June 20, 1967 S. Z. TRACHTENBERG 3,325,952

METAL SIDING WITH SNAP ACTING INTERLOCK

Filed Dec. 8, 1964 2 Sheets-Sheet 1

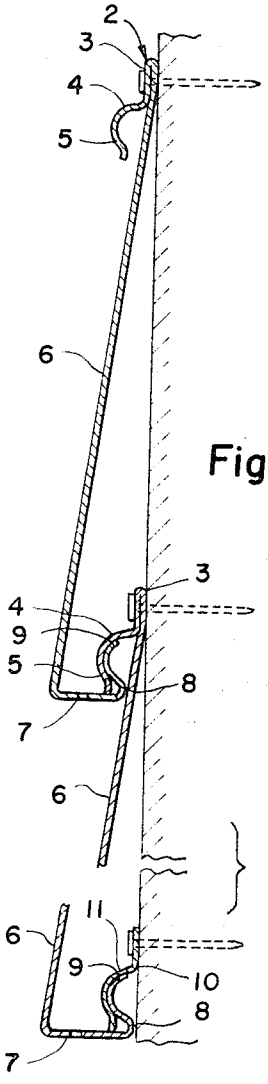



Fig.1.

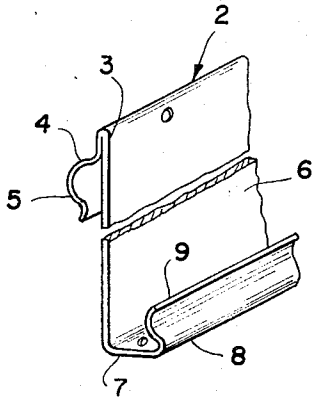



Fig.2.

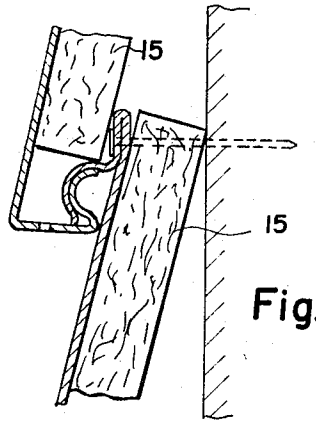



Fig.3.

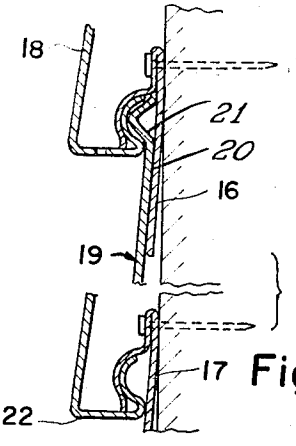



Fig.4.

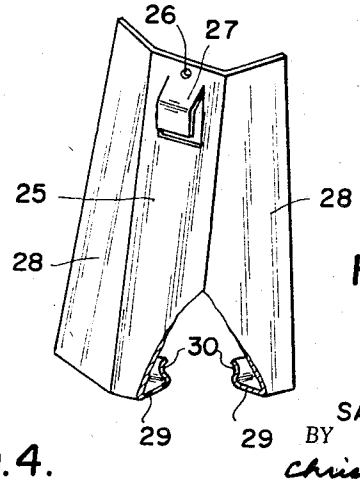



Fig.5.

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METAL SIDING WITH SNAP ACTING INTERLOCK

Filed Dec. 8, 1964 2 Sheets-Sheet 2

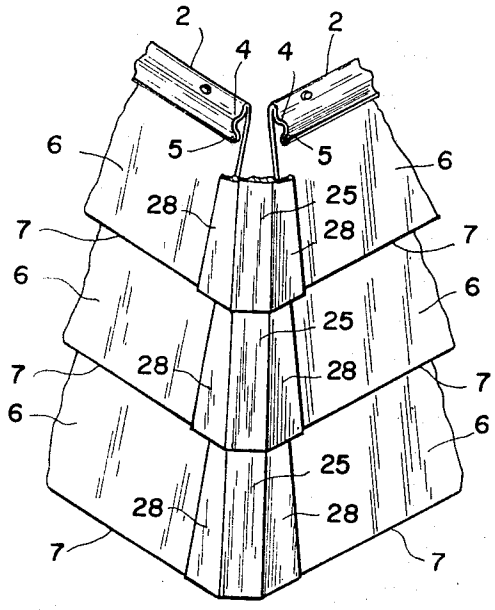



Fig.6.

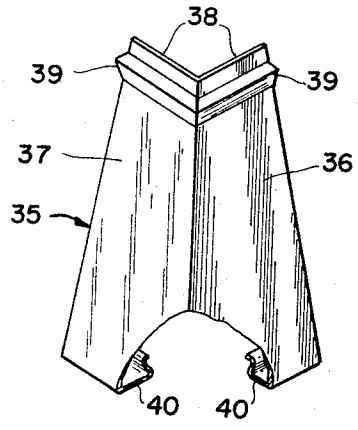



Fig.7.

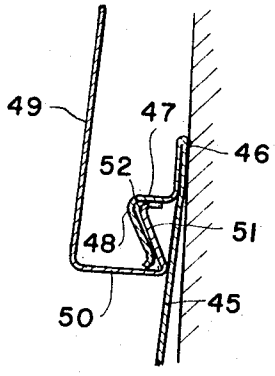



Fig. 8

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3,325,952

# METAL SIDING WITH SNAP ACTING INTERLOCK

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5 Claims. (Cl. 52—276)

This invention is for metal siding and relates particularly to siding having an improved interlocking joint construction. The invention is applicable both to the siding strips, and also to the metal corner covering elements that are used at the corners of buildings.

Metal siding simulating in general appearance wooden clapboard is widely used both in recovering old buildings and houses and on new construction. It is applied in horizontal strips of uniform width, and each strip has a lower edge adapted to interlock with a starter strip or the top edge of the strip beneath. Nailing is usually effected through the top edge of the strip. The type of interlock most generally used is a so-called "Pittsburgh" seam or lock where a hook on the lower edge of the upper member is slipped under a hook formed by a fold of metal near the top edge of the strip below.

This form of lock requires considerable skill on the part of the operator since the hook at one end of a long strip being applied may not be slipped as far under the hook element of the strip already in position as the other end so that the strip being applied is not exactly parallel with the one below. Also, with a long strip especially, it is difficult for one workman to hold the piece horizontal and accomplish the driving of the first nails necessary to keep it from slipping down.

An important object of the present invention is to so form the interlocking edges that when an upper strip has its lower edge hooked into the top edge of the strip beneath, the interfitting parts will spring or snap together so that the strip last applied may then be released by the applicator and will not slip down. This allows the applicator to then use both hands to effect the nailing of the piece so put into position, and assures that each strip will be parallel with the one beneath.

The novel interlock provided by this invention not only makes the siding more easy to apply, but it has numerous other advantages, among which are less susceptibility to imperfection in manufacture or crushing of one or the other of the interlocking edges in handling; it provides a better joint for excluding wind-driven water; and it permits replacement of a panel or strip which may later be marred, dented or damages after the siding has been applied, without disturbing other strips. Moreover, the siding may be used with or without insulation boards, but permits the use of insulation boards of uniform width and thickness, no bending of the edges of the insulating boards being necessary.

My invention may be more fully understood by reference to the accompanying drawings showing a present preferred embodiment of my invention, and in which:

FIG. 1 shows in vertical section a portion of a siding applied to a wall with no insulation board and with a starter strip for the bottom course, the metal thickness being exaggerated to more clearly show the structure;

FIG. 2 is an isometric view of a portion of one of the siding strips;

FIG. 3 shows a fragmentary section similar to FIG. 1 but at only one joint, this view showing the siding strip with insulation board;

FIG. 4 is a fragmentary vertical section through an interlock between two panels with a replacement strip applied for one of the original ones;

FIG. 5 is an isometric view of a preferred form of corner element;



FIG. 6 is a somewhat schematic perspective view showing a portion of a corner of a building with the siding applied;

FIG. 7 is a view similar to FIG. 5 of another form of corner; and

FIG. 8 is a fragmentary detail showing in vertical section a slightly modified contour for the interlocking parts.

Referring to the drawings, and particularly to FIGS. 1 and 2, the siding is an elongated strip 2 of coated metal such as is commonly used for siding. It is generally prepared in standard lengths and is customarily made to expose a width of about eight inches, but this may vary, the invention being also applicable to so-called "double-four" inch siding, "old Dutch" and other styles. The top edge of each strip is folded over on the exposed face to provide a tight or closed lap 3 along the upper edge. This provides a double ply nailing strip or margin. Below the nailing strip the metal that is folded over is bent outwardly to form a ledge portion 4, the free edge of the fold then being longitudinally corrugated or reversely curved as indicated at 5, providing under the ledge a recess or groove the entire length of the lip.

The lower edge of the strip is turned backward, extending from the opposite or rear face of the strip at a slightly acute angle thereby forming a sharp shadow-line or corner and a flat flange 7. The free edge at the rear is an upstanding lip that is also longitudinally corrugated or reversely curved, as indicated, having a lower portion 8 which is convex on the surface that confronts the outer face 6 of the strip with a concave groove thereabove forming an outwardly bent bead portion 9 at the top of this lip, this reversely-curved part being substantially matched to interfit with the lip 5 at the top edge of a similar strip.

With this arrangement a lower strip is first applied to the side of a building and is nailed to the building at intervals along its length by nails passing through the nailing strip portion 3. The lower edge of the next strip is then brought to position so that the upstanding reversely-curved lip may be forced up under the downturned lip at the top edge of the lower strip. With slight upward pressure, the lip at the top edge of the lower strip will be cammed or sprung outwardly by the portion 9 of the lip 8, and the part 5 of the downturned lip will then snap into interfitting and interlocking relation with the part 8 of the upturned lip on the lower edge of the section being so applied. When the parts have been snapped together, the bottom edge of the downturned lip desirably contacts the flange 7, and the top edge of the upturned lip contacts the ledge portion 4, preventing any further relative movement of the interlocked corrugations or ribs and grooves of the respective lip portions. As a result the upper strip will be parallel with the lower one. The operator may release the strip after it has been snapped into position and proceed to drive nails through its nailing strip into the wall, after which a succeeding strip or panel is in turn applied in the same manner.

Usually there is a narrow starter strip applied around the bottom of the wall to be covered. This may comprise a narrow flat strip 10, the lower edge of which is formed the same as the top edge of the siding strips above described, there being an outwardly-bent ledge portion 11, and a downwardly-turned, reversely-curved downturned lip or flange similar to part 5 of the siding strips.

Since the top edge of each strip is nailed to the wall while the flanged lower edge of each strip holds the lower edge spaced outwardly from the edge which it overlaps, the strips have a downward and outward slope or rake which is desirable. Strips of insulation board of uniform thickness from top to bottom may be used, as indicated at 15. The lower edge of this board may be rested on the ledge portion 4 at the top of the lower strip and extend under the nailing edge of the upper strip. The usual method

of application is to apply the insulation by resting its lower edge on the ledge **4** of the siding strip previously applied and securing it with two or three nails. The next course of siding is then sprung into place and nails are then driven through the nail margin of the siding strip and top edge of the insulation. The insulation boards are of uniform width and thickness and require no trimming to enable it to be used. There is formed below the insulation by the flange **7** a condensation trough. If a foamed plastic insulation is adhered directly to the back of the metal, it may also be applied in the usual manner. Drainage holes are commonly provided in the lower flange or ledge **7** through which condensate may drain.

If, after a siding has been applied, a strip should be dented or damaged, the damaged strip is cut longitudinally so that about one-third only of its top portion remains and the interlocking portion of the lower part of the cut strip is disengaged by "unsnapping" it from the top of the strip below. A whole new replacement strip or panel specially formed is applied. It has a ribbed upper edge which is pushed upwardly, riding over the short part of the remaining upper edge of the original piece and snapping under the lower edge of the strip above, while its lower edge interlocking portion snaps under the upper edge portion of the strip below. This is shown in FIG. 4 where **16** is the remaining part of the original strip that has been cut away, **17** the siding strip below, **18** the siding strip above, and **19** the replacement strip in place with a flat top edge **20** having a rib **21** therealong spaced downwardly from the edge and which is snapped under the interlock of the strip above. Its lower edge **22** is the same as the lower edge of the original panel.

For complementing the siding strips, I have shown in FIG. 5 an outside corner. It is desirably formed of the same material as the siding strips. It has a central panel portion **25** of uniform width from top to bottom. Near the top edge of this panel is a nailing area in which there is a nail hole **26** and spaced downwardly from the top edge is an outwardly-struck depending integral tab **27** that is attached to the body of the panel only at its top edge.

At each side of the central panel there is a side panel **28** that slopes away from the front panel at an angle of 45° and which is of downwardly-increasing width. The bottom edge of the corner piece is slitted on the bend lines defining the three panels for a sufficient distance to enable the bottom edges of the panels to be turned inwardly to form a ledge **29** normal to the plane of the panel on which it is formed. The free edge of this ledge is turned upwardly to provide an upstanding lip **30**.

The corner is applied after the siding has been applied. The top edges of the two side panels are forced under the top edges of the siding strips at the corners, the lip **30** of the central panel is forced under the tab **27** of the corner element below and the lip **30** of each side panel is formed upwardly under the interlock of the siding strips at the corner below over the top edges of the side panels of the previously-applied corner element below. Each corner element is nailed in place after it has been so applied. The height of the corner elements is matched to the width of the siding strips, so the corner elements match the course of siding strips all the way up the building.

In place of the corner element shown in FIG. 5, I may provide a direct right-angle corner element **35** as shown in FIG. 7. It is an integral piece of sheet metal having parallel top and botom edges and angle sides bent on the vertical center line to form two wings **36** and **37** of downwardly-increasing width. Each wing has a top edge portion **38** below which is a rib **39** designed to be forced up between the interlocking portions of the corner courses. The bottom of each wing is formed similarly to the bottom edge of each siding course, with a rearwardly-turned flange having its free edge turned upwardly as indicated at **40** so as to interlock with the interlocking portions of the siding strips at the bottom of each course. These corners may be nailed in place as in FIG. 5, or they may be retained by the interlock.

In FIG. 5 I have shown the side panels and the upstanding lip at the bottom as being flat, but the central and side panels of the corner element may be formed as in FIG. 7 with a rib **39** downwardly from the top edge of each panel and with the lower edge of each panel contoured as shown in FIG. 7, and in like manner, the two panels **35** of the corner elements of FIG. 7 could be formed like the side panels of FIG. 5.

In FIG. 8 the construction there shown is essentially the same as previously described, but the interlocking ribs and grooves are more angular. This form of joint may be used in both the strips and the corners. In the figure, **45** designates the upper part of a lower panel having a tightly folded top **46** to provide a nailing edge as previously described. The free edge of the fold is bent outwardly to form a ledge **47** and then turned downwardly and inwardly at **48** to form an angular bend or groove, and then is bent sharply outwardly. The lower edge of each panel is represented by part **49** that is turned rearwardly to provide a flange **50**, the free edge **51** of which is bent up and forwardly at an acute angle and at the top is reversely bent to provide a bead or ridge **52** that interlocks in the angular groove under the ledge of the strip beneath. This can produce a joint that will more strongly resist separation than when the more gradually curved contours are employed.

While I have described siding in the sense of exterior cover for walls of buildings, the invention may be applied to roofs, patio covers, or elsewhere.

While I have shown and described certain preferred embodiments of my invention and specifically set forth certain objects and advantages, other objects and advantages are secured by my invention, as will be apparent to those skilled in the art, and various changes and modifications may be made within the contemplation of my invention and under the scope of the following claims.

I claim:

**1.** A siding for buildings comprising a succession of horizontally-elongated strips, each of which has a top edge folded forwardly and downwardly in a closed fold, providing a nailing strip portion for securing the top of each strip to a building wall, said fold-over top edge having a free edge portion extending horizontal from the lower edge of the nailing strip portion to provide a ledge and which turns downwardly at the outer edge of the ledge to provide a lip, the bottom of each strip having a rearwardly-turned flange thereon with the free edge turned upwardly to provide an upwardly-turned lip that fits between the downturned lip at the top of the strip below, the downturned lip at the top of the lower strip and the upturned lip at the bottom of the upper strip being longitudinally ribbed to provide an interfitting snap acting interlock.

**2.** A siding for buildings as defined in claim **1** wherein there is an insulation strip at the rear of each siding strip having its lower edge bearing against the ledge at the top of the strip beneath and its top edge extending under the nailing strip portion of the siding strip behind which it is placed with the nails passing through its upper edge.

**3.** A siding for buildings as defined in claim **1** wherein strips on two walls that are at right angles come together at a corner, of a succession of corner covering elements, one such element being provided for each course of siding strips, each corner covering element comprising a central panel portion of uniform width from top to bottom, a side panel at each side of the central panel of downwardly-increasing width, the side panels diverging from the central panel each at 45° relative to the plane of the central panel, the bottom of each panel having an inwardly-turned flange with an upwardly-extending lip, the central panel having a nailing hole through it near the top edge and having an outwardly-struck depending tab below the nail hole, the upturned lip of the flange of each

central panel being hooked under the tab of the element beneath it, the upturned lips of the side panels being engaged under the interfitted lips of the courses of adjacent siding strips at the bottoms thereof and the tops of the side panels being wedged under the interfitted lips at the tops of the adjacent siding courses.

4. A corner element for application to the juncture of two siding strips at right angles to each other comprising an integral sheet metal body having a central panel of uniform width from top to bottom, a side panel at each side of the central panel sloping away from each at an angle of 45° to the plane of the central panel, each side panel being of downwardly-increasing width, all of the panels having the bottom edge turned inwardly to provide a flange with an upturned lip, the central panel having a nailing area near the top and an integral depending tab struck outwardly from the central panel below the nailing area.

5. A siding for a building as defined in claim 1 wherein strips on two walls that are at right angles meet and terminate at the corner with the strips on the two walls being in horizontal alignment, a vertical succession of corner elements at said corner, one of which corner elements is provided for each course of siding strips, each corner element comprising a sheet metal body having two angularly-disposed wings extending over and covering the ends of



the siding strips of the course to which it is applied, each wing having a top edge portion having an outwardly-protruding rib thereacross adapted to be forced under the lip that extends downwardly from the ledge at the top of the strip which it covers, said corner element being of a length to match the full height of the course of strips to which it is applied, the lower edge portion of each wing having an inwardly-turned flange with an upwardly-projecting lip having a rib thereacross in a position to interlock with the ridges and grooves at the top and bottom edges of the interlocking strip portions at the bottom of the same course.

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