Jan. 31, 1967 F. R. ASHBY ETAL 3,300,924

PANEL ASSEMBLY AND CONCEALED PANEL FASTENER

Filed Aug. 21, 1963 2 Sheets-Sheet 1

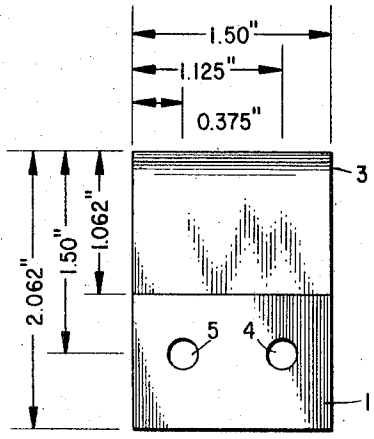


FIG. 1b

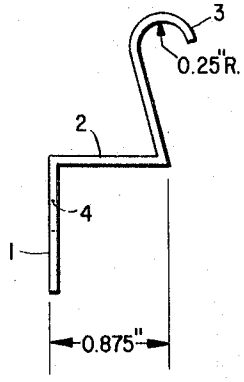
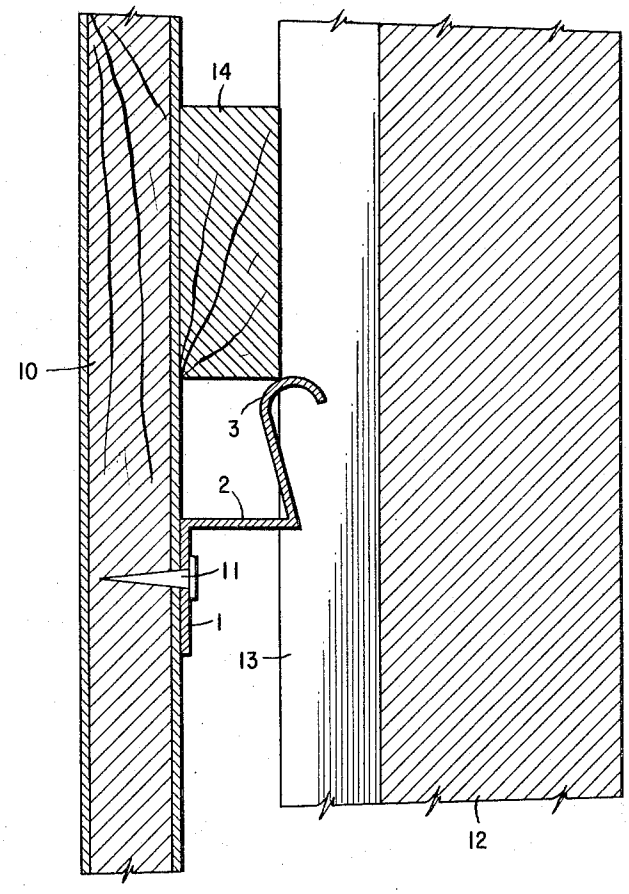


FIG. 1a



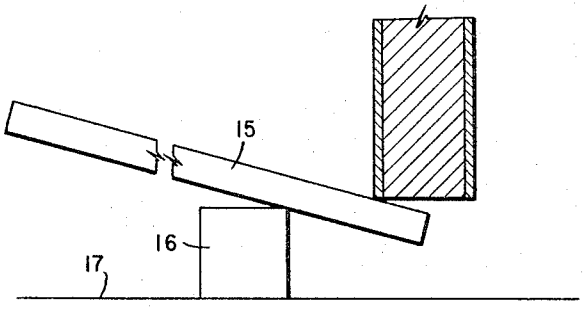


FIG. 2

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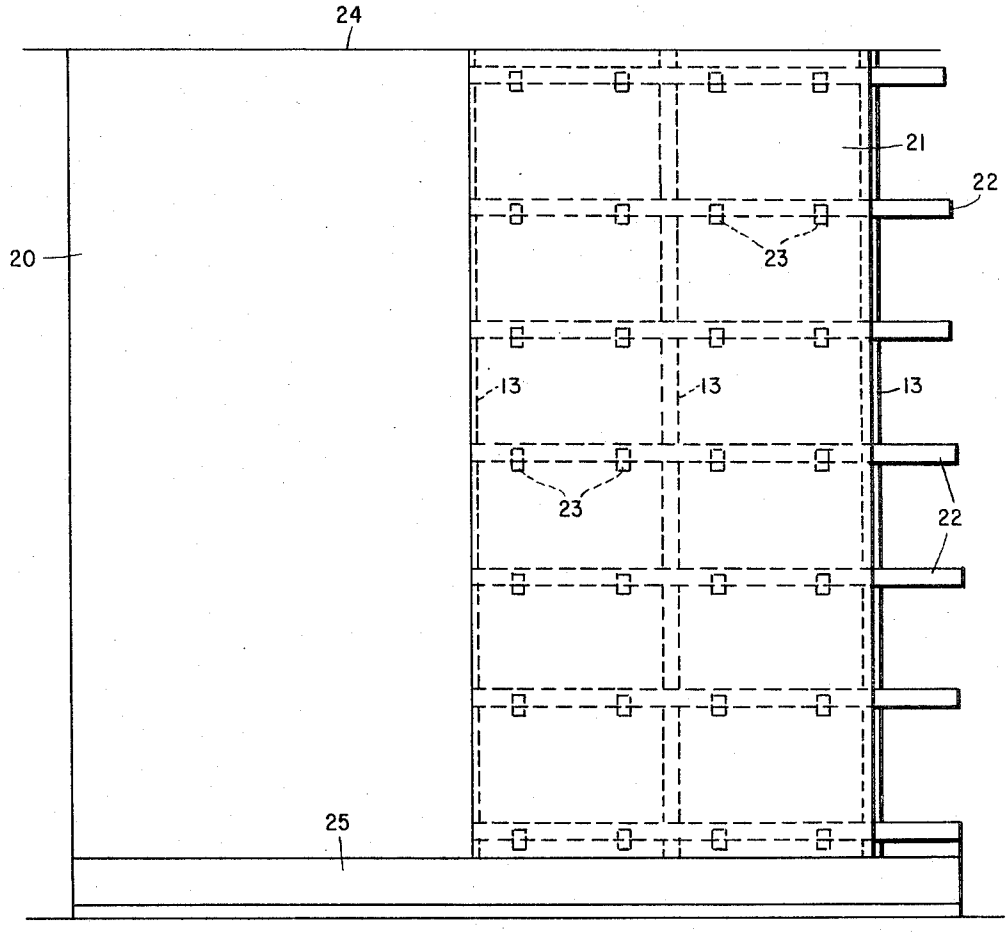


FIG. 3

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PANEL ASSEMBLY AND CONCEALED PANEL FASTENER

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1 Claim. (Cl. 52—265)

The present invention is concerned with a unique and novel hook type fastener and a panel combination of the same. The invention is more particularly concerned with a plywood-hook fastener combination whereby plywood panels or equivalent units may be readily butt jointed and with ease mounted to a wall without showing the means by which the same are mounted. The invention is especially concerned with a plywood panel-concealed fastener combination which is used in further combination with a particular style of wall furring. In accordance with one specific adaptation of the present invention, horizontal furring is positioned a predetermined distance from the wall, preferably by means of being nailed or affixed to vertical furring elements in contact with the wall. In accordance with a second specific adaptation of the invention, vertical furring is positioned a predetermined distance from the wall, preferably by means of being nailed or affixed to horizontal furring elements in contact with the wall. Then the panel-hook fastener combination of the present invention is readily affixed to the offset horizontal or offset vertical furring elements in a manner as hereinafter described.

It is well known in the art and in the building trades of the desirability of affixing panels such as decorative panels and architectural grade panels to walls without the necessity of face nailing these panels or of having other visible affixing means. This is desirable in order to enhance the beauty, the warmth and the overall desirability of the decorative paneled wall. Furthermore, if the panel is factory finished, the face nailing or face attaching destroys the uniform film on the face, or if the panel is not factory finished, the application of liquid finishes thereafter over face nailing is not uniformly pleasing to the eye.

In order to attain this desired end of concealed and effective attachment of panels to a wall, various types of concealed clips and affixing means have been devised. For example, one type of fastener heretofore known in the art is a clip unit which has prongs or ears which extend into the side of the panel. These prongs are affixed to the base part of the clip, which base is then nailed to the stud. The next panel on the butting edge to the preceding panel has attached thereto a lip or clip which extends underneath the already affixed panel and the units are thus butt jointed. While clips or affixing means of this described type are entirely suitable, they do have the disadvantage in that once they are nailed to the stud it is relatively difficult to adjust one panel with respect to another panel. On the other hand, the clip or panel-clip combination of the present invention used in conjunction with offset horizontal or offset vertical studding in effect gives a "floating joint" which permits the installer a reasonable allowance for error and adjustment since the panel need only be raised or moved a reasonable distance with respect to the adjacent panel.

The present invention may be readily understood by reference to the drawings illustrating some modifications and adaptations of the same. FIGURES 1*a* and 1*b* illustrate in some detail the fastener or clip per se. FIGURE 2 illustrates the panel-clip combination used in conjunction with offset horizontal furring strips. This figure by rotation of 90° will also illustrate the panel-clip combination used in conjunction with offset vertical furring strips. FIGURE 3 is a front view of butt jointed panels used in conjunction with a plurality of offset horizontal furring strips.

Referring specifically to FIGURE 1, 1*a* shows a side view of the clip fastener of the present invention. The clip consists of a substantially vertical section **1**, a substantially horizontal section **2**, and a hook section **3**. Extending through vertical section **1** are a plurality of holes or apertures **5** and **4**. Screws or nails are adapted to pass through these holes to affix the fastener or hook element to the panel or other flat materials which are to be mounted on a wall. FIGURE 1*b* is a front view of the fastener of the present invention illustrated in 1*a*. The exact configuration and measurements of the fastener may be varied appreciably depending upon the type of material to be wall mounted and the thickness and weight of the panel. A set of desirable measurements are illustrated in FIGURES 1*a* and 1*b*. The clips may be of any satisfactory metal, such as steel, and may be suitably plated to withstand wear and rust, such as with cadmium or other plating material.

FIGURE 2 shows the panel-fastener combination and its method of mounting the same to offset horizontal furring strips which are mounted to other vertical furring strips which are directly attached to an existing wall. Similar elements as described in FIGURES 1*a* and 1*b* are similarly numbered. The flat vertical section **1** of the clip is affixed to panel **10** by means of screws or nails **11**. Attached to existing wall **12** are vertical furring elements **13** supporting offset horizontal furring elements **14**. Thus, the panel-fastener combination of the present invention may be raised up and firmly and permanently positioned in place by a lever **15** supported on a block **16** which, in turn, is supported on floor **17**. As the panel is moved upwardly, hook **3** is forced outwardly about offset horizontal strip **14** and is moved into position about the back of furring strip **14**.

As pointed out heretofore, this firmly and permanently affixes the panel to the offset horizontal furring strip or strips, yet secures a "floating joint" permitting ready adjustment of one panel with respect to another panel. This makes possible a very close butted joint between the panels which greatly enhances the beauty of the final panel wall. Furthermore, this adjustment is easily accomplished, as, for example, by means of a block and hammer.

Another adaptation of the invention is illustrated by rotating FIGURE 2, 90°. This presents a top view of the assembly rather than a side view as hereinbefore described with respect to FIGURE 2. Horizontal furring strips **13** are directly affixed to wall **12**. Offset vertical furring strips **14** are then attached to horizontal furring strips **13**. Panel **10** in combination with the fastener assembly of the present invention is then firmly positioned on the vertical strip **14** by imparting to panel **10** a lateral motion whereby hook **13** will move laterally around the back of strip **14** in a manner to firmly and permanently affix panel **10** to wall **12** in the manner as illustrated.

Referring specifically to FIGURE 3, two panels **20** and **21** are butt jointed and mounted to offset horizontal furring strips **22** by means of a plurality of clips **23** which clips position themselves around the back edge of the furring strips as the panel is raised as described. The panels are pushed or moved upwardly against the ceiling **24** providing for a base strip or baseboard **25**.

Again referring to FIGURE 3, if offset vertical furring is utilized with the panel-hook combination of the present invention, then furring strips **22** would be attached directly to the wall. Vertical furring strips **13** in turn are attached to horizontal furring strips **22**, thus providing an open area between themselves and the wall. Hooks

23 would be affixed parallel to strips 22 so as to seat behind strips 13 when the panel is given lateral movement.

Thus, the present invention is concerned with a hook or concealed fastener-panel assembly combination which permits panels to be readily mounted on furring strips which are positioned from ¼" to 2 or 3" away from the wall itself. The hook or clasp functions to move about the back edge of the offset horizontal or offset vertical furring strips as the panel is moved upwardly, downwardly or laterally in either direction.

While the preferred assembly for mounting to a wall is a wood panel such as a plywood panel-fastener combination, it is to be understood that the same assembly can be utilized using other types of panels as, for example, a plaster board, asbestos board, and other types of materials for mounting to walls. The plywood panels may be of any size or dimensions such as, for example, 4 x 8' panels having thicknesses varying from ⅜" to 1" and more. It is also to be understood that the furring strips may comprise wood, metal or other suitable materials.

As mentioned, under certain conditions, it may be desirable to, in effect, reverse the hook or fastener with respect to a panel so as to have the hook come down and seat over the top of the horizontal furring strips. Under these conditions, a dentil or equivalent means is used at the ceiling so as to secure a finished wall.

For installation, it is obvious that if the wall is furred out horizontally or vertically as described, it is preferred that a gap of at least ½" be provided between the existing wall and back of the offset furring strip. As pointed out heretofore, this gap may be secured or provided by furring vertically and then horizontally or first horizontally and then vertically. The panel as, for example, a ¾" panel is put face downwardly on a work table or other supporting means. The fasteners are then located on the back of the panel in accordance with the furring schedule or pattern. Normally the nonoffset furring strips are positioned from 16 to 20" apart and the offset strips are positioned anywhere from 16 to 4' apart. In many instances, it may be desirable to only provide an upper offset horizontal and lower offset horizontal furring strips. Under these conditions, the fasteners are positioned with the rounded part pointing toward the top of the panel. If the panel is a ¾" panel, the fasteners are secured to the panel preferably with a ¾" flathead screw.

If horizontal offset strips are used, the lever is placed under the panel and the panel forced upwardly until the panel is tight to the ceiling. At this point in construction, it may be desirable to toenail the bottom edge of the panel to support the panel until the base strip is applied.

Thus, the panel-clip combination of the present invention provides a "floating joint," thus insuring a tight butt joint between the respective panels. Any gap in the joint can be readily closed by forcing the panel sideways with a suitable block and hammer. The "floating joint" gives the installer a reasonable allowance for error since the panel need only be raised within a reasonable distance to the adjacent panel and then moved as described hereinbefore. The panels can be removed without damage and may be readily reinstalled on the same furring without the necessity of using new fasteners or clips. The panels can also be moved to a new location and installed over new furring.

While the present invention has been described utilizing the panel-fastener combination in conjunction with or in combination with a particular type of furring technique

for use on a blank wall, it is within the concept of the present invention to use the panel-clip combination with respect to new construction wherein open studding is available. Generally, vertical studding is reinforced by horizontal cross-studding so as to impart greater structural strength. Areas can be provided between the cross-studding and the outer wall of the structure so as to permit the panel-clip combination to be installed directly on the upright studding. The clip would position itself in the open area behind the cross-studding and the outer wall. The installation of panels with a side lever or lateral motion as well as the floor lever makes the system extremely flexible. Panels may be installed around door bucks, cutouts, windows and the like with lateral level and, if desired, could be raised with a floor or ceiling lever. In many applications the architectural panels are installed over masonry walls. The masonry walls function as a "fire stop" construction with metal or wood furring embedded in the masonry.

The present assembly eliminates the need for affixing panels through the face and thus marring its appearance. The assembly of the present invention is also far superior to other complicated fastening systems or gluing techniques. Thus, the present invention is concerned with the installation of architectural grade panels over a straight run or over constructions including door openings, wall cutouts, windows and the like.

What is claimed is:

The combination of decorative plywood panel wall assembly, foundation and ceiling, which comprises a first set of spaced furring members attached directly to said foundation wall, a second set of horizontal offset furring members attached to said first set of furring members in perpendicular relation thereto, a relatively flat panel-fastener combination adapted to be attached to said second set of furring members on upward movement which comprises a relatively flat decorative wood panel having rigidly attached thereto a fastener, said fastener consisting of a first flat section rigidly attached to said flat panel, a second flat section substantially perpendicular to said first flat section and the length of which is approximately equal to the thickness of said second set of furring members, and a third flexible hook section extending substantially perpendicularly from said second flat section and opened upwardly, said flexible hook section being bent inwardly and curving outwardly at its end and positioned behind said second set of furring members; the fastener frictionally secured thereto and providing the sole means of supporting said panel, said decorative plywood panel rigidly attached to said foundation wall and abutting the ceiling.

References Cited by the Examiner

UNITED STATES PATENTS

1,364,357	1/1921	Dorman	52—489
1,980,900	11/1934	Bemis	52—285
2,082,314	6/1937	Venzie	52—506
2,708,292	5/1955	Budai	287—2092.6 X
2,796,158	6/1957	Miles et al.	52—489
2,833,001	5/1958	Montefalco	52—403
2,858,916	11/1958	Josephs	52—90
2,962,252	11/1960	Frank	248—226.5
3,103,708	9/1963	Pomeroy et al.	52—284
3,173,178	3/1965	Kumburis	52—511

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