Nov. 12, 1963 S. Z. TRACHTENBERG 3,110,130

METAL SIDING FOR BUILDINGS

Filed July 1, 1960

Fig.1.

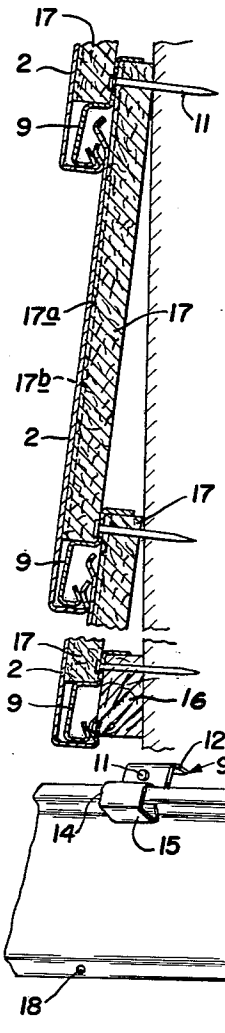


Fig.2.

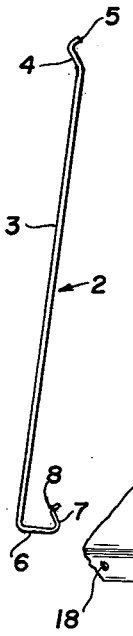


Fig.3.

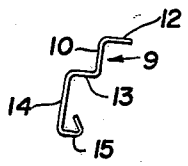


Fig.4.

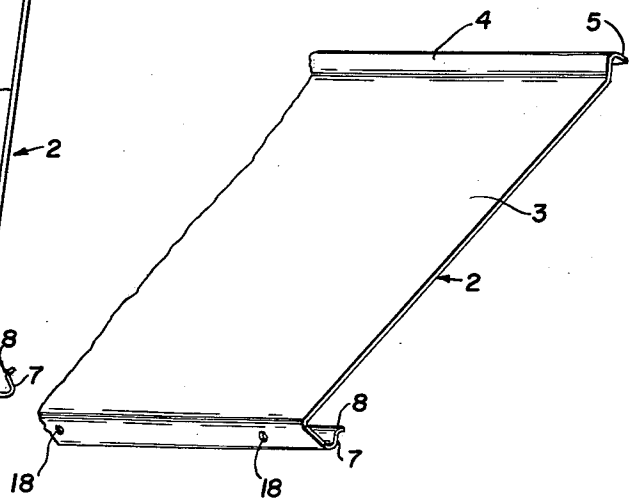


Fig.5.

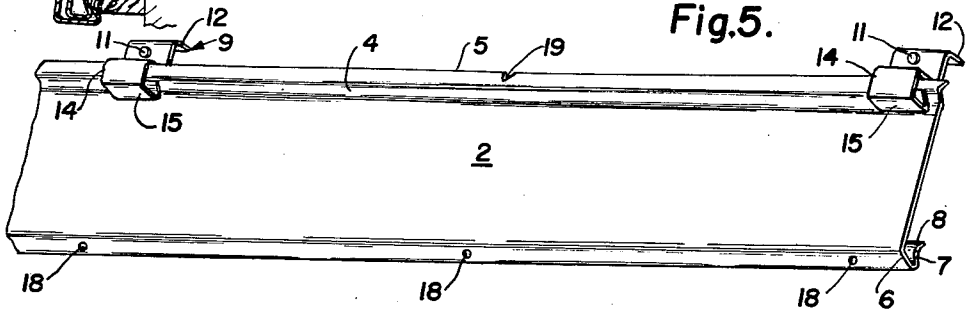
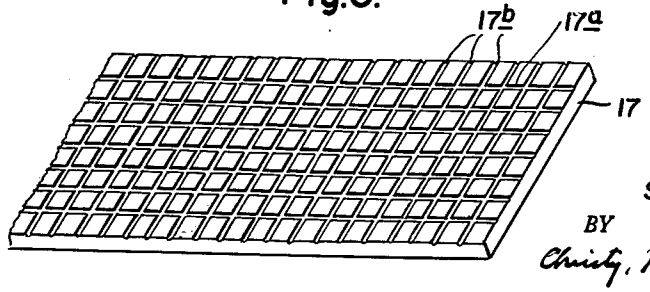


Fig.6.



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METAL SIDING FOR BUILDINGS

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1 Claim. (Cl. 50—245)

This invention is for an improvement in siding for buildings and is especially applicable to metal siding in the form of elongated panels secured in overlapping horizontal relation in a manner simulating clapboard in the finished wall.

Sheet metal siding of the type to which the present invention relates is widely used both in new home construction and in recovering old buildings. Generally, but not necessarily, it is formed of aluminum carrying a surface covering of paint or coating, and the various brands differ from one another in only minor respects, if at all. They often are provided with an insulating board or layer of insulating material at the back, both for thermal insulation and sound deadening, but this, too, is not necessary. All of those metal sidings which I have encountered as a home improvement contractor are alike, in that each board or panel is nailed to the building at its top edge, and the top edge has some form of hook into which a complementary hook on the lower edge of the next panel above is engaged, so that as the siding is secured in place, each succeeding panel covers the nails at the top of the panel below. While this is desirable, in that the nails are concealed, it has a serious disadvantage.

Being usually made of relatively thin metal, it may be damaged in various ways. The applicator himself may dent the metal; a painter may bang it with a ladder, or a child hit it with a stone or club or ball; or it may be damaged in diverse other ways. When this happens, there is little than can be done to replace the damaged panel, unless each course of siding is removed from the top down to the level of the damaged one. Makeshift attempts at patching are seldom satisfactory. Even where there is no damage to a panel, removal of one or more may be necessary to gain access to something inside the wall.

A primary object of the present invention is to provide a siding in which the nailing is completely concealed, but wherein a panel or panels may be removed and replaced without disturbing other panels.

A further object of the present invention is to provide a new siding panel and fastening which will facilitate the application of the siding and hold it firmly in place, but which can be produced with a saving of metal over interlocking panels commonly available, and which may be made from sheet metal in roll-forming machines with the same facility as commercial siding now in use.

A further object of my invention is to provide siding which may be insulated, and wherein the insulation is protected against moisture accumulation.

These and other objects and advantages are secured by my invention, which may be understood by reference to the accompanying drawings, in which:

FIG. 1 is a transverse vertical section representing a fragment of a siding embodying my invention in place on a building;

FIG. 2 is an end view on a larger scale of a single siding panel;

FIG. 3 is an edge view of one of the clips;

FIG. 4 is a perspective view of a portion of a single panel of the siding;

FIG. 5 is a fragmentary front elevational view showing the manner of applying the siding and clips; and

FIG. 6 is a plan view of one side of an insulation board for use in the present invention.

According to the present invention, each sheet metal siding strip or panel, designated generally as 2, has a main exposed area 3. Along its top edge and parallel therewith is formed a ridge 4 that extends outwardly from the plane of the main area 3. The top edge of the panel designated 5, is at the upper base of this ridge.

The lower edge portion of the panel is turned rearwardly, as indicated at 6, and then upwardly at 7, to form a U-shaped channel at the rear of the panel. The rear flange of the channel is formed with a forwardly-protruding ridge 8 along its upper edge.

For securing the panels to a wall there are clips at intervals along the top edges of the panels, these clips being designated generally as 9. As here shown, each clip has a flat portion 10 through which a nail 11 may be driven into the wall. Where insulation boards are used at the back of the metal panels, as shown in the drawings, the top edge of the portion 10 has a rearwardly-turned flange 12, but with no backing board the flange 12 is omitted. At the bottom of the flat portion 10, the clip has an outwardly-turned portion or step 13, below which is a second flat portion 14. The bottom edge of portion 14 is turned rearwardly, and then upwardly at 15 to form a kind of bead or roll on the rear surface of the lower end of the clip. The length of the clip from the step 13 to the inwardly-turned lower edge portion 14 is slightly greater than the combined widths of the two ridges 4 and 8 when two panels are lapped over each other with the ridge 8 of an upper panel just below ridge 4 of the next lower panel.

In the application of the siding to a building, assuming that insulation boards are used, a starter course is provided by securing to the bottom of the wall a horizontal strip 16 equal in thickness to the insulation board. A row of spaced clips 9 is nailed to this strip, with the inturned flange 12 on the top edge of the strip and with the lower end projecting below the strip. The clips may be desirably spaced at 16 or 18 inches from one another.

The insulating board, designated 17, may have been adhered to the back of the metal panel at any time previously, or the two may be separate with an adhesive on the board that will cure and adhere the board to the metal after the two are together on the building. For the purpose of this description, it may be assumed that the board will be adhered to the metal at the time the siding is being applied, but as indicated above, a board may be applied and then the metal. When the board is adhered to the metal, the top margin of the board will project above the top edge of the panel, but the lower edge of the board will be above the U-shaped channel at the back of the panel. The lower edge of the board extends down only to a level where it will press against the step 13 of the clips when the U-shaped channel at the back of the panel is hooked under the lower end of the clip. Thus, at the bottom of the wall, the first panel has its lower channel portion hooked around the downwardly-projecting ends of the clips first applied with the insulation board having its bottom edge engaging the steps 13 of the several clips.

With the first panel and board in position, a second series of clips 9 is nailed along the exposed top edge of the insulation board of the first course, the nails preferably passing through the insulation board into the sheathing or studs of the building. This second row of clips will have their lower ends extending down beyond the ridge of the first panel. The clips are preferably of spring metal or quite resilient, so that the lower terminal of the clip will press against the upper edge of the panel. With the clips so placed, the second panel with its insulation board has its flange 7 with the ridge 8 forced up under the lower end of the clip, and when the ridge 8 is above the part 15 of the clip, the second board will be held in place. The lower edge of the insulation board for the second panel comes against step 13 and thereby adds stiffness to the lower end of the clip causing it to press more tightly against the overlapped portions of

the two metal panels. Thus each course in turn is secured in place with the nails passing only through the clips and, where insulation board is used, the upper edge of the insulation boards.

If, in the finish building, it should be necessary to remove a damaged panel or open up the wall for any purpose, the panel to be removed may be sawed lengthwise to separate it into two parts, and the lower part may be disengaged from the clip at its lower edge and the upper part can be pulled down so that the ridge along its upper edge will spring the overlapping edge of the panel above and the clips yield outwardly. Then a new panel may be applied simply by forcing the flange 7 with its ridge 8 under the clips at the top of the course beneath and the upper edge under the flange 7 of the course above, and the resilience of the clips and panels will enable this to be accomplished with no deformation of the replacement panel or the adjacent upper and lower original panels. More than a single panel may be removed by following a like procedure.

Since the insulation board 17 does not extend below the clips, but terminates at the step 13, there is an open air space and channel at the bottom of each panel to provide for air circulation, the collection of condensate, and prevent deterioration of the insulation. Weep holes 18 are provided at intervals along the flange 7 to permit drainage of condensate and ventilation. By providing a notch 19 at the top edge in line with each hole and placing the clips over each notch, one can determine from the holes at the bottom the location of the concealed clips in the finished wall. This is helpful in removing a panel and replacing it with another. Usually the holes will be located on centers corresponding to the spacing of the studs in the building.

As shown in FIG. 6, the insulation board 17 may have striations rolled or formed into one or both surfaces thereof. These striations run horizontally, as indicated by 17*a* and vertically as indicated at 17*b*. If in one surface only they may be next to the metal in which case they allow sufficient circulation of air, even when the board is adhesively secured to the panel to avoid "sweating" between the board and the metal panel, or at least enable moisture which condenses on the back of the metal panel to be evaporated. The vertical striations open into the air space in the lower edge of each metal panel into which the weep holes 18 open. If provided on the rear surface of the panel they allow restricted ventilation between the overlapping areas of two board or between the board and the side of the building to which the upper end of each board is nailed.

While the ridge 4 along the top of each panel is not necessary, it requires little extra metal and prevents wind-driven rain from seeping up, or breaks capillary flow of moisture from the exposed surface of the panel.

It will be understood that while I have shown and described one particular form of my invention, it may be modified in various ways within the contemplation of my invention.

I claim:

A siding for buildings comprising a plurality of similar horizontally-extending panels, each panel comprising a metal outer member and an insulating board, the insulating boards being of uniform thickness with the top edge portion only of each board contacting the side of the building and the bottom edge of each board resting on and lapping over the top edge of the board below, a plurality of spaced metal clips along the top edge of each board, each clip having a top inwardly-turned end portion engaging the edge of the board along which it is placed, each clip having a flat nailing area resing on the front face of the top edge of the panel on which it is placed, a nail passing through each nailing area of the clip and through the top edge portion of the board into the building and securing both the board and the clip to the side of the building, each clip having an outwardly-projecting step below the nailing area thereof against which the lower edge of the board above rests with the nailing area being confined between the overlapping areas of the two boards, each metal outer member overlying the board with its lower edge projecting downwardly below the lower edge of the board and having its lower edge turned inwardly toward the building and upwardly to form a channel along the back of the lower edge of the metal member, the upper edge of each metal member having a rib therealong with its upper edge terminating adjacent the step of the clips along its top, leaving the top edge of each board uncovered by the metal, the channel portion at the lower edge of one metal member having its inner flange terminating at the rib along the top edge of the metal member next below it, the clip having a downwardly and inwardly-turned extension below the step portion thereof fitted into the channel at the lower edge of the metal member of the next panel above it and bearing against said inner flange to hold the lower edge of the metal member of said upper panel against outward movement away from the side of the building, the nailing thereby being entirely clear of the cover sheet whereby any cover may be removed and replaced while leaving the insulating board beneath it in place and without removing the cover plates of adjacent courses.

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