July 1, 1969 W. C. HEIRICH 3,452,500

WALL PANELING SYSTEM

Original Filed Dec. 28, 1965 Sheet 1 of 2

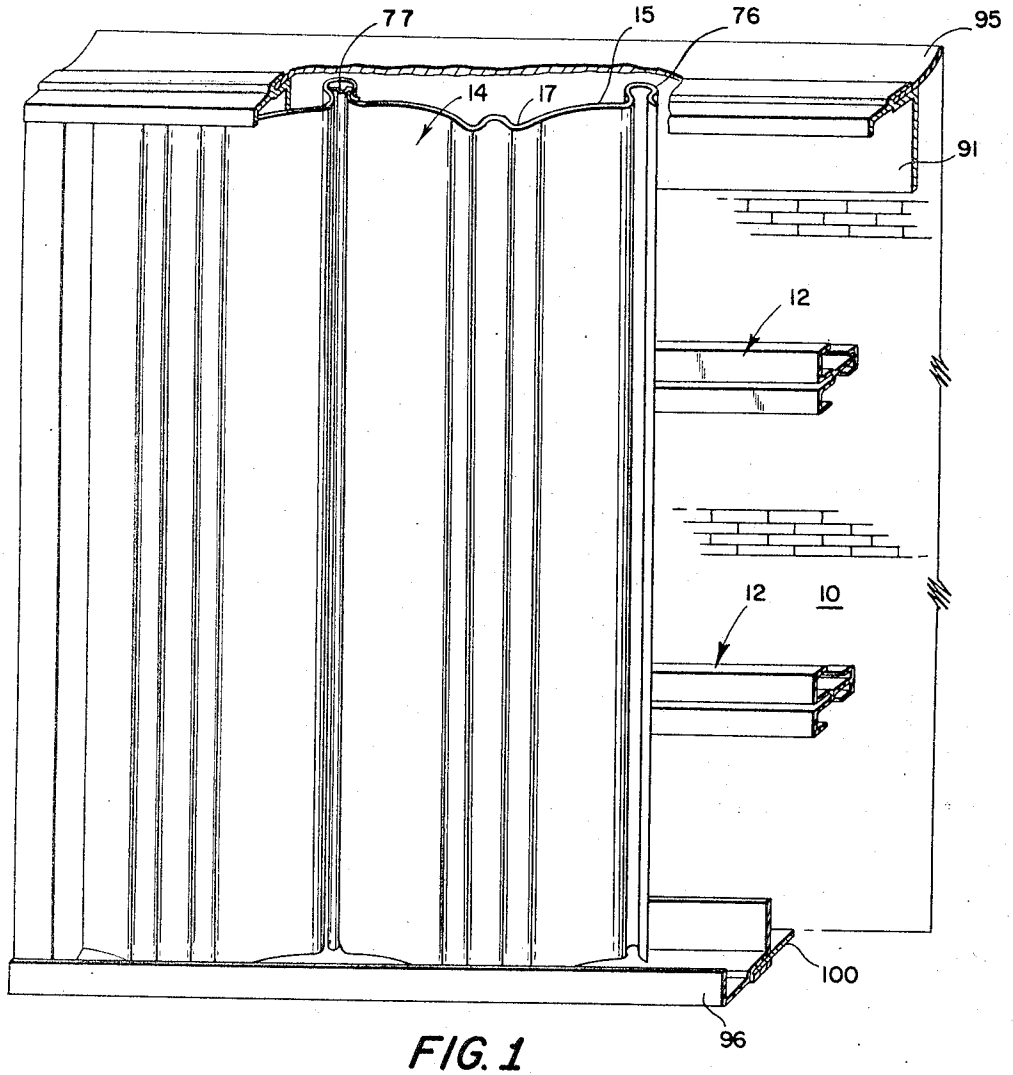


FIG. 1

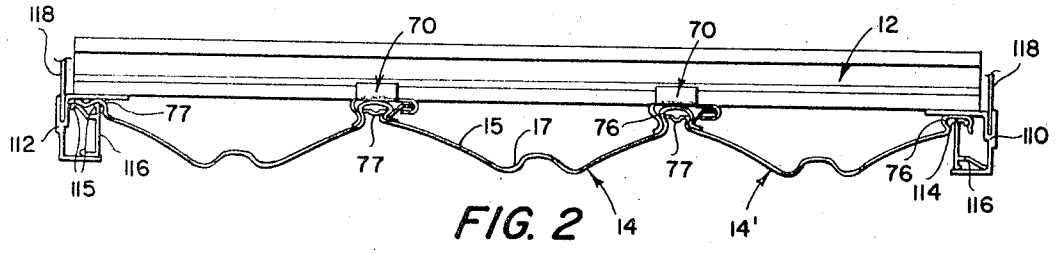


FIG. 2

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FIG. 3

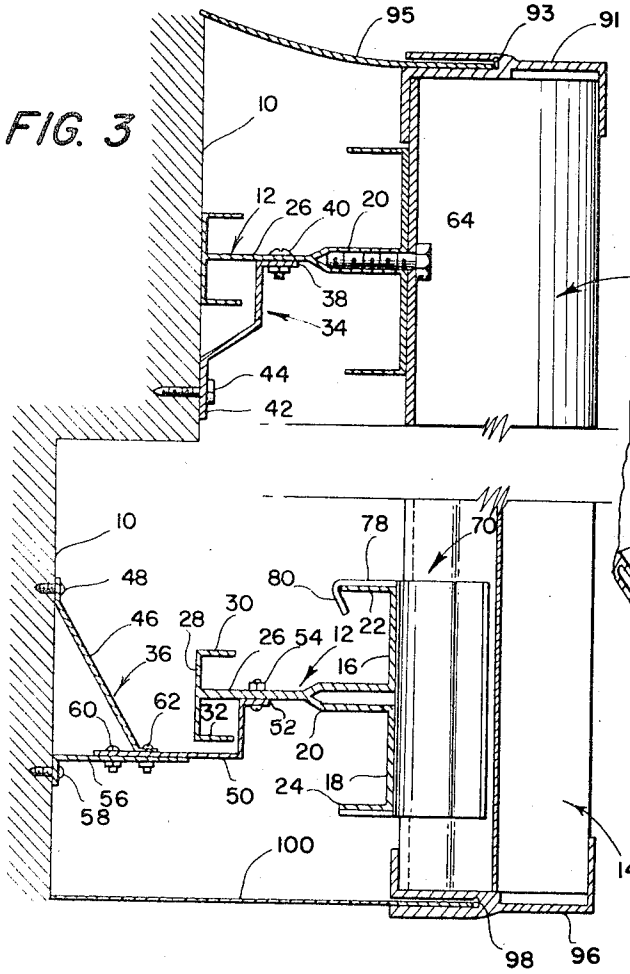
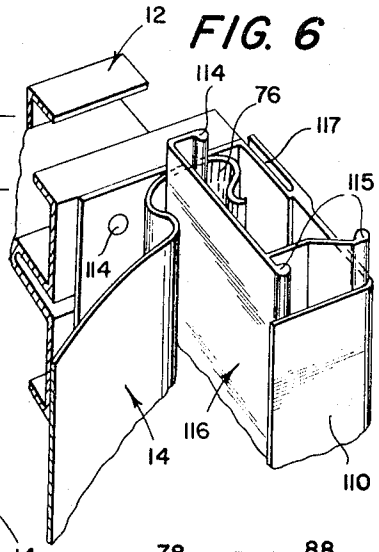


FIG. 6



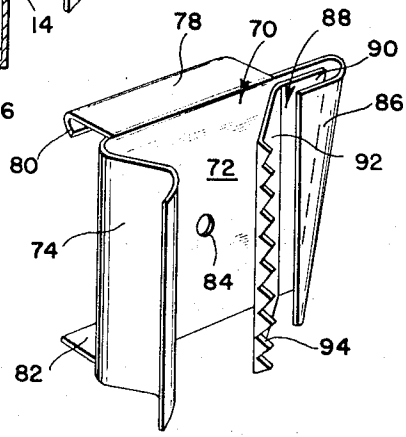


FIG. 5

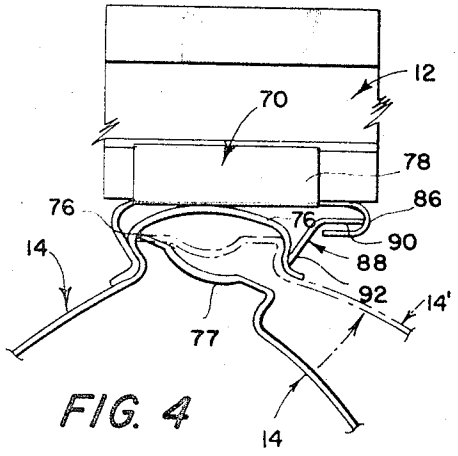


FIG. 4

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3,452,500

WALL PANELING SYSTEM

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Original application Dec. 28, 1965, Ser. No. 516,885, now Patent No. 3,300,926, dated Jan. 31, 1967. Divided and this application Nov. 16, 1966, Ser. No. 594,869
Int. Cl. E06b 3/54; E04b 5/52; E04c 1/39
U.S. Cl. 52—478 7 Claims

ABSTRACT OF THE DISCLOSURE

Wall paneling system featuring individual panels with locking flanges enabling panel elements to be either slid together endwise or snapped in place while preventing disassembly of panels by reverse unlocking action and clip assemblies securing panel locking flanges to a supporting member permitting the assembled panel elements of the wall system to slide freely to cover a desired length.

The present application is a division of application Ser. No. 516,885, filed Dec. 28, 1965, which issued Jan. 31, 1967, as Patent No. 3,300,926.

The present invention relates generally to a wall paneling system adaptable to either new construction or the modernization of older buildings. While the present paneling system provides an excellent wall surface for new construction, it is also possible to give an older building that is structurally sound, but outdated appearance-wise, a modern exterior look.

Accordingly, an object of the present invention is to provide a wall paneling system adaptable to either new construction or the modernization of older building characterized by its simplicity in construction, flexibility of use, and ease of field assembly.

Another object of the present invention is to provide in a wall paneling system a plurality of interlocking panels capable of being slid together endwiseor snapped in place, as desired.

A further object of the present invention is to provide a system for adjustably positioning wall paneling elements preselected distances from building front.

Still a further object of the present invention is to provide a system for permitting the interlocking panel elements of wall system to slide freely along building front to stretch or compress panel elements thus eliminating the necessity of sizing terminal panel elements to precisely fit length of building front.

Other objects will become apparent from the ensuing specification and attached drawings, wherein:

FIG. 1 is a perspective view illustrating generally the mode of modernizing old building front with the use of the present wall paneling system;

FIG. 2 is a top view illustrating generally the attachment of interlocking panel elements to supporting structure on building front;

FIG. 3 is a side elevation partly in section illustrating in detail the attachment of panel elements to building wall;

FIG. 4 is a top view illustrating suggested clip assembly for attaching panel elements to wall, as well as configuration of interlocking flanges of wall panel elements;

FIG. 5 is a perspective view of clip assembly employed to attach adjacent wall panels to building front supporting structure;

FIG. 6 is a perspective view illustrating the attachment of a flange of terminal panel to building wall supporting structure with the use of suggested side channel fastener, this feature not being a part of the present invention.

As seen in FIG. 1, the reference numeral **10** generally designates the surface of building front to be modernized. Attached to building front **10** are T-shaped furring strips **12** to which the individual panels **14** are secured.

Extruded furring strips **12**, as seen in FIG. 3, include front vertical walls **16** and **18**, held in spaced relationship by U-shaped section **20**, and terminate at their extremities in horizontal flanges **22** and **24** respectively. Attached near the center portion of U-shaped section **20** and extending rearwardly therefrom is horizontal member **26** which terminates in rear vertical wall **28** having horizontal flanges **30** and **32** which are secuerd to the building front **10** with the use of either bracket assembly **34** or **36**, as described in detail hereinafter.

Bracket assembly **34** illustrated in the top portion of FIG. 3, has a top horizontal flange **38** which rests in abutting relationship against the underside of horizontal member **26** of furring strip **12** and is secured thereto by bolt assembly **40**. Bracket assembly **34** also includes a lower vertical flange **42**, which rests in abutting relationship against building wall **10** and is attached thereto with screw **44**.

As seen in the lower portion of FIG. 3, adjustable bracket assembly **36** consists of an upper brace **46** attached to building wall **10** with screw **48**, a center member **50** provided with slotted portion extending lengthwise (not shown) terminating in angular end section **52** attached to horizontal member **26** of furring strip **12** with bolt assembly **54**, and a lower brace **56** attached to building wall **10** with screw **58** and also being provided with lengthwise slotted portion (not shown). Thus, as bolt assemblies **60** and **62**, which pass through the slotted portions referred to above, are unloosened, the end portion **52** of member **50** may be extended inwardly or outwardly from building wall **10**, as desired, thus permitting furring strip **12** to be positioned predetermined distances from building wall **10**.

Panel elements **14** may be attached directly to furring strip **12**, as seen in the upper portion of FIG. 3, with the use of self-tapping screw **64** which is positioned within U-shaped section **20** of furring strip **12**. Alternatively, and as illustrated in the lower portion of FIG. 3, panel elements **14** may be attached to furring strips **12** with the use of clip assemblies **70** shown in detail in FIG. 5.

Clip assemblies **70** each consist of a backplate **72** terminating on one side thereof in curvilinear arm **74** which is generally complementarily configured to rest in abutting relationship against one side of interlocking flange **76** of panel element **14** (FIG. 4). At the top of backplate **72** is located upper horizontally disposed flange **78** having turned-down portion **80** designed to encompass horizontal flange **22** of furring strip **12** (FIG. 3). At the bottom thereof, backplate **72** terminates in lower horizontally disposed flange **82** which rests in abutting relationship against horizontal flange **24** of furring strip **12** (FIG. 3). Near the middle of backplate **72** is located opening **84** through which a self-tapping bolt may be inserted for providing additional support in securing panel elements **14** to the U-shaped sections **20** of furring strips **12**. On the other side of backplate **72** is located tapered, overlying flange **86**, generally U-shaped in cross-section. Within overlying flange **86** is located wedge element **88** consisting of a first flat section **90**, inserted within overlying flange **86** in sliding relationship therewith, and a second section **92** designed to engage the other half of interlocking flange **76** of panel element **14**, as seen in FIG. 4. In addition, the edge of wedge section **88** may contain serrations **94** capable of gripping the surface of interlocking flange **76** more tightly.

As seen in FIGS. 1 and 3, the top portions of panel elements **14** are enclosed within top cap **91** which includes

channel **93** within which is inserted flashing **95** for mounting against building wall **10**, or covering the top of the wall to the top of paneling **14**, whichever is necessary or desirable. Similarly, bottom cap **96** encompasses the bottom portions of panel elements **14** and is provided with channel **98** into which is inserted lower flashing **100**.

As illustrated in FIGS. 2 and 6, side caps **110** and **112** are attached by any conventional means, such as a rivet **130**, directly to furring strips **12**. After interlocking flange **76** of terminal panel **14** is inserted within side cap **110**, side channel fastener **116** is slid in place downwardly within side cap **110**. As seen in FIG. 2, each panel element **14** consists of a first generally overlying flange **76** and a second flange **77** configured to rest within overlying flange **76** of adjacent panel **14'**. When inserting side channel fastener **116** within overlying flange **76** (FIG. 6), the single leg **114** tightly secures terminal flange **76** to cap **110**. In reverse manner, as seen in FIG. 2, double legs **115** secure flange **77** of other terminal panel **14** within cap **112**.

Each of the panel elements **14**, as seen in FIGS. 2 and 4, consists of arched or curved side portions **15** and trough-like bottom portions **17**. Side portions **15** terminate in locking flanges **76** and **77** as previously described. As the distance between the innermost portions of overlying flange **76** is smaller than the width of top of flange **77**, a "snap-lock" is created. Thus, by pushing inner flange **77** against outer flange **76** in the direction indicated by arrow in FIG. 4, adjacent panels **14** and **14'** may be snapped in place. Alternatively, the panels may be slid together endwise. In either case, once adjacent panels **14** and **14'** are locked, it is impossible for adjacent locking flanges **76** and **77** to unlock by reverse action.

Now, the advantages of the present wall paneling system will be discussed. As previously indicated, each panel element **14** is designed with interlocking flanges **76** and **77** permitting adjacent panels **14, 14' . . .** to be attached together either by snapping in place or sliding together lengthwise. Thus, field installation is simplified and the structural integrity of assembled wall insured. Although the inner flange **77** of panel **14'** may be simply snapped in place within overlying flange **76** of panel element **14**, the locking action is not reversible.

In addition, use of clip assemblies **70** permits panels **14, 14' . . .** to be slid along furring strips **12**. In this manner, it is no longer necessary to cut one or both terminal panels to precisely fit the length of building wall **10** to be covered since each of the panels **14** can be compressed or stretched through their curved side portions **15**, as desired. Thus, the terminal panel(s) can be properly aligned at ends of building wall **10** and intermediate panels slid along furring strips **12** as individual panels are stretched or compressed.

Ease in field assembly and economy of construction is further provided for with the use of side caps **110** and **112** in conjunction with side channel fasteners **116**. As fasteners **116** are capable of securing either of locking flanges **76** and **77** of panel elements **14**, simply by reversing position of fastener **116**, the problem of providing separate fasteners for different terminal locking flanges is avoided.

Top and bottom caps **91** and **96**, in addition to adding structural integrity to the paneling system as a whole, provide simplified basis for attaching finishing flashing **95** and **100**, as desired.

Finally, adjustable bracket assembly **36** enables precise positioning of panel elements **14** from building front **10**. Frequently, the building wall to be modernized will include offset portions, such as illustrated generally in FIG. 3, requiring panel supporting structure capable of spaning varying distances. Bracket assembly **36** permits such variation with a single uniform structure eliminating time consuming innovation.

With the construction techniques outlined above, low cost of manufacture and flexibility of field installation is achieved in a manner unknown to the prior art. Manifestly, variations in construction and design of component parts may be employed without departing from the spirit of invention as defined by the sub-joined claims.

I claim:

1. A paneling system, comprising:

(A) a plurality of panel elements having arched side portions and interconnecting intermediate portions, said side portions terminating in adjacent interlocking flanges permitting said panel element to be assembled as a wall terminating at each end thereof in end panels;

(B) supporting structure positioned adjacent said interlocking flanges and including spaced upper and lower flat surfaces running along said wall; and

(C) fastening means securing said interlocking flanges of said panel elements to said supporting structure, said fastening means including a plurality of clip assemblies slidably mounted upon said supporting structure such that the length covered by said panels can be varied to precisely fit the length of the building front as the arched side portions of said panel elements flex inwardly or outwardly when the assembled panel elements and clip assemblies are slid along said supporting structure, said clip assemblies including first and second surfaces abutting said upper and lower flat surfaces of said supporting structure, respectively, said first surface of said clip assembly terminating in a flange encompassing said upper flat surface of said supporting structure resisting outward movement of said clip assembly from said supporting structure.

2. A paneling system as in claim **1**, wherein one of said locking flanges of the adjacent panels overlies the other of said flanges and has at least one inwardly converging side portion which together with the remainder of said one of said locking flanges defines and opening while the other of said flanges has a top portion longer than the length of said opening for engagement within and between said one of said flanges, said panel elements being constructed of flexible material permitting said adjacent panels to be snapped in place while preventing said panels from unlocking by reverse action.

3. A paneling system as in claim **2**, wherein said remainder of said one of said locking flanges includes an inwardly converging side portion opposite said at least one inwardly converging side portion.

4. A paneling system as in claim **3**, wherein said top portion of said other of said flanges is generally straight.

5. A paneling system as in claim **4**, wherein said panel elements are vertical and said supporting structure is horizontal.

6. A paneling system as in claim **5**, including a building front and means attached to said building front positioning said supporting structure a predetermined distance from said building front.

7. A paneling system for covering a building front, comprising:

(A) a plurality of generally vertical panel elements having arched side portions and interconnecting intermediate portions, said side portions terminating in adjacent interlocking flanges permitting said panel elements to be assembled as a wall, said adjacent interlocking flanges including a first flange fitted within a second flange which overlies the entirety of said first flange, said second overlying flange including converging side portions;

(B) supporting structure positioned generally horizontally adjacent said interlocking flanges;

(C) means positioning said supporting structure a predetermined distance from said building front; and

(D) a plurality of clip assemblies provided with means slidably mounting same upon said supporting structure, each of said clip assemblies including first and second arms engaging said converging side portions

of said second overlying flange of each of said inter- of said second overlying flange of each of said adjacent interlocking flanges such that the length covered by said panels can be varied to precisely fit the length of the building front as the arched side portions of said panel elements flex inwardly or outwardly when the assembled panel elements and clip assemblies are slid along said supporting structure.

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JOHN E. MURTAGH, *Primary Examiner.*

U.S. Cl. X.R.

52—489, 520, 588