United States Patent

Heirich

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[54] WALL PANELING SYSTEM

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[52] **U.S. Cl.**.....**52/497,** 52/464, 52/502

[51] **Int. Cl.**.....**E04c 2/32,** E04b 1/40

[58] **Field of Search**.....52/497, 498, 502, 460, 461, 52/463, 464, 468, 478, 479, 482, 489, 492, 494, 549, 550, 385, 222

[56] **References Cited**

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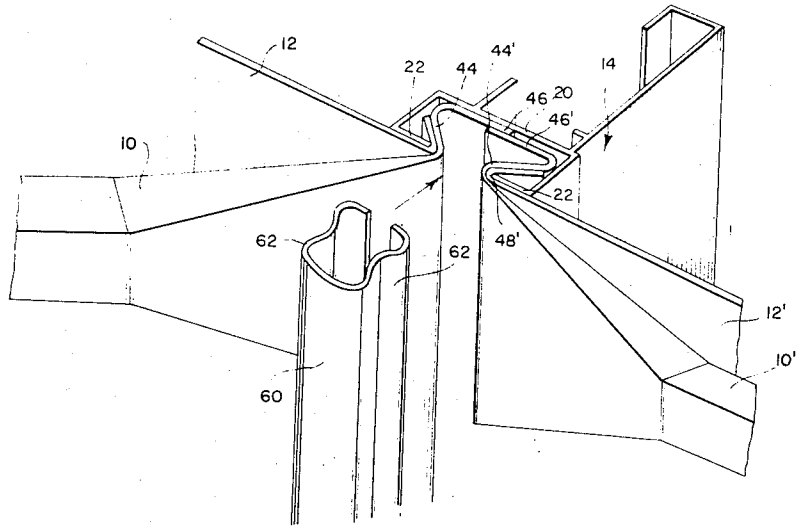
Primary Examiner—Price C. Faw, Jr.

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[57] **ABSTRACT**

Aluminum wall paneling system featuring panels capable of being arranged in a variety of patterns and including deep contoured face panels which when used by themselves form a solar wall, back panels which when used with the face panels form a baffled flange arrangement permitting entrance of air and diffused light between the panels while presenting a solid front appearance, furring channels accepting the face and back panels and also roll form paneling of different design and lock channels for snapping within the furring channels securing various combinations of the aforementioned panels in place while permitting their removal, when desired.

1 Claims, 8 Drawing Figures



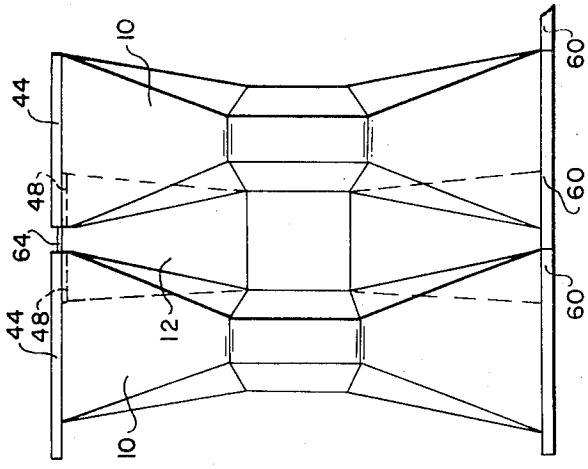


FIG. 3

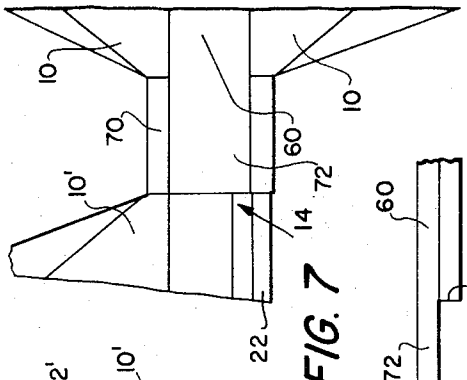


FIG. 7

FIG. 8

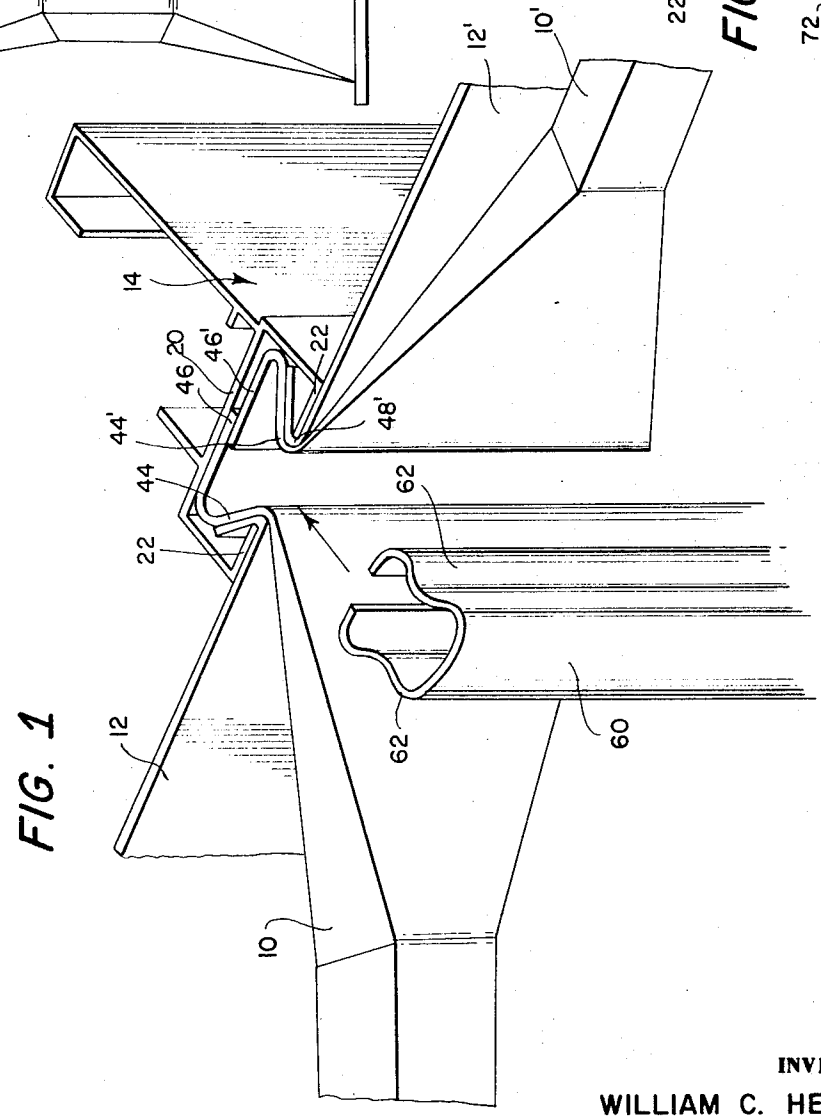


FIG. 1

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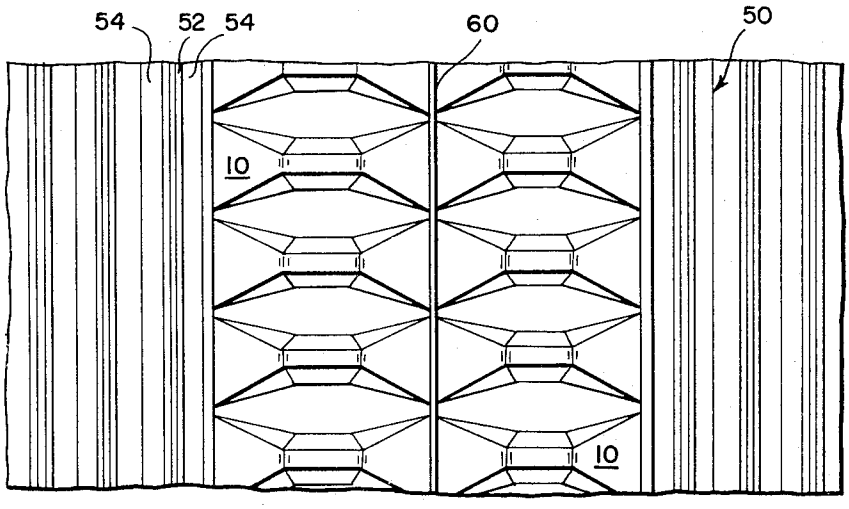


FIG. 2

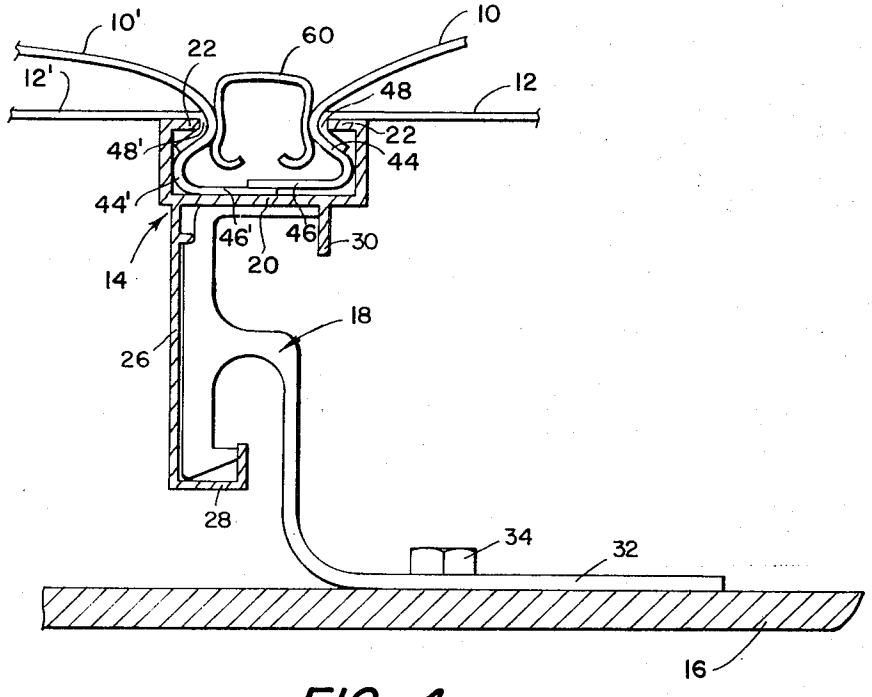


FIG. 4

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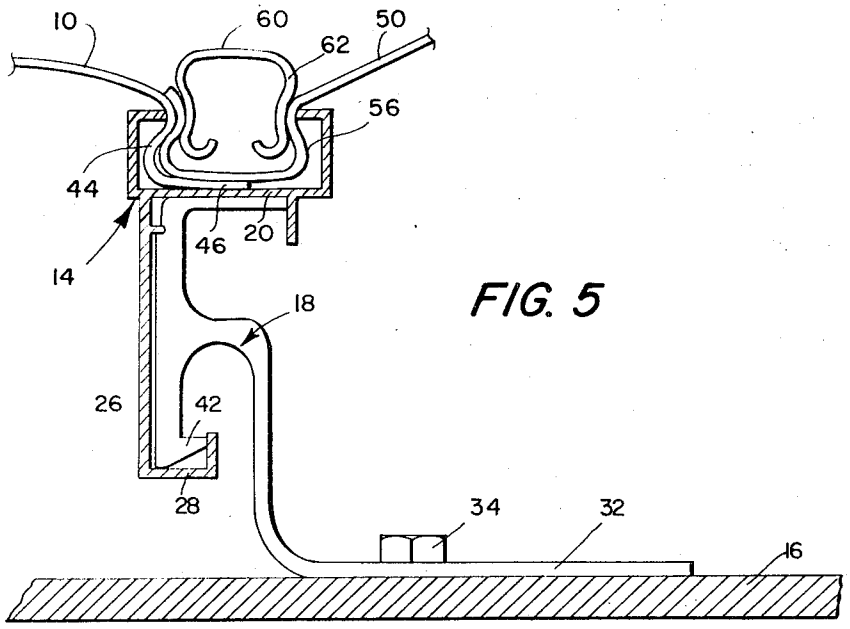


FIG. 5

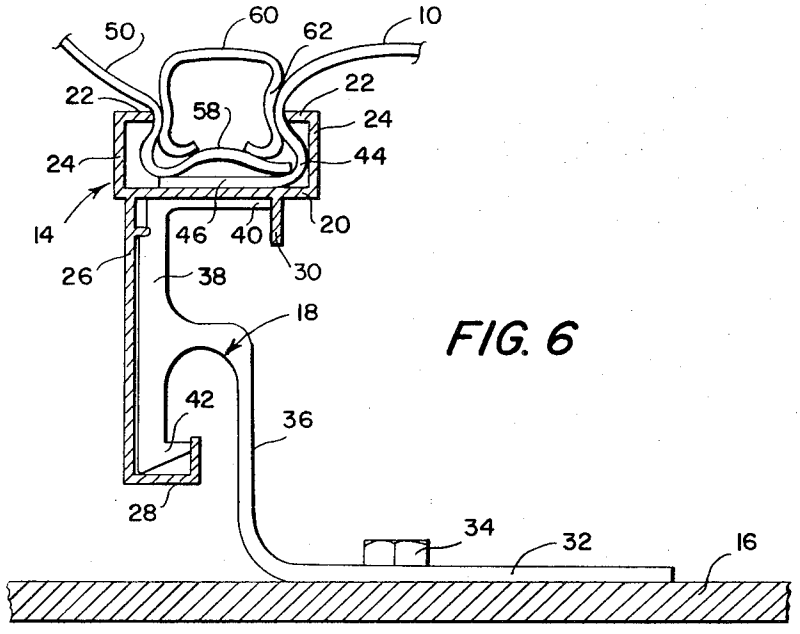


FIG. 6

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WALL PANELING SYSTEM

BACKGROUND AND SUMMARY OF THE INVENTION

The present invention relates generally to aluminum wall paneling systems adaptable to new construction and the modernization of older buildings.

A wall paneling system presently enjoying commercial success is disclosed in U.S. Pat. No. 3,300,926, issued Jan. 31, 1967, and entitled WALL PANELING SYSTEM. This wall paneling system employs interlocking flanges which are disclosed in detail in U.S. Pat. No. 3,226,891, issued Jan. 4, 1966, and entitled CANOPIES.

The aluminum exterior wall paneling system of the present invention features individual deep contoured or sculptured panels arranged in a variety of patterns providing exciting new architectural facade designs. The individual deep contoured panels may be assembled in horizontal or vertical patterns with or without back panels depending upon whether an open vent or solid front appearance is desired. The deep contoured panels of the present invention can be assembled as a complete wall or used in conjunction with the roll paneling disclosed in U.S. Pat. No. 3,300,926.

The deep contoured panels are supported on a framework of aluminum furring channels designed to accept the flanges of the deep contoured face panels and their mating back panels, as well as the roll paneling interlocking flanges disclosed in U.S. Pat. Nos. 3,226,891 and 3,300,926. Resilient lock channels snap in place and hold the panel flanges in the furring channels, permitting removal or rearrangement of panels when desired. The furring channels are secured to the existing building wall or other supporting structure with bracket assemblies.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective view illustrating insertion of adjacent sculptured face and back panels within the furring channel and the lock channel prior to being snapped in place;

FIG. 2 is a side elevation illustrating an architectural facade achieved by sculptured face panels and roll form panels mounted side by side;

FIG. 3 is a front elevation illustrating spaced sculptured face panels and intermediate back panel;

FIG. 4 is a cross-sectional view illustrating the flanges of adjacent face and back sculptured panels secured within the furring channel by the lock channel and the bracket assembly securing the furring channel to the supporting structure;

FIG. 5 is a cross-sectional view illustrating the flange of a sculptured face panel and the female flange of a roll form panel adjacently secured within the furring channel;

FIG. 6 is a cross-sectional view illustrating the flange of a sculptured face panel and the male flange of a roll form panel adjacently secured within the furring channel,

FIG. 7 is a front elevation illustrating sculptured face panels spaced apart along the furring channel with a specially designed clip partially hidden by the lock channel; and

FIG. 8 is a side view of a lock channel illustrating a cut-out portion applicable for use with the clip illustrated in FIG. 7 to cover same.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The exterior wall paneling system disclosed herein features sculptured face panels **10** which may be assembled in a variety of patterns to achieve varying architectural facade designs. Face panels **10** may be arranged horizontally or vertically. Assembled face panels **10** form a solar wall with vents between adjoining edges, as seen in FIG. **2**. When desired, back panels **12** are positioned behind face panels **10**, as seen in FIG. **3**, to form a baffled flange arrangement with face panels **10** permitting air and diffused light to enter between the panels while presenting a solid front appearance.

Face panels **10** and back panels **12** are supported on a framework of aluminum furring channels **14** which, in turn, are secured to a building wall **16** or other supporting structure with bracket assemblies **18**. Adjustable mounting brackets may be employed to permit installation of the panels out from the building wall, where needed to clear offsets or other wall obstructions. For information regarding bracket assemblies and adjustable mounting brackets generally applicable to the present invention, reference is made to my co-pending application, Ser. No. 818,317, filed Apr. 22, 1969, now U.S. Pat. No. 3,507,082 and entitled BRACKETS FOR SECURING SUPPORTING STRUCTURE TO A WALL.

Furring channels **14** each include, as seen in FIG. **6**, a central wall **20** and forward, spaced arms **22** connected by side walls **24**. On the other side of the back wall **20** is located rear wall **26** terminating in flange **28**. A second flange **30** protrudes from central wall **20**.

Bracket assemblies **18** each include, as seen in FIG. **6**, a flat portion **32** secured to the building wall or other support **16** by bolt **34**, an intermediate portion **36** and an end portion **38** terminating in flanges **40** and **42**.

Each furring channel **14** is snapped in place about bracket assembly **18** by positioning flange **28** of furring channel **14** over flange **42** of bracket assembly **18**, afterwhich flange **30** of furring channel **14** is forced over flange **40** of bracket assembly **18**.

Adjacent sculptured face panels **10** and **10'**, as illustrated in FIGS. **1** and **4**, are provided with identical locking flanges **44** and **44'**, respectively, terminating in flat sections **46** and **46'**. As adjacent face panels **10** and **10'** are positioned within furring channel **14**, locking flanges **44** and **44'** surround arms **22** of furring channel **14** and flat sections **46** and **46'** abut, section **46'** resting against central wall **20** of furring channel **14**. Back panels **12** and **12'** are provided with locking flanges **48** and **48'** surrounding and abutting arms **22** on one side and mating with and abutting locking flanges **44** and **44'** of face panels **10** and **10'** on the other side. As will be apparent, if back panels **12** and **12'** are not used, locking flanges **44** and **44'** of face panels **10** and **10'** abut arms **22**.

As illustrated in FIG. **2**, sculptured wall panels **10** are frequently used with roll form panels **50** of the type disclosed in U.S. Pat. Nos. 3,226,891 and 3,300,926. Panels **50** each include trough-like central portions **52** and curved side portions **54** which terminate in locking flanges. As seen in FIGS. **5** and **6**, each roll panel **50** has a first generally overlying or female flange **56** (FIG. **5**) and a second male flange **58** (FIG. **6**) which is slid or snapped in place within the overlying flange of an adjacent roll form panel. For further information regarding the construction of flanges **56** and **58**, attention is again directed to U.S. Pat. No. 3,226,891.

Furring channels **14** accommodate the overlying or female flanges **56** of roll form panels **50** as illustrated in FIG. **5**, and the male flanges **58** of roll form panels **50** as illustrated in FIG. **6**. In each case, the locking flange **44** of a sculptured face panel **10** is positioned within the appropriate furring channel **14** such that flat section **46** thereof abuts central wall **20**. Then, either the female flange **56** or male flange **58** of a roll form panel **50** is positioned within furring channel **14** so as to rest upon the flat section **46** of the locking flange **44** of the sculptured face panel **10**.

Lock channels **60** include curvilinear arms **62** which are compressed manually to permit insertion within furring channels **14** to secure all panel locking flanges in place. In like manner, lock channels **60** are removed by compressing the curvilinear arms **62**.

As will now be apparent, installation consists of installing furring channels **14**, usually on 3 foot centers, by mounting directly to the building wall or other supporting structure **16** with bracket assemblies **18**. Alternatively, adjustable brackets may be used to mount furring channels **14** up to 24 inches from the building wall **16** if it is necessary to clear offsets or other wall obstructions. The flanges of the sculptured face and back panels **10** and **12** and roll form panels **50** are positioned within furring channels **14**, in the desired combination, after which lock channels **60** are snapped in place securing all panels within furring channels **14**.

Face panels **10** are spaced apart, usually 1 ⅜ inches, as illustrated in FIG. **3**. Note in FIG. **3** that locking flanges **48** of back panels **12** are cut and the section **64** defined between cuts bent so as to permit the locking flanges **44** of face panels **10** to be precisely spaced, as desired. Where variation in the overall paneling height is required, the spacing between panels is reduced by cutting lock channels **60**. Thus, the overall height of paneling is reduced by the amount the lock channels **60** are shortened.

When back panels **12** are not used, clips **70**, illustrated in FIG. **7**, are snapped in place over the arms **22** of each furring channel **14** between adjacent face panels **10** and **10'**. In this manner, the sides of face panels **10** abut clips **70** ensuring proper spacing. As seen in FIG. **8**, the end of each lock channel segment **60** is provided with a cut-out portion. In this manner, the remaining portion **72** of each lock channel segment **60** covers the respective clip **70**, while the edge **74** abuts clip **70**. The lock channel segments **60**, illustrated in FIG. **3**, are similarly provided with cut-out portions.

Face panels **10** may also be cut in half and used at the extremities of the paneling system.

Variation in construction and design of component parts may be envisioned without departing from the spirit of invention as defined by the sub-joined claims.

What is claimed is:

1. A paneling system, comprising:

a furring channel generally U-shaped in cross section and including arms facing inwardly from the remainder of said channel defining an opening therebetween;

adjacent panels, said panels terminating in flanges, said flanges including curvilinear portions extending from positions located outwardly of the ends of said arms to said ends and then bending around said ends and extending outwardly within said furring channel in such manner that said curvilinear portions of said flanges encompass said arms of said furring channels;

second panels located on opposite sides of said furring channel and positioned in part behind said panels, said second panels including second flanges positioned within said furring channel between said curvilinear portions of said flanges of said panels and said arms of said furring channel, said flanges of said second panels being cut at selected points and that portion of said locking flanges therebetween being bent so as to provide a support against which certain of said first panel flanges abut spacing same apart, as desired, and

a locking channel positioned between said flanges and including curvilinear portions generally complementary with respect to and engaging said curvilinear portions of said flanges of said panels along a single continuous contact area along each of said curvilinear portions of said flanges, said locking channel being flexible and normally wider than said opening defined by said arms of said furring channel such that after said locking channel is squeezed into position permitting same to enter said furring channel it expands outwardly biasing said curvilinear portions of said locking flanges in the direction of said arms of said furring channel.

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