Nov. 23, 1971 C. J. DE LANGE 3,621,635

PANEL WALL

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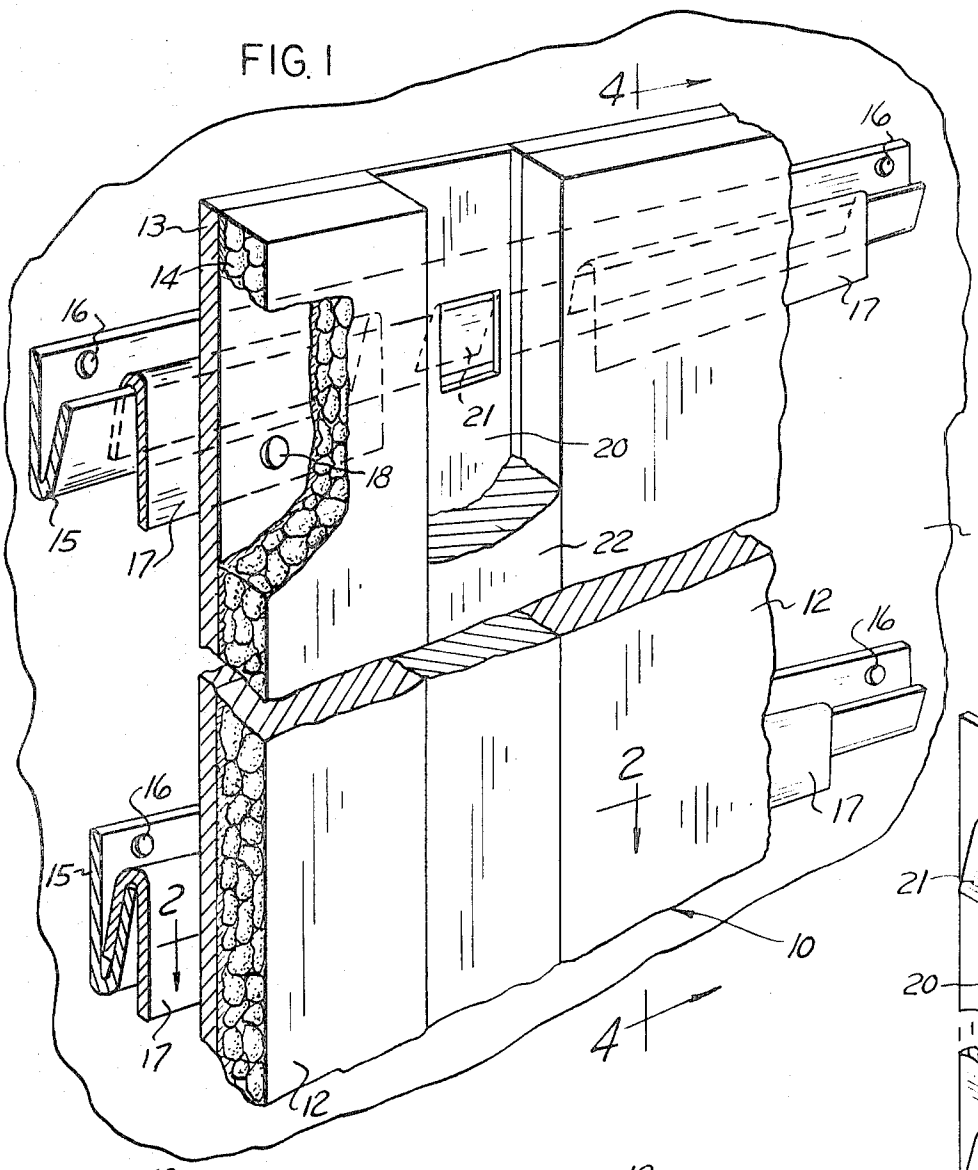
FIG. 1



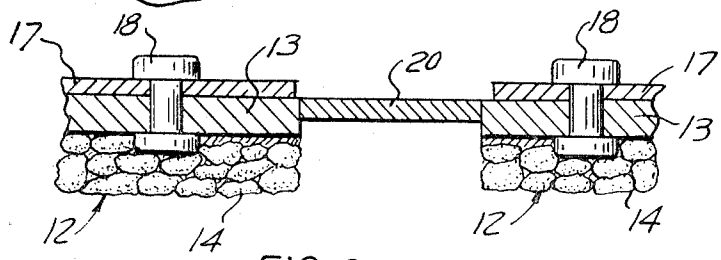


FIG. 2

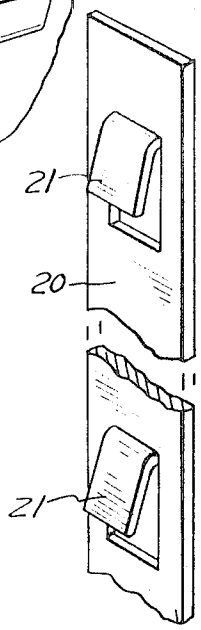


FIG. 3

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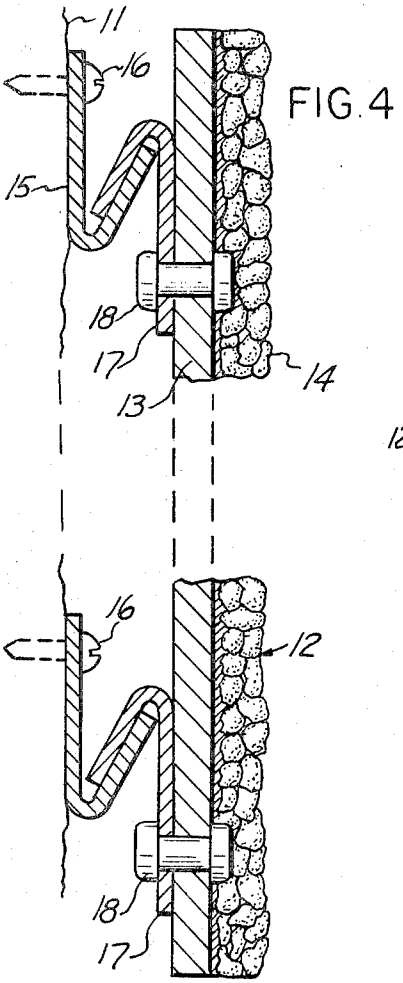

FIG. 4

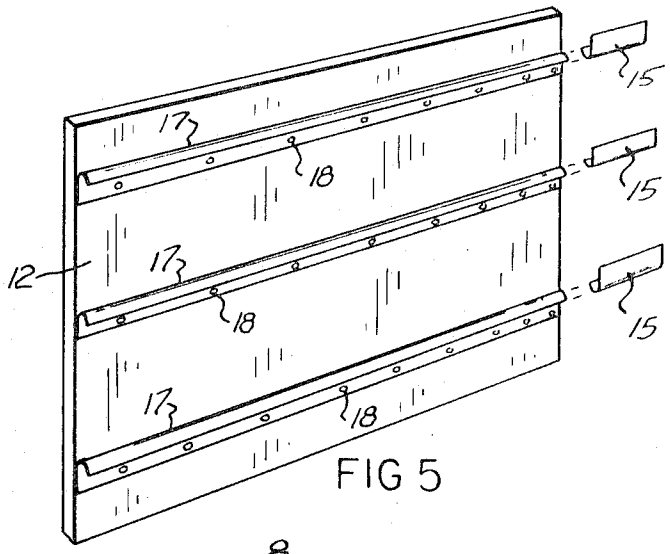

FIG 5

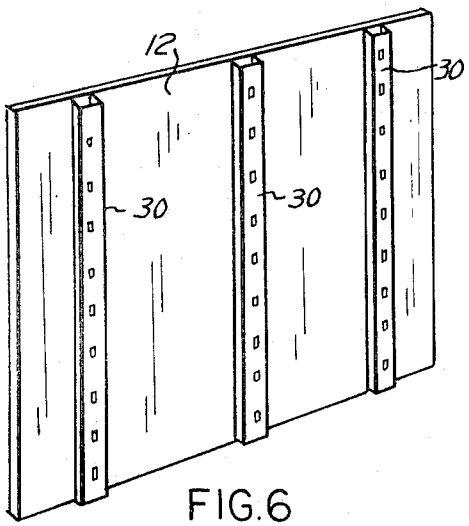

FIG. 6

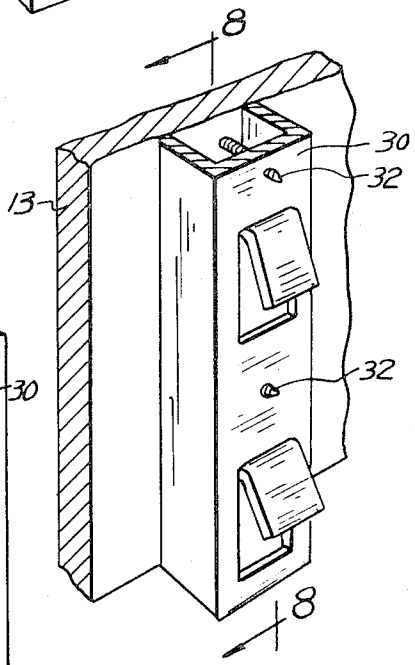

FIG. 7

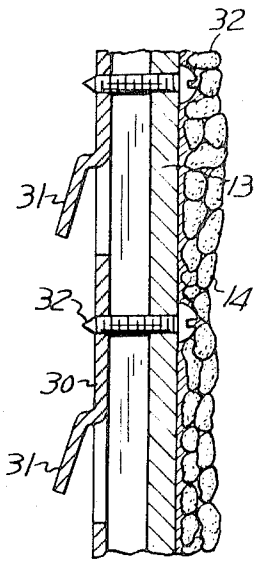

FIG. 8

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PANEL WALL

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Int. Cl. E04b 2/88

U.S. Cl. 52—235 5 Claims

ABSTRACT OF THE DISCLOSURE

A monolithic aggregate textured type wall formed of large panels made of thin base sheets covered with a bonded textured coating, with the panels arranged edge to edge upon a support surface and mounted thereon by means of panel mounting strips having downwardly extending flanges interengaged with horizontally arranged J-shaped strips fastened to the support surface; the panel mounting strips being secured to the base sheets only by mechanical fasteners before coating the sheets, wherein the fasteners are covered and concealed by the coating.

BACKGROUND OF INVENTION

One method for finishing or for modernizing an already finished exterior or interior decorative wall is to apply to the wall surface a coating formed of small stones or aggregates, such as marble chips and the like, bonded together and to the wall surface with a suitable resin binder. In the past, such coatings, generally formed of the aggregate and binder made up as a paste-like material, have been applied to the wall surface by hand, using conventional plastering or troweling techniques.

While this technique produces an excellent surface particularly where the support surface is of a rough material, such as an old wall surface or an unfinished wall surface, the amount of hand labor required is substantial, thereby making the cost of such coatings relatively high.

In order to reduce the amount of field labor, attempts have been made to form panels comprising a substrate or a sheet to which the coating has been applied in a factory and thereafter securing the panels upon the support wall by means of mechanical fasteners. Since such panel materials are used primarily for exterior surfaces, numerous mechanical fasteners are required in order to provide an adequate strength of fastening.

In this technique, it is generally necessary to drill holes through the complete panel for the passageway of screws or bolts or the like fasteners and thereafter, after the panel is mounted, to patch the holes with fresh aggregate coating materials. This too is relatively time consuming and expensive and in addition, tends to make spots or marks on the finished wall where the patches have been applied.

Hence, the invention herein relates to forming a panel type wall using aggregate coated panels but includes a mounting system which eliminates the need for field application of fasteners through the panel and which provides a system wherein the panels may be rapidly assembled with a minimum amount of labor and damage.

SUMMARY OF INVENTION

The invention herein contemplates assembling mounting strips to the panel substrate prior to coating, with mechanical fasteners which are thereafter coated and concealed by the aggregate coating material, and then using corresponding channel strips mounted upon the support surface wherein the panels may be rapidly mounted upon the support surface by interengaging the

which may be hooked onto the wall support channels for spacing adjacent edges of adjacent panels and forming a channel therewith which may be filled with grout or other filler material for producing a monolithic wall construction.

The panel mounting strips which may be arranged either horizontally or vertically upon the rear face of the panel additionally serve to stiffen the panels against wind loads and to align the panels in coplanar relationship despite irregularities of the support wall surface and further permit rapid assembly by endwise sliding of the panels upon the support wall and disassembly, where desired, by vertical lifting off of the support wall. Further, with the construction herein, the panels are spaced a short distance in front of the support wall, which may be of any sort of material, to not only provide for air circulation but also eliminate the need for smoothing or finishing irregularities in the support surface thus making it easy to modernize an existing exterior building wall.

These and other objects and advantages of this invention will become apparent upon reading the following description of which the attached drawings form a part.

DESCRIPTION OF DRAWINGS

FIG. 1 is a perspective fragmentary view of the abutting edges of two adjacent panels and the support means for mounting same upon the support surface.

FIG. 2 is an enlarged cross-sectional view taken in the direction of arrows 2—2 of FIG. 1.

FIG. 3 is a perspective fragmentary view of a spacer strip.

FIG. 4 is a cross-sectional elevational view taken in the direction of arrows 4—4 of FIG. 1.

FIG. 5 is a view, to reduced scale, of the rear face of a single panel.

FIG. 6 illustrates the rear face of a modified mounting means for the panel, and

FIG. 7 is an enlarged fragmentary perspective view of the modified mounting means.

FIG. 8 is a cross-sectional view taken in the direction of arrows 8—8 of FIG. 7.

DETAILED DESCRIPTION

FIG. 1 illustrates a fragment of an exterior panel wall 10 mounted upon a support surface 11 which may be an already existing wall formed of blocks, concrete, stone or the like or may be a semi-finished or unfinished wall framework, such as a stud construction.

The wall is made of a number of large size panels 12 each formed of a thin, substantially rigid sheet or substrate 13 made of a suitable construction material, such as of cement-asbestos sheeting or the like. Covering the sheet is an aggregate coating 14 which may be formed of small sized stones or pebbles or marble chips or the like joined together and bonded to the substrate with a suitable resin binder. Such binders and the aggregate coatings are conventional and hence no further description thereof is given here.

Secured to the support surface 11 are a number of horizontally arranged sheet metal support strips 15 which are J-shaped or upwardly opening channel shaped in cross-section. Such strips may be fastened to the support wall by nails or screws 16 or other suitable fastening means.

Inverted J-shaped panel strips 17 are horizontally arranged upon the rear faces of each of the panels for interengaging with, by hooking over, the support strips 15. The panel strips 17 are secured to the base sheet or substrate only by means of mechanical fasteners such as

Thus, the strips **17** are assembled to the substrate and thereafter are completely concealed.

For assembling the wall, each panel, which preferably is provided with a number of panel mounting strips **17**, is aligned so that the strips **17** are end to end with the support strips **15** and then the panel is slid horizontally along the length of the support strips **15** for final positioning. The panels are thus positioned one by one to form the complete wall.

Preferably, a spacer strip **20** is arranged between the adjacent edges of each adjacent pair of panels. The strip **20** (see FIGS. 2 and 3) is formed of a thin piece of sheet metal, such as one-half inch wide and one-eighth of an inch thick and is secured to the support strips **15** by means of struck out tongues or flanges **21**. Thus, the vertical edges of the spacer strip contact the edges of the panels near their rear surfaces, as shown in FIG. 1, to define a grouting channel which may be filled with caulking or grout or other filler material.

Since the panel mounting strips **17** are assembled to the panel substrate at the factory, they may be accurately aligned wherein the only skilled labor required is that of mounting and aligning the support wall strips **15**. No other fastening operations are required in the field.

MODIFICATION—FIGS. 6–8

FIGS. 6–8 illustrate a modified form of panel mounting strip **30** which is formed in a channel shape, the legs of which abut the rear face of the panel **12**. The channels or strips **30** are fastened to the substrate **13** (see FIG. 7) by means of screws **32** or other similar types of mechanical fasteners, such as rivets or the like, prior to application of the aggregate coating **14** which thus covers and conceals the heads of the fasteners (see FIG. 8).

The base of the channel **30** is provided with struck out flanges or tongues **32** for interengaging with the support wall **15**, for thereby mounting the panels thereon.

This form of mounting strip is particularly useful where extra heavy-duty reinforcing is desirable for the panels particularly in the vertical direction as may be required on various construction jobs.

Having fully described an operative embodiment of this invention, I now claim:

1. An aggregate textured type wall construction, comprising:

a vertical supporting surface having horizontally arranged, vertically spaced apart support strips secured thereto, the support strips each being formed with a base portion secured to the surface and an integral, upwardly directed flange portion to form, in cross-section, an upwardly opening hook;

large size panels aligned edge to edge and arranged upon the supporting surface, said panels each being formed of a thin, substantially rigid base sheet having its outer exposed face covered with a thin coating of an aggregate type material bonded thereto;

a number of panel mounting strips, arranged upon the rear faces of each of the panels, and each having a base portion fastened only to said base sheet by mechanical fastening means which are applied prior to application of the coating and which are covered and concealed by said coating, and an integral, downwardly extending hook-like flange fitted into and supported by an adjacent support strip hook for thereby mounting the panel upon the supporting surface;

and, a thin, narrow vertical sheet metal spacer strip arranged between and abutting each of the adjacent vertical edges of adjacent panels near the rear faces thereof, the spacer strips each having central struck-out, rearwardly and downwardly extending hook-like flanges hooked over and supported by said support strips, and a filling material filling each of the spaces formed by the adjacent panel edges and the spacer strip;

whereby the panels are mounted coplanar a short distance from the supporting surface and may be mounted thereon by horizontally and endwise slidably interengaging the panel mounting strips with the support strips, panel by panel, with the panels spaced by said spacer strips and wherein the panels and spacer strips together form a monolithic, aggregate type textured wall in appearance.

2. A wall construction as defined in claim **1** said support strips each being formed of elongated strips of sheet metal bent into an approximately J-shaped in cross-section for supporting the panel strip flanges anywhere along its length.

3. A wall construction as defined in claim **1**, and said panel support strips each being formed of an elongated, horizontally arranged strip of sheet metal bent along its length into an inverted J-shape in cross-section for hooking over the support strip.

4. A wall construction as defined in claim **3**, and with each of the support strip base portions being formed by the longer vertical leg of the J-shape being fastened to said panel base sheet by headed fasteners, such as screws, rivets and the like, prior to applying the coating to said sheet, with the coating applied over and thereby covering the fastener heads for concealing same.

5. A wall construction as defined in claim **1** and said panel support strips each being formed of an elongated, vertically arranged strip forming the base portion thereof, with said hook-like flanges formed by integral struck-out, rearwardly and downwardly bent portions of said base portions.

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R. A. SCHWARTZ, Assistant Examiner

U.S. Cl. X.R.

52—315, 459, 486, 622