

[54] BUILDING SIDING UNITS

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Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 7,123, Jan. 30, 1970, abandoned.

[52] U.S. Cl. 52/521, 52/409, 52/531, 52/558

[51] Int. Cl. E04b 2/08, E04c 2/46, E04d 3/362

[58] Field of Search.....52/520, 521, 530, 531, 409, 52/556, 542, 555, 558

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[57] ABSTRACT

A siding unit for a building having an outer panel and a backing board. The outer panel includes an upper marginal portion having a generally horizontal web which extends rearwardly from the face portion of the panel and which terminates in an upturned generally vertical lip. The outer panel also includes a retainer part which extends along the upper marginal portion thereof. The retainer part extends below the web of the upper marginal portion. The outer panel includes a lower marginal or butt portion which interlocks with the panel retainer part of the siding unit in the lower adjacent siding course. The backing board of the siding unit includes upper and lower margins and has its lower margin positioned adjacent to the upper margin of a backing board in a lower adjacent siding course. The upper marginal portion of the outer panel of the siding unit is positioned and retained between the upper marginal portion of its backing board and the lower marginal portion of the backing board in the upper adjacent course. Securement means are driven through the backing board adjacent its lower marginal portion and into the building structure.

The face portion of the outer panel of the siding unit is spaced sufficiently from its backing board at one or more locations so as to define air spaces between the outer panel and its backing board.

7 Claims, 4 Drawing Figures

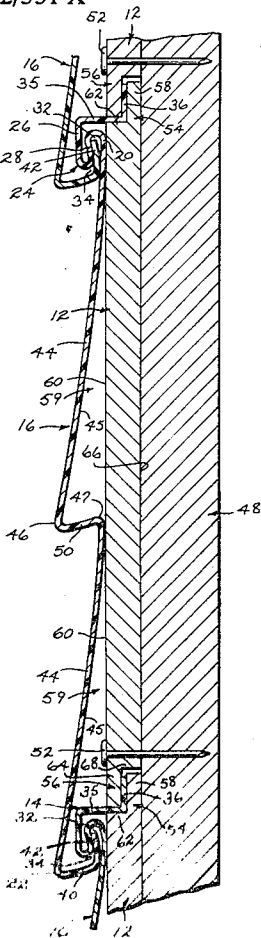


Fig. 1

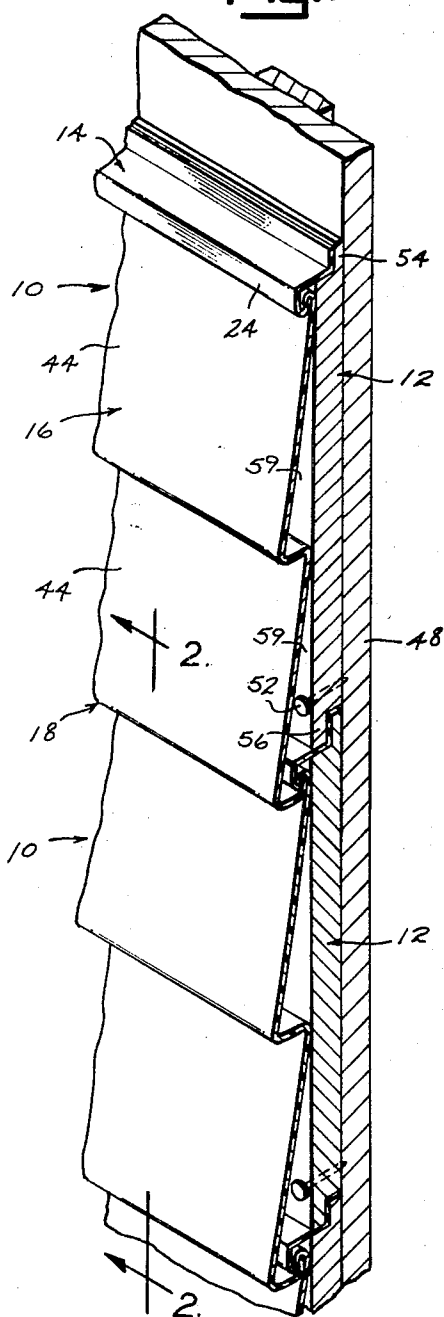
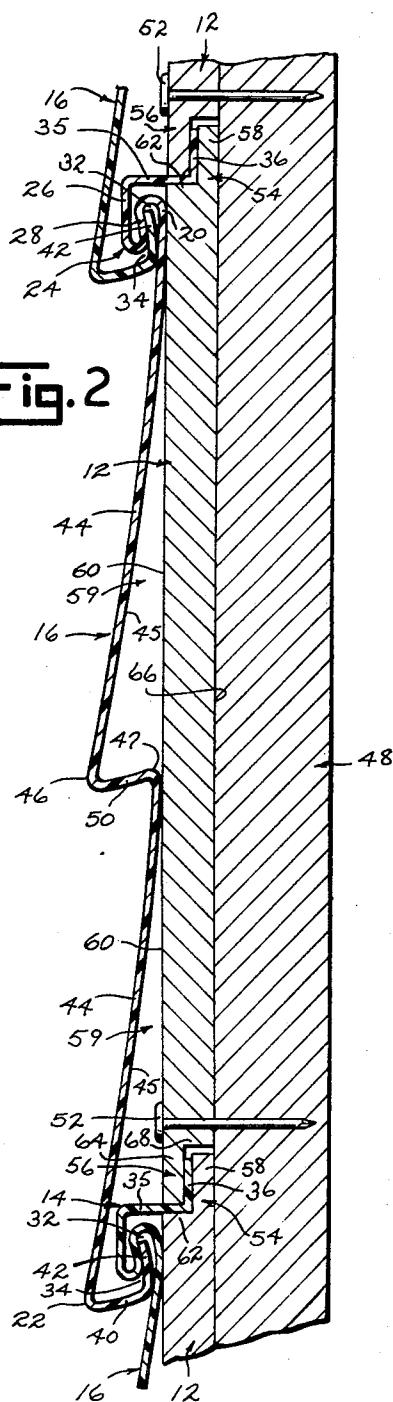


Fig. 2



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Fig. 3

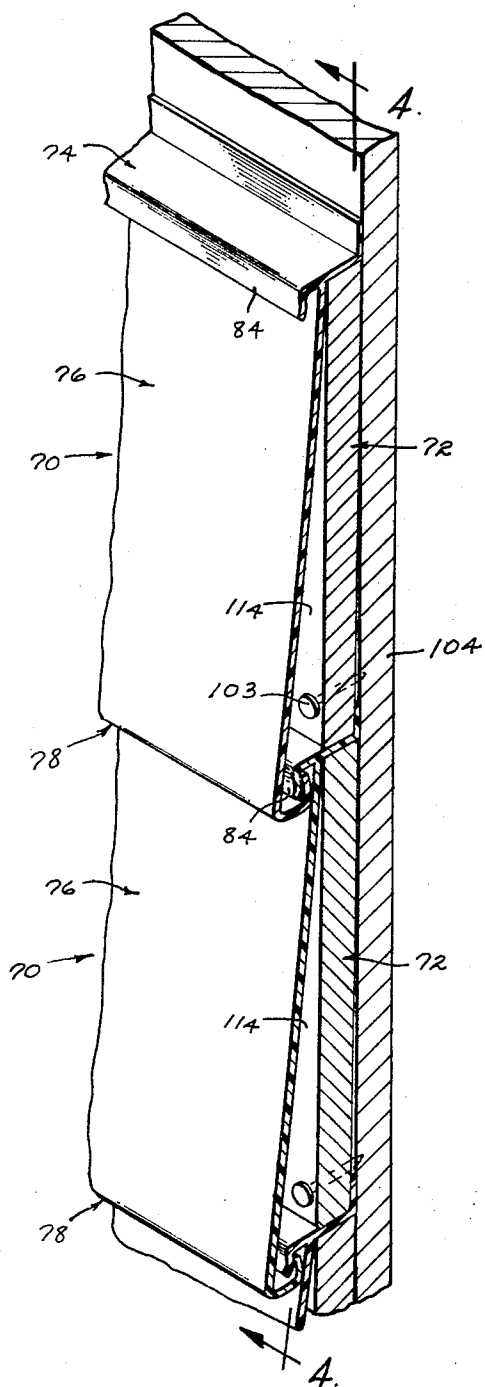
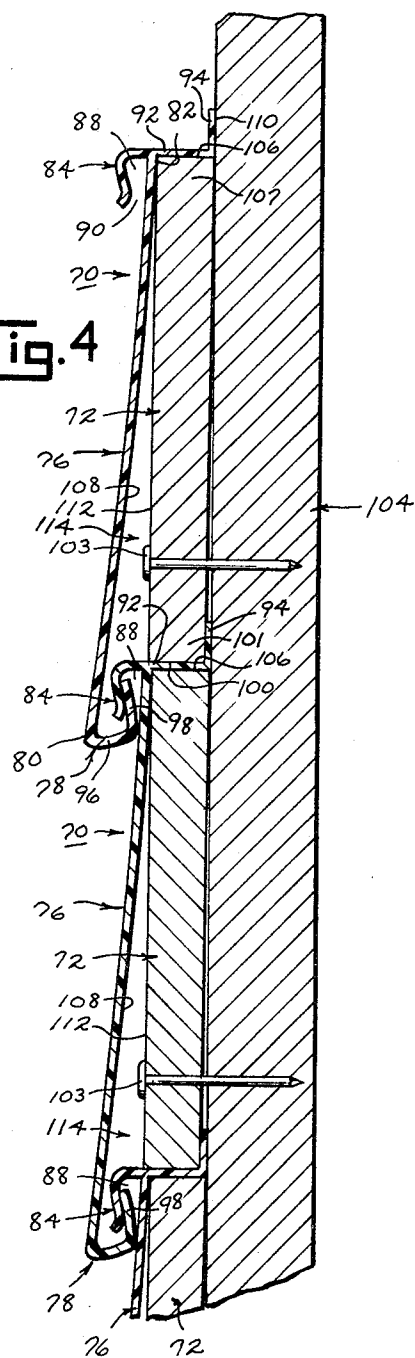


Fig. 4



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BUILDING SIDING UNITS

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of my U. S. application Ser. No. 7,123, filed Jan. 30, 1970 now abandoned.

SUMMARY OF THE INVENTION

This invention relates to a siding unit for a building or similar structure and specifically concerns a means for attaching a plurality of siding units, each comprising an outer panel and a backing board, to a frame structure.

The siding unit of this invention represents an improvement to the siding unit forming the subject matter of my U.S. Pat. No. 3,485,004, granted Dec. 23, 1969. The upper marginal portion of the outer panel of the unit includes a generally horizontal web which extends rearwardly of the face portion of the unit and which terminates at the rear edge thereof in an upturned generally vertical lip. A retainer part extends below the web of the upper marginal portion and forms means for interlocking with the lower marginal or butt portion of the outer panel of the siding unit in the upper adjacent siding course. The backing board of the siding unit is positioned at the back face of the outer panel and includes upper and lower marginal portions. The lower marginal portion of the backing board cooperates with the upper margin of the backing board in the lower adjacent siding course. The vertical lip at the upper margin of the outer panel of the siding unit is positioned and retained between the upper marginal portion of its backing board and the lower marginal portion of the backing board in the upper adjacent siding unit course. The outer panel is retained in position by securement means, such as a nail, driven through the lower marginal portion of the backing board in the upper adjacent siding course and into the underlying frame structure.

In the siding units of this invention, the outer panels are not nailed to the building, but instead are hung on their respective backing boards which are nailed at their lower margins to the building structure. Each backing board cooperates with the backing board in the lower adjacent course and thereby serves to hold the outer panel of the siding unit in the lower adjacent course against its backing board. The interlocked outer panels of adjacent siding units, by not being directly nailed or similarly secured to the building, are free to expand or contract during use. To reduce the tendency for the outer panels of the siding units to warp during use, the face portion of each outer panel is spaced from its backing board at one or more locations so as to define air spaces between the panel and board. These air spaces reduce the temperature differential between the exposed front face and the rear face of the outer panel.

The face portion of each siding unit outer panel may include two or more generally parallel offset face parts. The upper of the face parts has a lower edge which extends forwardly of the upper edge of the adjacent lower panel face and which is connected thereto by an integral web. The upper edges of the panel face parts preferably lie in a generally vertical plane and contact the panel's backing board, thereby reducing any tendency for the siding unit to vibrate in the wind and create undesirable noise effects.

Accordingly, it is an object of this invention to provide siding units for a building or similar structure in which each siding unit has a backing board which is secured to the building and which serves to position and hold parts of the siding unit in the lower adjacent siding course against the building.

It is another object of this invention to provide building siding units each having an outer panel and a backing board which serves to retain the outer panel of the siding unit of the lower adjacent course in position and which is spaced from the exposed face portion of its outer panel.

It is a further object of this invention to provide a building siding unit which is of economical construction and which can be rapidly attached to a building or similar structure.

Another object of this invention is to provide a building siding unit having a panel which is attachable to a building structure and which is engageable therewith at a plurality of points along its face portion so as to reduce any tendency of the panel to vibrate when subjected to wind or similar climatic conditions.

Further objects of this invention will become apparent upon a reading of the invention's description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a fragmentary perspective view of one embodiment of the siding unit shown attached to a building structure.

FIG. 2 is an enlarged detailed sectional view taken along line 2—2 of FIG. 1.

FIG. 3 is a fragmentary perspective view of another embodiment of the siding unit shown attached to a building structure.

FIG. 4 is an enlarged detailed sectional view taken along line 4—4 of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The preferred embodiments illustrated are not intended to be exhaustive or to limit the invention to the precise forms disclosed. They are chosen and described in order to best explain the principles of the invention and its application and practical use to thereby enable others skilled in the art to best utilize the invention.

Each siding unit shown in FIGS. 1 and 2 comprises an outer panel 10 and a backing board 12. Outer panel 10 of the siding unit may be formed from flat plastic, such as polyvinyl sheeting or aluminum sheet blanks, which are shaped by a series of progressive bending or forming dies. Outer panel 10 includes an upper marginal portion 14, a face portion 16 depending from marginal portion 14, and a butt portion 18 extending from the lower margin 22 of face portion 16.

Face portion 16 of outer panel 10 has an upper margin 20 which parallels its lower margin 22. Face portion 16 includes an integral retainer part 24 which extends along upper margin or edge 20 thereof. Retainer part 24 preferably comprises a downturned forwardly projecting double-fold extension having an outer run 26 and a spaced inner run 28. Inner run 28 of retainer part 24 defines, in cooperation with the remainder of the face portion 16, an inverted channel 32. Channel 32 has a narrow restricted lower opening 34.

Upper marginal portion 14 of outer panel 10 includes a substantially horizontal web 35 which extends

rearwardly from the upper edge of outer run 26 of retainer part 24 and which terminates in an upturned substantially vertical lip 36 located rearwardly of face portion 16.

Butt portion 18 of outer panel 10 includes a web 40 which extends rearwardly from lower margin 22 of the face portion and which terminates in an upturned, preferably forwardly inclined lip 42. Lip 42 of the butt portion 18 is adapted to be inserted upwardly into a narrow opening 34 of the retainer part channel 32 of a siding unit in a lower adjacent siding course.

Face portion 16 of outer panel 10 may be of a smooth slightly concavo-convex configuration, or the fold-like appearance illustrated in FIGS. 1 and 2 which simulates a plurality of smaller overlapping siding unit panels. Fold-like face portion 16 includes two or more longitudinal panel parts 44 which lie in generally parallel planes and which may have slightly concavo-convex configurations. The lower edge 46 of each upper panel part 44 extends forwardly of and preferably slightly below the upper edge 47 of the adjacent lower panel part 44 and is connected thereto by a web 50. The upper edge 47 of each panel part 44 preferably lies in substantially the same plane as upper margin 20 of face portion 16.

Backing board 12 is preferably formed of rigid material, such as insulating fiberboard or honeycombed light weight plastic, and has an upper lipped or thin-walled marginal portion 54 and a substantially parallel lower lipped or thin-walled marginal portion 56. Upper marginal portion 54 of the backing board includes a side wall 58 which is set in from front face 60 of the backing board and separated therefrom by a shoulder 62. Lower marginal portion 56 of the backing board includes a side wall 64 which is set in from rear face 66 of the board and separated therefrom by a shoulder 68. Backing board 12 is positioned at the back side of face portion 16 with its lower marginal portion 56 overlapping in complementary cooperation the upper marginal portion 54 of the backing board 12 of the siding unit in the lower adjacent course. Vertical lip 36 of the upper marginal portion 14 of the siding unit panel in the lower adjacent course is positioned between side walls 58 and 64 of the lapped backing board marginal portions 54 and 56 and is retained therein by means of nails 52 or similar securement means which are driven through the overlapping backing board adjacently above its lower marginal portion 56 and into the inner building siding 48. Shoulder 62 at the upper marginal portion 54 of the overlapped backing board 12 extends to and preferably abuts the lower surface of web 35 of its outer panel 10. Rear face 45 of each panel part 44 is spaced from the front face 60 of its backing board 12 so as to define one or more air spaces 59 located between each outer panel 10 and backing board 12 of a siding unit.

To attach each siding unit heretofore described to inner building siding 48, a backing board 12 is first positioned against the building siding 48 with its lower marginal portion 56 overlapping web 35 and lip 36 of the upper marginal portion 14 of the underlying outer panel and the upper marginal portion 54 of the underlying backing board in the lower adjacent siding course. With either the lower end of marginal portion 54 of the overlapping backing board 12 abutting web 35 of the

outer panel in the lower siding course, as shown in FIGS. 1 and 2, or shoulder 68 at the lower marginal portion 56 of the overlapping backing board abutting the upper end of marginal portion 54 of the backing board in the lower adjacent siding course, nails 52 are driven through the overlapping backing board adjacently above its lower marginal portion 56 and into building siding 48. Butt portion 18 of an outer panel 10 is then positioned against the outer panel of the siding unit in the lower adjacent siding course and slid upwardly causing its lip 42 to be received within channel 32 of retainer part 24 of the lower adjacent outer panel and interlocked therewith. The upper marginal portion 14 of the outer panel 10 is then swung inwardly until its web 35 is positioned over shoulder 62 of the upper marginal portion 54 of the adjacent backing board 12. Outer panel 10 can now be released since it will remain positioned against the adjacent backing board 12. The heretofore described assembly procedure is repeated for another siding unit beginning with another backing board 12 being positioned against building siding 48 and having its lower marginal portion 56 overlapping the upper marginal portion 54 of the backing board in the adjacent lower course.

As best illustrated in FIG. 2, it is to be noted that with outer panel 10 positioned against its backing board 12, edge 47 and upper margin 20 of the face portion of the panel contact outer surface 60 of the backing board and add rigidity to the assembled siding unit. It is to be understood that retainer part 24 of the outer panel 10 of the siding units need not be limited to the double-fold type illustrated, but can instead consist of other inverted channel-defining means such as the clip-type retainer illustrated and described in my U.S. Pat. No. 3,485,004. It is also to be understood that the multiple-part face portion of the outer panel of this invention would have application in other forms and types of siding, including siding which is attached to a building structure without a backing board.

Each siding unit shown in FIGS. 3 and 4 comprises an outer panel 70 and a backing board 72. Outer panel 70 can be formed of a plastic material and extruded into shape. Backing board 72 can be formed of the same materials as the backing board 12 of the aforescribed embodiment shown in FIGS. 1 and 2 is formed of. Each outer panel 70 includes an upper marginal portion 74, a face portion 76 depending from marginal portion 74, and a butt portion 78 extending from the lower margin 80 of face portion 76. Face portion 76 of outer panel 70 has an upper margin 82 which parallels its lower margin 80 and includes an integral retainer part 84 which extends along its upper margin 82. Retainer part 84 preferably comprises a downturned, forwardly projecting extension which, in cooperation with the remainder of the face portion, defines an inverted channel 88. Channel 88 has a narrow restricted lower opening 90.

Upper marginal portion 74 of outer panel 70 includes a substantially horizontal web 92 which extends rearwardly from the upper edge of retainer part 84 and which terminates in an upturned, substantially vertical lip 94 located rearwardly of face portion 76. Butt portion 78 of outer panel 70 includes a web 96 which extends rearwardly from the lower margin 80 of the face portion and which terminates in an upturned,

preferably forwardly inclined lip 98. Lip 98 of butt portion 78 is adapted to be inserted upwardly into retainer part channel 88 of a siding unit in the adjacent lower siding course.

Backing board 72 is positioned at the back of face portion 76 of its outer panel 70 with its lower end face 100 abutting and resting upon web 92 of the outer panel 70 of the siding unit in the lower adjacent siding course. The lower marginal portion 101 of the backing board is positioned forwardly of lip 94 of the outer panel 70 of the lower adjacent siding course and serves, when nails 103 or similar securement means are driven through the backing board adjacently above lip 94 of the outer panel and into building siding 104, to cause the lower marginal portion 101 of the backing board to urge lip 94 of the lower adjacent siding panel against the building siding. As best shown in FIG. 4, each outer panel 70 is positioned against its backing board 72 by having its butt portion lip 98 inserted into channel 88 of the outer panel in the lower adjacent siding course, and its upper marginal portion web 92 resting upon upper end face 106 of the backing board. The thickness of each backing board 72 at its upper end face 106 is preferably substantially equal to the distance between rear face 108 of outer panel face portion 76 and rear face 110 of outer panel lip 94 at web 92 so that with lip 94 contacting the outer surface of building siding 104, as shown in FIG. 4, the upper marginal portion 107 of the underlying backing board 72 will be positioned against the outer surface of the building siding.

The method of attaching the siding units shown in FIGS. 3 and 4 above described to building siding 104 is similar to the method described for attaching the building siding units shown in FIGS. 1 and 2. A backing board 72 is first positioned against building siding 104 with its lower end face 100 resting upon web 92 and its lower marginal portion 101 positioned in front of lip 94 of the underlying outer panel 70 in the lower adjacent siding course. Nails 103 are driven through the backing board adjacently above lip 94 of the underlying outer panel 70 in the lower adjacent siding course and into building siding 104, as shown in FIGS. 3 and 4, to anchor the underlying outer panel in position. The butt portion 78 of an unattached outer panel 70 is then positioned against the outer panel of the siding unit in the lower adjacent siding course and slid upwardly causing its lip 98 to be received within channel 88 of the retainer part 84 of the lower adjacent outer panel and interlocked therewith. The upper marginal portion 74 of the unattached outer panel 70 is then swung inwardly until its web 92 is positioned over and rests upon upper end face 106 of its backing board 72. The unattached outer panel 70 can now be released since it will remain positioned against its backing board. Another backing board 72 is now positioned against building siding 104 with its lower end face 100 resting upon web 92 of the last positioned outer panel 70. The assembly sequence is then repeated until all siding units are attached to the building siding. As shown in FIGS. 3 and 4, rear face 108 of each outer panel 70 is spaced outwardly from front face 112 of its backing board 72 and defines, in cooperation with the backing board, an air space 114 located between parts of the face portion of the outer panel and the backing board.

The backing boards 12 and 72 of this invention are positioned in generally the same plane when attached to the building, thus allowing butt portions 18 and 78 of outer panels 10 and 70 of the siding units to be of reduced dimensions at webs 40 and 96, and thereby conserving material and reducing the cost of the siding unit.

It is to be understood that the invention is not to be limited to the details herein given, but may be modified within the scope of the appended claims.

What I claim is:

1. A siding unit for a building or like structure comprising an outer panel and a backing board, said outer panel including spaced upper marginal and butt portions and a connecting face portion, said upper marginal portion including a generally horizontal web extending rearwardly of said face portion and terminating at the rear edge thereof in an upturned generally vertical lip, said face portion having substantially parallel upper and lower margins and including a retainer part extending along the upper margin thereof, said retainer part extending below the web of said upper marginal portion, said butt portion extending rearwardly from the lower margin of said face portion and including an upturned lip, said retainer part receiving in slidable interlocking cooperation the upturned lip of the butt portion of a said outer panel in the upper adjacent siding course, said backing board positioned at the back of the face portion of said first mentioned outer panel and including upper and lower marginal portions, the lower marginal portion of said backing board overlying the upper marginal portion of a said outer panel in the lower adjacent siding course with the vertical lip of said lower adjacent siding course outer panel being located to the rear of said backing board lower marginal portion, the horizontal web of said first mentioned outer panel overlying the upper marginal portion of said backing board and having its vertical lip located to the rear of a said backing board in the upper adjacent siding course, means adjacently above the vertical lip of said lower adjacent siding course outer panel securing said first mentioned backing board to said building or like structure and causing the lower marginal portion of said first mentioned backing board to be urged against the vertical lip of said lower adjacent siding course outer panel, the face portion of said first mentioned outer panel having parts spaced from said first mentioned backing board and defining in conjunction with said first mentioned backing board air space means extending substantially from the retainer portion to the butt portion of said first mentioned outer panel.

2. The siding unit of claim 1 wherein said first mentioned backing board has a lower end face, said end face resting upon the horizontal web of said lower adjacent siding course outer panel, said securing means urging the lower marginal portion of said first mentioned backing board against the vertical lip of said lower adjacent siding course outer panel.

3. The siding unit of claim 2 wherein said first mentioned backing board has an upper end face, the horizontal web of said first mentioned outer panel resting upon said upper end face, the thickness of the upper marginal portion of said first mentioned backing board at its upper end face substantially equalling the distance between the face portion of said first men-

tioned outer panel at its horizontal web and the rear face of the vertical lip of said first mentioned outer panel.

4. The siding unit of claim 1 wherein the face portion of said first mentioned outer panel includes front and rear faces, that portion of said rear face extending from adjacent the retainer portion to the butt portion of said first mentioned outer panel being spaced from said first mentioned backing board.

5. The siding unit of claim 1 wherein the upper and lower marginal portions of said first mentioned backing board are a thin-walled construction, said thin-walled upper marginal portion having a first side wall set in from the front face of said first mentioned backing board and separated therefrom by a first shoulder, said thin-walled lower marginal portion having a second side wall set in from the back face of said first mentioned backing board and separated therefrom by a second shoulder, the horizontal web of said first mentioned outer panel overlying and abutting said first board shoulder with the vertical lip of said first mentioned outer panel positioned adjacently forwardly of said first board side wall, the thin-walled lower marginal portion of said first mentioned backing board overlying the upper marginal portion of said lower ad-

jacent siding course outer panel with said second board side wall positioned adjacently forwardly of the vertical lip of said lower adjacent siding course outer panel.

6. The siding unit of claim 5 wherein the thin-walled upper and lower marginal portions of said first mentioned backing board are continuous with the back and front faces respectively of the first mentioned backing board, and the combined thickness of said thin-walled upper and lower marginal portions and the vertical lip of said first mentioned outer panel is substantially equal to the thickness of said first mentioned backing board as measured between said front and back faces thereof.

7. The siding unit of claim 1 wherein the face portion of said first mentioned outer panel includes at least two generally parallel offset longitudinally extending face parts, the lower edge of the upper one of said face parts extending forwardly of the upper edge of the lower adjacent face part and connected thereto by a web, the upper margin of said first mentioned outer panel face portion and said lower face part upper edge contacting the front face of said first mentioned backing board, each face part except for said contacting margin and edge being spaced from said first mentioned backing board.

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