertion but still having sufficient interaction between the two. The panel is then swung (note curved directional arrow) against the resilient force of the inwardly extending arm 11 of the clip 7 until it is flat against the sheetrock 16, as shown in FIG. 3. The panel by the resilient force of the clip is thus locked into place at its intersecting edge. A rounded dimple 19 is provided at the leading edge of the extension arm 11 of the clip 7 so as to provide a smooth rounded mating surface with the panel as it is rotated against the clip. The panel after being completely rotated is then fastened to its basic support structure at its opposite edge by some suitable means.

When the sealant material 22 at the intersection of the two panels is applied, a tight, water-proof joint results. The slight bevel in the surface 12 and the groove 13 help to provide a good cavity for holding the sealant material and producing a strong bond.

One panel is thus joined and locked to the other by a simple and quick one-two method of insertion and rotation. Moreover, the flexibility and resiliency of the clip also allows greater tolerance in the placing of the panels and tends to equalize any tensions which may arise in the enclosure installation.

In the particular installation shown in FIGS. 1 & 4, the panel 3 is the first to be attached to the basic support structure. This is because the cut-outs 20 must be aligned with the faucets and controls of the already installed water pipe system. Panel 2 is then angularly inserted into the clip 7 of panel 3 and rotated against the back wall and at least temporarily fastened. Finally panel 1 is then angularly inserted into the clip 7 of panel 2, rotated and fastened by means of screws 18, providing the full basic enclosure. Just a temporary fastening of panel 2 at its left side, as for example by blocking or physically holding by a helper or apprentice, is sufficient because once panel 1 is inserted and permanently affixed to the support structure, panel 2 is locked into place by the actions of panels 1 and 3.

If the alignment of either side panel were not the most basic desirata, the back or middle panel could then be provided with clips at both of its edges and each side panel provided with the rabbet or cut-out. The middle panel would then be the first to be installed and the side panels thereafter.

The present method thus results in a simple and trouble-free method of installing several pieces of wallboard to form the wall around, for example, a bathtub or shower base. It also provides a system which can be reversed or undone, if desired, by merely unscrewing the screws 18 and 18' and taking off the wallboards, no real desctruction or damage being caused to the wallboards in the process.

To finish off the installation, sealant material is provided along all the exposed edges of the paneling. Finally standard wainscoating or cover strips can be added or the panels left unfinished and painted. The panels are then cleaned for the totally finished job.

The builder is thus provided with a system which is easier and simpler to install and very economical besides. The resulting installation provides the home owner with a water-proof wall covering, which is very easy to clean, more sanitary, very attractive and virtually carefree.

Because many varying and different embodiments may be made within the scope of the inventive concept herein taught, and because many modifications may be made in the embodiment herein detailed in accordance with the description requirements of the law, it is to be understood that the details herein are to be interpreted as illustrative and not in a limited sense.

What is claimed as invention is:

1. A method of installing two panels of sheet material which are to angularly intersect on a basic support structure comprising the steps of:

a. preliminarily providing a resilient clip along one edge of the first panel extending out away from the edge of said first panel and then back towards the front surface of said first panel, thereby forming a cul-de-sac with the edge surface of said first panel;

b. mounting said first panel on the basic support structure and affixing it thereto;

c. angularly inserting the edge of the second panel into said cul-de-sac and rotating said second panel against the resilient force of said clip until said second panel is in its desired location, thereby resiliently locking the inserted edge of said second panel into said clip and the edge surface of said first panel; and

d. affixing said second panel to the basic support structure.

2. The method of claim 1 wherein there is further provided the preliminary step of providing a cut-out portion along the edge of said second panel to be inserted into said cul-de-sac for mating with the outer, opening extension of said clip as the second panel is inserted and rotated.

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