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LEVELING MEANS FOR ALUMINUM SIDING PANEL

George Epstein, Akron, Ohio, assignor to Alside, Inc., Akron, Ohio, a corporation of Ohio
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This invention relates to the art of aluminum siding and in particular has reference to means for securing siding panels to the uneven surfaces of existing walls so that the same are uniformly disposed with regard to an imaginary vertical plane.

In the art of aluminum siding manufacture it has long been known that siding panels can be provided with upper and lower marginal edges that are specially shaped for interlocking purposes, with nailing tabs of various types being struck from the upper marginal edge so as to secure the panel to an existing wall surface in interlocked relationship to an adjacent panel.

The nailing edge above referred to is usually either defined by a series of tabs containing nail holes as shown in Rauhen U.S. Patent 2,991,592, or a continuous strip with spaced nail holes as shown in Domar U.S. Patent 3,157,003. In either case the nailing surface is intended to be parallel to an imaginary vertical plane during and after installation for aesthetic purposes and also to permit proper interlocking between adjacent panels.

In the normal instance nails are merely driven through the holes in the nailing surface to attach the same to the existing wall with the head of the nail abutting one side of the nailing surface and with the other side of the nailing surface abutting the wall surface to form a tight connection.

It has been found, however, that the existing wall surfaces to which the panels are nailed are not always even or perfectly vertical. Thus, in using conventional nailing tabs or strips, when the nails are driven all the way into an uneven wall surface the heads of adjacent nails will not be in the same plane and the panel will be deformed to coincide with the unevenness of the wall.

This detracts from the aesthetic appearance of the completed job and also makes it difficult to interlock the aforesaid panels, since the locking flanges are distorted throughout their length to preclude proper interfitting. Also it should be noted that if the nails are driven in so that all the nail heads are maintained in the same plane, there will be a loose connection in depressed areas of the wall since there will be no abutted relationship between the nail head, the nailing surface and the wall.

It has been found that the aforementioned difficulties can be obviated by providing axially collapsible leveling means which have their opposed axial ends bearing against the nail head and nailing surface respectively so as to provide a supported relationship therebetween while simultaneously effectuating a leveled condition of the nailing edges.

In the preferred form of the invention, the leveling means comprise axially collapsible hollow inserts that may be received in the nail openings for reception of the usual nails, with the insert collapsing during nailing to varying degrees to compensate for unevenness in the wall surface while maintaining the nailing tab itself in a "straight edge" condition.

In this fashion the head of an insert will abut one side of the nailing tab or strip while the opposed side of the nailing tab abuts the bowed out portion of the collapsed insert, with the opposed end of the collapsed insert in turn abutting the wall surface. Thus, the nailing tab or strip is maintained in true vertical position regardless of its distance from the wall surface.

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It has further been found that by providing a series of lands and grooves on the nailing insert, that the collapsible features thereof will be enhanced.

It has further been discovered that similar results can be achieved by striking the tab to provide integral nail receiving members of similar shape to the aforesaid inserts, with the integral members performing identical to said inserts.

Accordingly, production of a collapsible leveling means of the type above described becomes the principal object of this invention, with objects thereof becoming more apparent upon a reading of the following brief specification, interpreted in the light of the accompanying drawings.

Of the drawings:

FIGURE 1 is a perspective view of a panel partially broken away and shown secured to a wall surface by a series of nails inserted through an equivalent number of leveling inserts.

FIGURE 2 is a top plan view of a section of the panel secured to an uneven wall surface and showing the leveling inserts in various collapsed positions.

FIGURE 3 is a side elevation of the leveling insert in uncollapsed position.

FIGURE 4 is a side elevation of the leveling insert in partially collapsed position.

FIGURE 5 is a side elevation showing one panel secured to an uneven wall and another panel interlocked with the first panel and in the process of being secured thereto with the leveling insert and nail being exploded therefrom.

FIGURE 6 is a sectional view of the integral tab construction.

Referring now to the drawings and in particular to FIGURES 1 and 5 thereof, it will first be noted that identical siding panels 10, 10 are secured to a wall surface W in interlocking relationship with respect to each other by the use of inserts 20, 20 and with such inserts being positioned between the upper nailing edges 12, 12 of each panel and the wall member W so as to receive nail members 30, 30 therethrough as shown in FIGURE 1.

In this regard the panels 10, 10 are identical and include, in addition to the upper nailing edge 12, a central body portion 11, an upper locking rib 13, and a lower in-turned edge 14 that has an in-turned flange 14a for the purpose of interlocking with the member 13 as clearly shown in FIGURE 5.

Additionally, and as best shown in FIGURE 1, the upper nailing edge 12 includes front and rear surfaces 12b and 12c, a top surface 12d and a series of opposed nailing holes 12a, 12a.

The inserts 20, 20 per se are best shown and described in FIGURES 1, 3 and 4 of the drawings, wherein it will be noted that such inserts are generally of tubular configuration so as to include a hollow body portion 21, an enlarged head 22, and a blind end wall 23, with the inserts preferably being made of a resilient plastic-like material such as polyethylene for the purpose of facilitating the requisite axial collapsing thereof during installation of the siding panels 10, 10.

To facilitate such collapse the tubular body portion 21 is provided with a series of rib-like circumferential projections 24, 24 that define land areas 23, 23 therebetween, with such an arrangement facilitating the collapse from the normal position of FIGURE 3 to the collapsed, bowed position of FIGURE 4.

Turning next then to FIGURES 2 and 5, for a discussion of the application of the panel 10 to the wall W and considering first FIGURE 2, it will be noted that the wall surface W is uneven and thus, when the panel 10 is secured thereto, it is merely necessary to insert the leveling inserts 20, 20 into the nail holes 12a, 12a followed by insertion of the nails 30, 30 into the insert whereupon the

same pierces wall 23 so as to be capable of being driven into the wall W. During such driving, when the head 32 of each nail contacts the head 22 of the insert it is believed apparent that further driving pressure on the nail 30 will cause the insert 20 to be axially collapsed to the bowed condition shown in FIGURES 2, 4 and 5.

At this time head 22 of insert 20 will abut surface 12b, while surface 12c of nailing strip 12 will abut the bowed-out body 21 of the insert, with the opposed end 23 of the insert abutting the wall surface W, to thus insure a tight connection between the panel 10 and the wall W.

It should be kept in mind here that the surfaces 12b and 12c should be perpendicular to the ground and in this regard, and as shown in FIGURE 2, this can be accomplished by driving adjacent nails 30, 30 into the wall varying depths. In this fashion the unevenness of the wall surface is compensated for but the panel 10 is securely attached to the wall W and surfaces 12b and 12c are maintained in a continuous vertical plane.

FIGURE 5, an elevation, shows another application of the features of this invention where again the wall surface W is uneven with respect to vertical plane V. In this regard the bottom panel 10 is secured to the wall with nail 30 being driven into the wall W far enough to retain the nailing surface 12 in a vertical position. The bottom flange 14 of the adjacent panel is then interlocked to the upper flange 13 of the first panel and the panel is nailed to the wall so that the surfaces 12b and 12c of the nailing strip 12 are again vertical and in line with the corresponding surfaces of the panel below. This process may be repeated until all panels are in place.

Thus, it has been shown that by providing collapsible leveling inserts for use with aluminum siding panels, the panels can be secured to any existing wall surface regardless of the unevenness thereof and with the resulting completed paneled wall being in perfect alignment and being securely interlocked.

It should be noted that while nailing "strips" are referred to herein, the invention can also be used with nailing tabs with equal advantage.

It should also be noted that no particular material is specified for the inserts, with it being understood that materials such as plastic, which are compressible are appropriate.

Also and with reference to the provision of means for assisting in the desired axial collapse, it is to be noted that other means such as grooves or provision of an accordion-like cross sectional configuration could be employed, with it being provided in each instance of such construction that the tubular body portion have inherent recovery property in its deformed condition so as to, in effect, assert a separating pressure between panel and wall to thus insure a tight connection.

The modified form of the invention shown in FIGURE 6 envisions the use of an integral nail receiving terminal 60 that replaces the insert 20 previously described in connection with FIGURES 1 through 5.

Preferably, the member 60 is struck from the tab 12 and is provided with the groove 61 that facilitates deflection to

the chain-dotted line position shown in FIGURE 6. Operation of the modified form of the invention would merely involve the insertion of the nails through the member 60 for piercing engagement with wall W.

It will also be seen how the aforementioned invention permits the direct application of aluminum paneling to masonry wall surfaces due to the fact that the plastic inserts will serve as an insulation to space the panel from the masonry wall per se.

While a full and complete description of the invention has been set forth in accordance with the dictates of the patent statutes, it is to be understood that the invention is not intended to be limited to the specific embodiment shown and that modifications of the invention may be resorted to without departing from the spirit hereof or the scope of the appended claim.

What is claimed is:

1. An aluminum siding panel of the character described, comprising;

(A) a unitary panel having

- (1) a flat body section having front and rear faces,
- (2) a nailing edge defined by the upper edge of said body section,
- (3) a lower edge adapted to interlock with the upper edge of an identical adjacent panel;

(B) and leveling means

- (1) carried by and projecting rearwardly of said nailing edge,
- (2) being adapted to receive a nail therethrough whereby said panel can be secured with respect to a wall surface,
- (3) and means for varying the extent of rearward projection of said leveling means whereby said nailing edge can be secured to said wall in straight line condition notwithstanding unevenness in said wall surface,
- (4) said leveling means being integral with said nailing edge and including an external groove extending circumferentially thereof.

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FRANK L. ABBOTT, *Primary Examiner.*

ALFRED C. PERHAM, *Examiner.*