

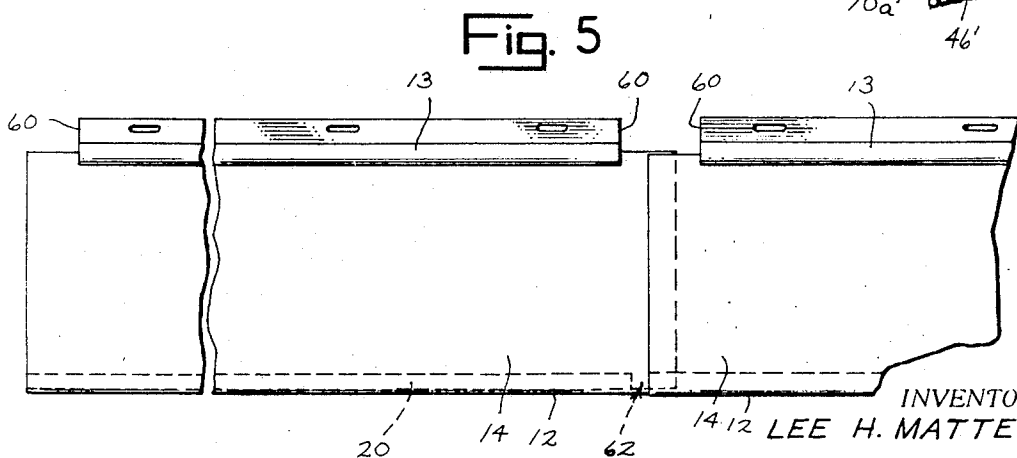
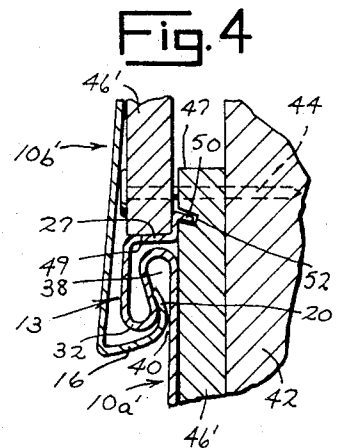
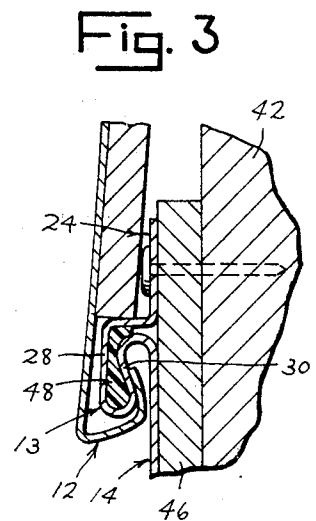
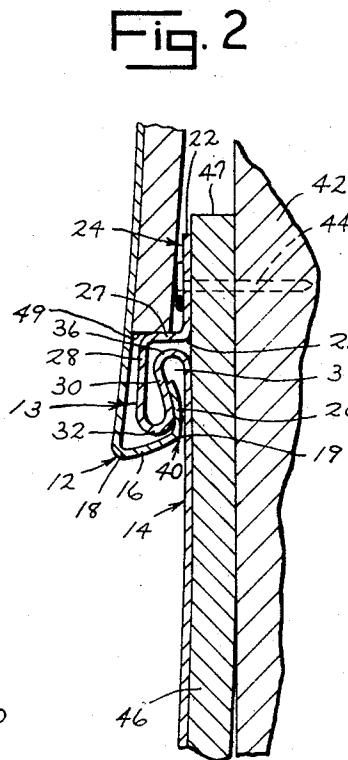
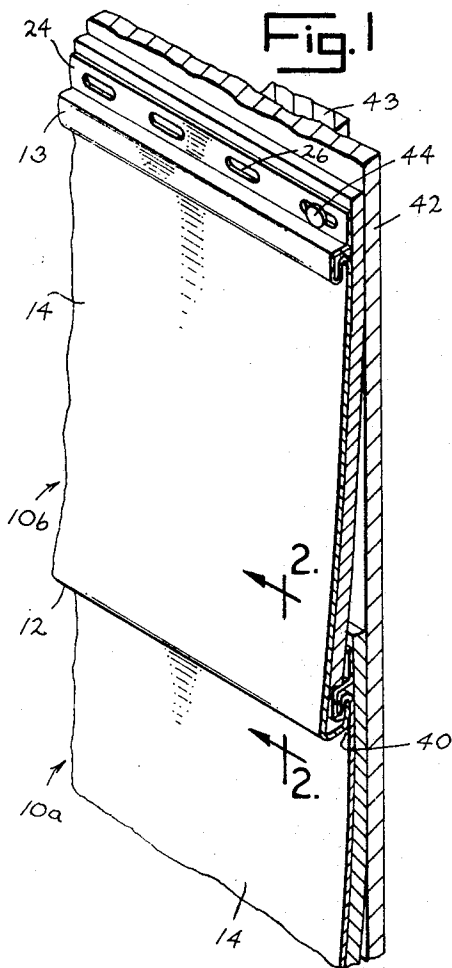
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3,520,099

INTERLOCKING BUILDING SIDING UNIT

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1

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INTERLOCKING BUILDING SIDING UNIT
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U.S. Cl. 52—531 **1 Claim**

ABSTRACT OF THE DISCLOSURE

A building siding unit formed of sheet material and having a panel portion, an upper interlock portion and a lower butt portion. The butt portion of the siding unit includes an upturned rear flange. The interlock portion of the siding unit includes a downturned forward integral fold which is spaced from the upper edge of the unit and which defines a channel which has a lower opening and which is adapted to receive in sliding interlocking engagement the upturned rear flange of the butt portion of an overlapping siding unit in the upper adjacent siding course.

BACKGROUND OF THE INVENTION

This invention relates to one piece interlocking building siding formed from thin sheet material.

Heretofore, one piece interlocking building siding units have been formed by extrusion. When these one piece extruded units are nailed along their upper margins to a building structure, there is a tendency for the exposed face portions of the units to wave and create an undesirable undulating or wavy appearance. Additionally, building siding expands and contracts during use. The expansion and contraction of the siding commonly causes the substantially rigid one piece extruded units to deform from a normal or desired longitudinally flat shape.

SUMMARY OF THE INVENTION

This invention relates to a building siding unit constructed from sheet material of substantially uniform thickness and having an upper nailing portion, a panel portion and spaced integral interlock and butt portions. The panel portion has substantially parallel upper and lower longitudinal margins. The butt portion includes a rearwardly extending web at the lower margin of the panel portion and a flange extending upwardly from the rear of said web. This invention concerns an improvement to the before-described siding unit in that the interlock portion includes a downturned fold defined by a substantially horizontal shoulder web extending forwardly from the lower margin of said nailing portion, an outer web extending downwardly from the outer margin of said shoulder web, an inner web upwardly return bent from the lower margin of said outer web and joined at its upper margin to the upper margin of said panel portion by a second return bend. The inner web, panel portion and second return bend define a longitudinal channel which preferably has a narrow lower mouth or opening and which is adapted to receive in sliding interlocking engagement the upturned flange of the butt portion of an overlapping siding unit in the upper adjacent siding course.

The longitudinal channel of the interlock portion receives in a slidably interlocking manner the upturned flange of the butt portion of the overlapping siding unit in the upper adjacent siding course to permit rapid attachment of the siding units by nailing the nailing portion to the building structure at a nailing slot therein,

2

so as to permit the expansion and contraction of the respective interlocked siding units with negligible buckling or distortion, if any, of the units. When the building siding units are nailed to the building structure at the nailing portion of the units above the interlock portion, any distortion occurring by reason of this nailing or the expansion or contraction of a siding unit or units between fixed points of attachment is absorbed by the fold at the interlock portion and is not transmitted to the exposed face or panel portion of the units.

Accordingly, it is an object of this invention to provide a building siding unit which is constructed from sheet material and which has a construction that minimizes distortion and deformation, if any, of the siding units due to the expansion and contraction thereof when in use.

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

A further object of this invention is to provide a building siding unit having a construction which prevents distortion of the face portion of the siding unit upon securement to a building structure.

Other 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 building siding unit of this invention shown attached to a building structure.

FIG. 2 is a fragmentary detail sectional view taken along line 2—2 of FIG. 1.

FIG. 3 is a fragmentary detail sectional view of a modified embodiment of the building siding unit taken along line 2—2 of FIG. 1.

FIG. 4 is a fragmentary detail sectional view similar to FIG. 2 and illustrates another embodiment of the building siding unit of this invention.

FIG. 5 is a fragmentary side elevation of one course of building siding units of this invention.

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 their application and practical use to enable others skilled in the art to best utilize the invention.

One embodiment of the building siding unit of this invention is shown in FIGS. 1 and 2 as attached to inner building siding sheath 42 which is carried by building frame studs 43. A siding unit in one course is designated 10a and an overlapping siding unit in the upper adjacent siding course is designated 10b. Both siding units 10a and 10b are of like construction.

Each siding unit is preferably constructed from thin sheet material having a substantially uniform thickness. The sheet material may be formed of a plastic material such as polyvinyl chloride having a thickness from .030 to .050 inch, or a metallic material, such as aluminum having a thickness of .019 or .024 inch. Each siding unit includes a nail portion 24, an interlock portion 13, face or panel portion 14 and a butt portion 12. Butt portion 12 includes a rearwardly extending web 16 which is integrally joined to and preferably bent at an acute angle at 18 from the lower part of panel portion 14 and termi-

3

rates in an upturned flange 20 which extends in upwardly converging relation to panel portion 14 from a bend 19.

The upper edge 22 of each siding unit is parallel to bend 18 defining the lower edge thereof. The upper marginal or nailing portion 24 extends along upper edge 22 of each siding unit and preferably contains a series of spaced longitudinally elongated apertures 26.

The interlock portion 13 of each siding unit includes a forwardly extending shoulder web 27 which projects from the upper nail portion 24 at a bend 25 of approximately 90°. A downwardly extending outer off-set web 28 is bent from the outer part of shoulder web 27 at approximately 90° from web 27. An inner web 30 is return bent from the lower part of outer web 28 on an arcuate bend 32 of less diameter than the spacing between web 28 and panel portion 14. Inner web 30 joins the upper part of panel portion 14 at an arcuate bend 36. Inner web 30 is preferably inclined in an upwardly diverging relation to panel portion 14.

The aforescribed inner web 30, arcuate bend 36, and the upper part of panel portion 14 define an inverted longitudinal channel 38 having a narrow lower mouth or opening 40. The upper part of panel portion 14 and nailing portion 24 preferably lie in substantially the same plane. Panel portion 14 is preferably concavo-convex with its concave face preferably exposed when installed.

Each siding unit may be utilized with a backing panel or board 46 which is positioned at the back side of panel portion 14 and nailing portion 24 when the siding unit is secured to a building structure. Backing panel 46 is preferably of a substantially rigid construction and may comprise insulative fiber board.

To secure siding units 10a and 10b to the inner siding sheath 42, as shown in FIG. 1, the units 10a in the lower siding course and backing panels 46 are secured to sheath 42 by means of nails 44 or similar securing means which are inserted through apertures 26 in the nailing portion 24 and driven through the upper margin of backing panel 46 and into sheath 42. Then the butt portion flange 20 of a unit 10b of the next upper course is inserted upwardly through opening 40 into channel 38 of the interlock portion 13 of a siding unit 10a to a position at which web 16 abuts the bend 32 of the lower unit interlock portion. A backing panel 46 is then inserted behind unit 10b with its lower edge 49 preferably abutting and resting upon shoulder web 27 of the lower unit 10a. Flange 20 of unit 10b is so sized that, with units 10a and 10b positioned and interlocked as described, the upper edge 21 of the flange 20 is spaced below arcuate bend 36 of the interlock portion of unit 10a so that there will be minimum resistance to longitudinal sliding of units 10a and 10b relative to each other. Upper edge 47 of each backing panel 46 preferably extends to or slightly above upper edge 22 of the overlying siding unit 10b. Nails 44 are then driven through apertures 26 in unit 10b and the upper margin of the panel 46 underlying unit 10b and into the sheath 42. It is to be understood that the use of backing panel 46 is optional and that siding units 10a and 10b may be secured directly to inner building sheath 42.

FIG. 3 illustrates a modified construction of the siding unit embodiment shown in FIGS. 1 and 2 and includes a substantially rigid filler material 48 disposed within the interlock portion 13 of each unit between the outer web 28 and the inner web 30 thereof. This filler material 48, which may consist of such material as polyurethane or polystyrene foam, on an epoxy or other resin, adds rigidity to the building siding unit without sacrificing the distortion absorption characteristics of interlock portion of the unit during expansion and contraction thereof.

FIG. 4 illustrates another embodiment of this invention in which upper marginal or nail portion 24 of each siding unit is modified to include a rearward and downwardly inclined flange 50. The siding units of this embodiment, hereinafter designated as lower course unit 10a' and upper ad-

4

jacent course unit 10b', are each intended to be used with a backing panel 46'. Each backing panel 46' has a downwardly and rearwardly inclined slot 52 which is formed parallel to and adjacent the upper edge 47 thereof and which is adapted to receive flange 50.

To install building siding units 10a' and 10b', the units 10a' in the lower siding course and backing panel 46' are first attached to inner building siding sheath 42 by nailing or other similar securement means. Flange 50 of marginal portion 24 of siding unit 10a' is received within slot 52 of the underlying backing panel 46'. Another backing panel 46' is placed against building sheath 42 with its lower edge 49 preferably resting upon shoulder web 27 of an adjacent lower unit 10a' and overlapping upper edge 47 of the lower adjacent backing panel thereof. This upper backing panel 46' is secured to siding 42 by nails 44 or similar securement means which are inserted through the overlapping parts of the backing panels 46' and anchored into sheathing 42. The butt portion flange 20 of an adjacent upper siding course unit 10b' is inserted upwardly through opening 40 of channel 38 of interlock portion 13 of a lower siding unit 10a' to a position at which web 16 preferably abuts bend 32 of the interlock portion of lower siding unit 10a' and flange 50 of the interlock portion of upper siding unit 10b' is received within slot 52 in the underlying backing panel 46'. Slot 52 in each backing panel 46' is so positioned relative to lower edge 49 thereof that, when web 16 and bend 32 of the upper and lower siding units 10b' and 10a' abut one another, flange 50 can be slipped over the lower lip of and received within slot 52 of the underlying backing panel as it rests upon web 27 of lower unit 10a'.

As an additional modification of this invention, each siding unit may be modified by having its panel portion 14 and butt portion 12 extend endwise beyond each end 60 of its interlock portion 13. The panel portions 14 of adjacent units in the same course overlap, as shown in FIG. 5, with opposed ends 60 of the siding units being spaced apart and the ends of the butt portions 12 thereof being slidably interlocked so as to permit longitudinal expansion and contraction of the siding units in the course without deforming respective panel portions 14 thereof. The upturned flange 20 of the overlapped end of each butt portion 12 is cut away at 62 so as to provide for a free sliding interfit of siding units.

The building siding units of this invention are of integral one piece construction and may be formed from blank sheet material which is formed or shaped by a series of progressive bending or forming dies.

What I claim is:

1. In a building siding unit comprising sheet material having an upper marginal portion, a panel portion and an integral butt portion; said butt portion including a web extending rearwardly from the lower margin of said panel portion and an upturned flange extending from the rear margin of said web; the improvement comprising an interlock portion joining said marginal portion and said panel portion; said interlock portion including a substantially horizontal shoulder web extending forwardly from the lower edge of said marginal portion; an outer web extending downwardly from the outer edge of said shoulder web; and an inner web return bent from the lower margin of said outer web and joined at its upper margin by a second bend to the upper margin of said panel portion; the upper margin of said panel portion, said inner web and said second bend defining a longitudinal channel having a lower opening; said channel being adapted to receive in slidable interlocking cooperation the upturned flange of the butt portion of an overlapping siding unit in the adjacent upper course; and a substantially rigid backing panel having upper and lower edges and having a longitudinal slot positioned adjacent the upper edge thereof; said marginal portion including a rearwardly downwardly inclined flange; said last mentioned flange being received within said backing panel slot as the lower edge of said backing panel abuts

5

and rests upon the shoulder web of the interlock portion of an overlapped siding unit in the adjacent lower course.

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