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Nesbitt

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[54] **SKIRTING FOR MOBILE HOMES**

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[73] Assignee: **Denver Wood Products Co.**, Denver, Colo.

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[52] **U.S. Cl.**..... **52/169**, 52/155, 52/521, 52/540, 52/DIG. 3

[51] **Int. Cl.**..... **E04d 2/38**

[58] **Field of Search**..... 52/155, 169, DIG. 3, 52/409, 478, 521, 529

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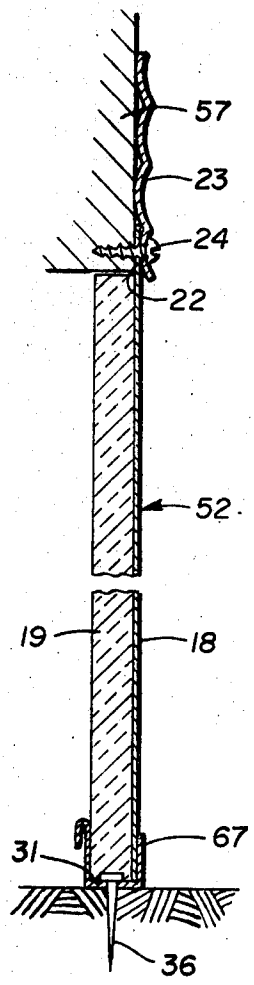
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[57] **ABSTRACT**

A skirting system and components for enclosing an air space beneath mobile homes, trailers and similar structures. The system utilizes metal panels with insulation bonded thereto in position to provide exposed lip edges for cooperative use when erecting the system. The edges are lapped with adjacent panels or components of the structure to provide weathertight joints and continuus insulation. Corner pieces and anchor channels and plates are provided for adjustable positioning between a lower skirt edge and the ground support for the structure.

5 Claims, 11 Drawing Figures



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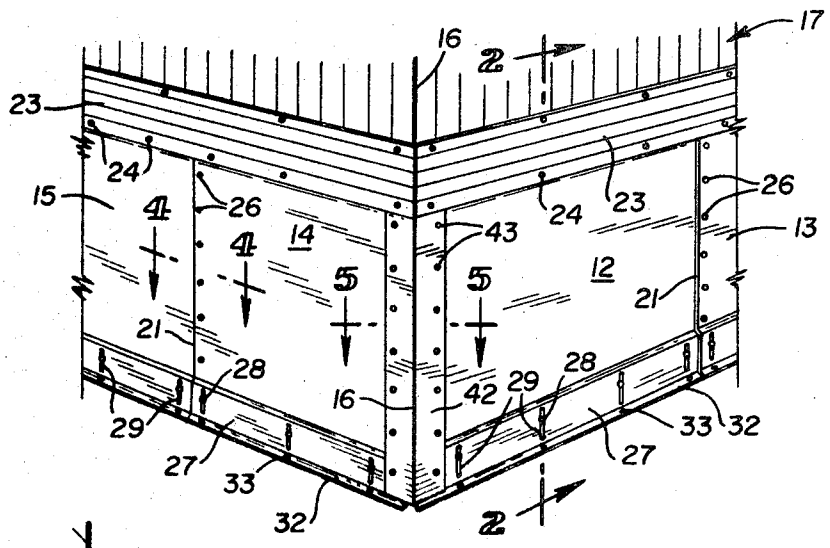


Fig. 1

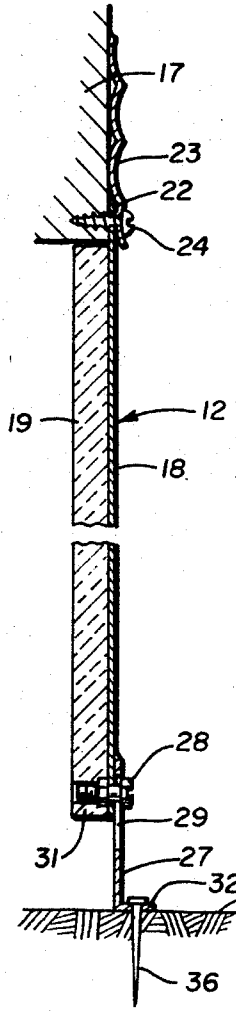


Fig. 2

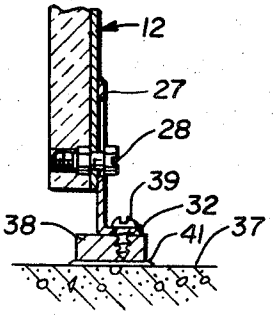


Fig. 3

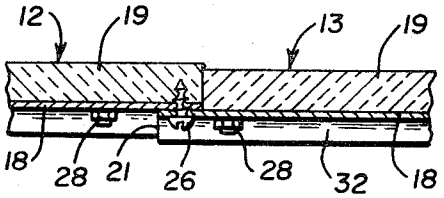


Fig. 4

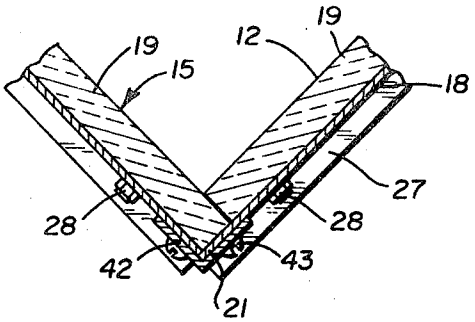


Fig. 5

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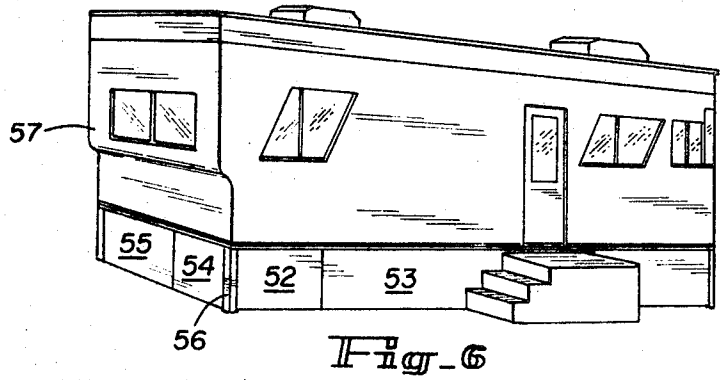


Fig_6

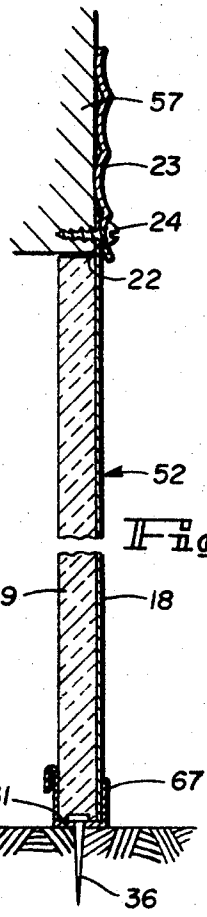


Fig_8

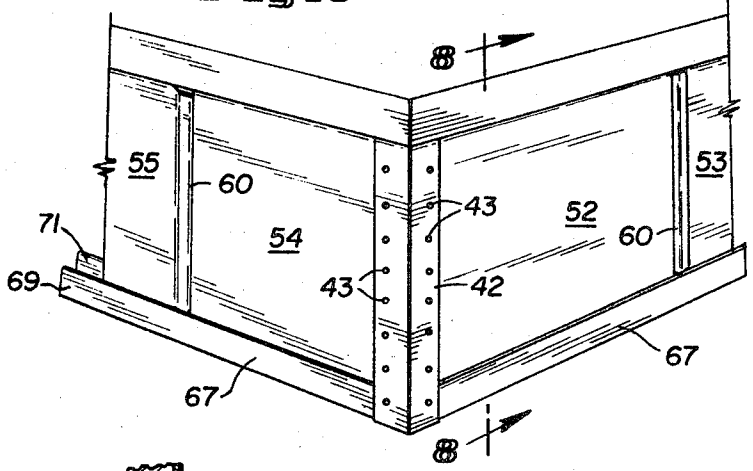


Fig_7

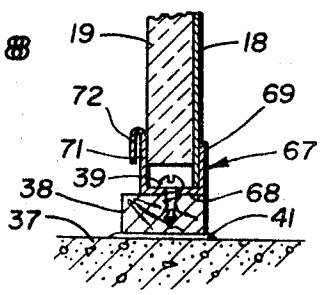


Fig_9

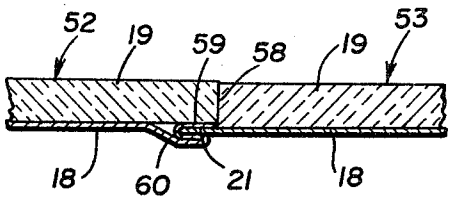


Fig_10

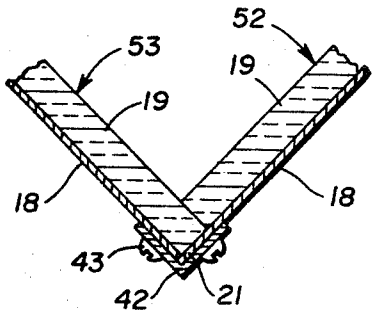


Fig_11

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SKIRTING FOR MOBILE HOMES

BACKGROUND OF THE INVENTION

Many mobile homes are used today at sites or locations that are more or less permanent. When a mobile home is being set on location, it is desirable to enclose the lower perimeter beneath the mobile home or other similar structure to close out hot and cold weather influences. With skirting installed about a mobile home, the floor temperature can be more closely regulated, and heating and cooling expenses can be reduced. In general, owners of such structures have previously had to make up skirting components that were individually fitted to the mobile home and the particular on-site location. The cost of separately prepared or custom skirting systems and the cost of installation has previously been quite significant. Further, where all owners are left to exercise their own design and installation capabilities, the overall appearance of trailer parks and of the individual installations have not been too attractive. With the advent of improved mobile home designs and a corresponding improvement in the general facilities at mobile home sites and parks, a corresponding improvement in skirting system designs and installations is economically and esthetically desireable.

SUMMARY OF THE INVENTION

The present invention provides skirting panels and components that are adaptable for use when enclosing mobile homes, trailers or similar structures at on-site locations. In order to provide an efficient and economical installation that can be readily installed even where adverse on-site conditions exist, this invention provides a plurality of lightweight sandwich type panels that individually provide a hard exterior layer bonded or otherwise joined to an insulation layer. At a top and at one side edge the exterior layer extends past the usually rigid type insulation to provide a lip edge that facilitates engagement of one panel with adjacent panels or with the lower edge of the structure being enclosed. The overlapping edge extensions are of regulated size so that when a plurality of panels are joined each to each the inwardly disposed insulation will be continuous as it extends about the length and width of the mobile home structure, and it will also be continuous from the lower edge of the mobile structure to the bottom edge of the individual panels. On one embodiment a plurality of openings are provided at the edges of the panels to facilitate interengagement of the panels with the mobile structure and with adjacent panels. A separate component adjustable anchor plate is used to bridge any gap between the lower edge of the installed panels and the ground support for the mobile home. In a separate embodiment of the invention, the extension lip edges are joined together through use of a roll formed lock. With this embodiment an anchor channel is provided. Height adjustments are cooperatively provided by the panels and the anchor plates or channels so that the system can be accommodated to irregularities in the contour of the ground support. In the present embodiments a metal or aluminum exterior layer having a decorative surface finish is bonded to a solid type insulation material to provide a sandwich type panel. All of the panels, the anchor plates and channels and the auxiliary corner strips may be prepainted so the total installation will have a decorative appearance complimenting the design and appearance of the mobile structure.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view showing a corner portion of a mobile home skirting installation,

FIG. 2 is a cross-sectional elevation taken along the line 2—2 of FIG. 1 showing a skirting panel and details of its attachment,

FIG. 3 shows an alternate means for applying an anchor plate,

FIG. 4 shows an overlapped arrangement of adjacent panels,

FIG. 5 shows a corner installation inclusive of a corner cover piece,

FIG. 6 is a perspective view showing a mobile home installation,

FIG. 7 is a perspective view showing the corner portion of a mobile home skirting installation,

FIG. 8 is a cross-sectional elevation taken along the line 8—8 of FIG. 7,

FIG. 9 shows an alternate anchor plate installation,

FIG. 10 shows a lapping splice for a plurality of panels, and

FIG. 11 shows a corner installation inclusive of a corner cover piece.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

A first embodiment of the invention is shown in FIGS. 1 through 5 where a plurality of panels 12, 13, 14 and 15 are shown in typical joined arrangement at a corner 16 of a mobile home 17. Each of the panels, such as the panel 12, shown in FIG. 2, is of multilayered construction having an exterior hard surface layer 18 that may be of metal or the like and an inner layer 19 of insulation that is bonded to the outer surface layer 18. Preferably a rigid type of insulation, such as foamed styrene, urethane or the like is used to provide the desirable protection from outside weather influences.

A cement bond or other fastening means is utilized to join the insulation 19 to the outer layer 18 in position to provide an exposed side edge 21 at one end, such as the left end, of each of the separate panels 12–15, etc. Similarly, an exposed top lip 22 is provided along the top edge of all the separate panels. With the insulation disposed back and away from the side or end and top edges 21–22, these end edges may be lapped over adjacent panels as shown in FIG. 4, or they may be used to cover the insulation 19 of a conterminous panel at a corner as shown in FIG. 5. The top lip 22 is provided to facilitate engagement of the separate panels with the mobile home structure itself. As shown in FIG. 2, most mobile homes have a bottom cover or feature strip 23 that may be loosened so top lip 22 can be introduced thereunder. Fasteners, such as self-tapping metal screws 24, can then be applied through the feature strip 23 and the top lips 22 to hold the panels in place.

Once a first panel, such as panel 12, has been positioned, an adjacent panel 13 is placed with its left edge 21 overlapping the end of panel 12, and thereafter fasteners 26 can be applied through openings that are prepunched in the left lip edges 21 of the panels. For purposes of convenience and installation holes may be prepunched at all of the edges of the panels to facilitate engagement with the mobile home or with adjacent pan-

els. Necessarily, the spacing of the openings at all edges is regulated to provide a matching pattern.

When all of the panels necessary to enclose the entire mobile structure have been placed in positions depending from the outer edges of the structure, anchor plates **27** may be applied. These anchor plates are held to the separate panels by through bolts **28** that pass through vertically elongated slots **29** in the anchor plates for engagement in the lower edges **31** of the separate panels **12–15**, etc. The anchor plates **27** are of a bent L shape to provide a lower foot **32** that is itself prepunched at spaced intervals to provide openings **33**. After the anchor plates are moved into positions of engagement with the supporting ground **34**, a plurality of spikes **36** may be driven through the openings **33** to hold the anchor plate in place on the ground. If a hard surface, such as the concrete **37** shown in FIG. **3**, is encountered at positions beneath the edges of the trailer, it is preferable to install a furring strip **38**, such as the piece of lumber shown in FIG. **3**, in aligned position along the concrete **37** so screws **39** may be driven through the openings **33** to engage the furring strip. The furring strip itself is imbedded or cemented to the concrete by use of a flexible type adhesive **41**.

With either installation the elongated slots **29** of anchor plate **27** make it possible to adjust the overall skirting installation so that it can be accommodated to on-site irregularities in the ground support for the mobile home. In order to realize the full advantage of this adjustment feature, it is preferable that the through bolts **28** are not securely tightened to hold the panels and anchor plates in rigid position. If these through bolts **28** are merely snugged, the described skirting installation can accommodate itself to compensate for changes in the respective levels for the mobile home and the ground due to changes in loading for the mobile home or due to ground swell influences and the like. The same anchor plate adjustment features also make it possible for this same skirting installation to be reinstalled without modification at subsequent on-site locations where the distance from the ground support level to the mobile structure may be significantly changed.

In order to complete a typical installation and to provide a completely finished appearance, corner cover pieces **42** may be placed at all corners to cover an otherwise exposed joint. Self-tapping screws **43** may be used at this and other locations to provide a secure installation.

A second embodiment is shown in FIGS. **6–11**. For this embodiment of the invention the separate panels are joined each to each by use of a roll formed lock seam. Typical panels are shown at a corner **56** of the mobile home **57** with panels **52** and **54** being on adjacent sides at the corner **56** and panels **53** and **55** being joined thereto at the seams by identical seam locks **60**. The construction of the separate panels as shown in FIG. **8** is similar to that previously described to provide a hard surface exterior layer **18** bonded to the insulation layer **19**. As in the previous embodiment, the insulation **19** extends from a lower edge **31** upwardly to the bottom of the mobile structure **57**. The panel is joined under a feature strip **23** of the mobile structure by metal screws **24** that pass through the top lip **22** of the panels. As in the previous embodiment and as shown in FIGS. **10** and **11**, a lip edge **21** extends past the insulation **19** at the left edge of each of the panels. This left lip edge **21** is adapted for engagement in a loop seam provided by the seam lock **60**. The type of seam used is comparable to a Pittsburgh lock seam regularly used in sheet metal work; however, the loop is preferably disposed backwardly from the terminal edge **58** of a panel, such as the panel **52**, instead of being adjacent said edge. With this arrangement a longer overlap is provided for the left lip edge **21** and the terminal return segment **59** of the lock seam **60**.

In this embodiment of the invention a modified type of anchor is used to engage and hold the lower edge **31** of the panels. A typical channel anchor is shown in FIGS. **8** and **9**. The channel anchor **67** shown has a base web **68**, outer flange **69** and an inner flange **71**. Inner flange **71** is provided with a return lip **72** to increase the strength and rigidity of the channel. When this channel is to be placed on a ground support, a plurality of spikes **36** may be driven through the base flange **68** to secure the channel in place. On installations above concrete a furring strip **38** may be used that is adhesively bonded to the concrete by a flexible adhesive **41**. As in the previous embodiment, wood screws **39** may be used to secure the anchor channel **67** in place. After the channel **67** has been placed, the separate panels will be engaged between the flanges of the channel. Thereafter the top lip **22** may be secured to the mobile structure. As in the previous embodiment, vertical adjustment is possible, since the anchor channel may be two or three inches deep thereby providing compensation for irregularities in the distance between the mobile structure and its on-site ground support.

At corner installations, as shown in FIG. **11**, the left lip edge **21** still extends past the insulation **19** of the panel **53** to provide a hard surface layer of protection for the total installation. Corner pieces **42** can be installed and held in place with the metal screws **43** to provide a decorative finish.

In the use of this embodiment of the invention, fasteners can be applied through the lock seam return loops of the lock seam itself or simply through the left lip edge **21** and the terminal return segment **59** of the lock seam **60**. In general such fasteners are not required if the top lip edge **22** is securely fastened to the mobile structure. With the panels so restrained at the top edge and with the lower edge engaged in the anchor channel, the lock seam will remain securely engaged.

Through use of the components described for either embodiment an attractive and efficient installation can be made by the owner of any mobile type structure. Where the exterior layer **18** is of a hard surface material, the installation is not subject to deterioration, and it will continue to give good protection from weather and the influences of hot and cold temperatures. Many different types of decorative metal are available in both natural and prepainted condition. Accordingly, the panels described can be provided with various types of decorated surfaces. Various geometric designs are available as well as striated and pebble grain patterns, so the mobile home owner can have a wide choice of decorative textures. In general a textured exterior surface seems to provide improved appearance characteristics. Pebble grain surfaces are in appearance quite similar to the appearance of the foundation walls for conventional housing; accordingly, these finishes are popular. Panels simulating the appearance of brick and rubble stone are available in metal and fiberglass that may be used to provide additional decorative surfaces

for installations of the described type. For exterior panels of the brick or stone type that might have an irregular interior surface, foamed-in-place types of insulation can be used to assure intimate contact and bonding of the interior surface and the insulation layers.

Through use of the present system an attractive, efficient and serviceable installation can be made. Since a minimum of equipment and mechanical aptitude is necessary, the owner of the mobile structure can complete an attractive installation. When the mobile structure is to be moved, the separate panels and components can be removed without damage for storage or for reuse at a new on-site location. The anchor adjustment features incorporated facilitate installation at such new location and accordingly provide added benefits and utility for the system.

I claim:

1. A skirting system and components for use to provide an enclosure beneath mobile homes and similar structures which may have walls terminating at varying positions with respect to different on-site ground support conditions comprising multi-layered panels each inclusive of a protective exterior layer and an inner layer of insulation material of regulated thickness providing a flat back surface engaged to said exterior layer, said panels being of height less than the expected distance between the structure walls and a normal ground support, and said insulation being relieved at a top and side edge of said panels to provide exposed lip edges for said exterior layer, means for attaching said exposed top lip edge to the structure walls, means for engaging an exposed side lip edge of said panels at a position past the terminal edge of the adjacent inner insulation material layer for holding adjacent panels together with the inner insulation layer of adjacent panels in conterminous relationship, an anchor plate element of channel section with upright flanges thereof being adaptable for close sliding and reciprocal engagement with the back surface of said inner layer and the outermost surface of said exterior layer for overlapping the lower edge of said panels and adjustably positionable with respect thereto, and means for engaging said anchor plate with an on-site ground support whereby said panels are maintained in enclosing position about the structure with said panel and anchor plate combination further providing overall height adjustment capabilities.

2. Structure as set forth in claim 1 wherein the top lip edge of said panels is engaged to the structure walls in overlapping relationship whereby said inner insulation layer is in butting relationship with the structure walls.

3. Structure as set forth in claim 2 wherein said panels are disposed in aligned relationship with the inner insulation layers of separate panels likewise being in butting relationship.

4. Structure as set forth in claim 2 and further comprising an angularly formed corner cover for engagement with the exterior layers of adjacent panels at a corner of said mobile structure for holding said exterior layers and the inner insulation layers, respectively, in oppositely oriented conterminous relationship.

5. Structure as set forth in claim 1 and further comprising a double reverse bend type of lock seam disposed inwardly of the edge of a second panel at a position covering said insulation layer and wherein the side lip edge of the first panel is engaged by said lock seam whereby the insulation layers of adjacent panels are maintained in the stated conterminous relationship.

* * * * *