Feb. 26, 1957 E. M. RODENBAUGH ET AL 2,782,888

INTERLOCKING SIDING

Filed Feb. 3, 1953 2 Sheets-Sheet 1

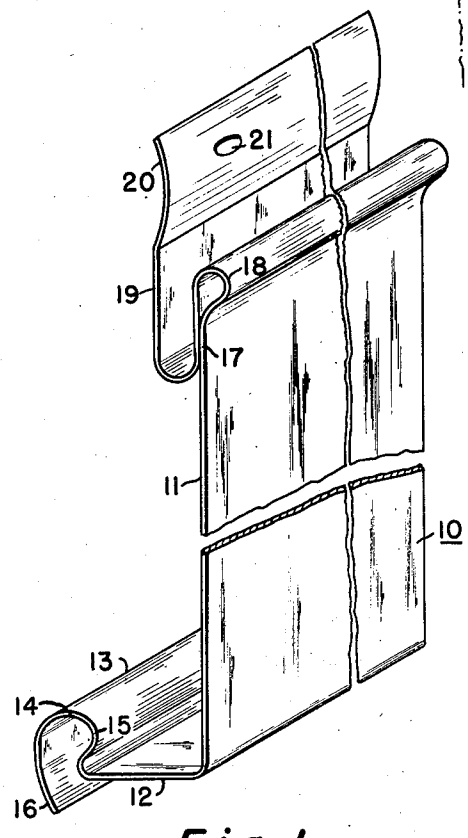


Fig. 1

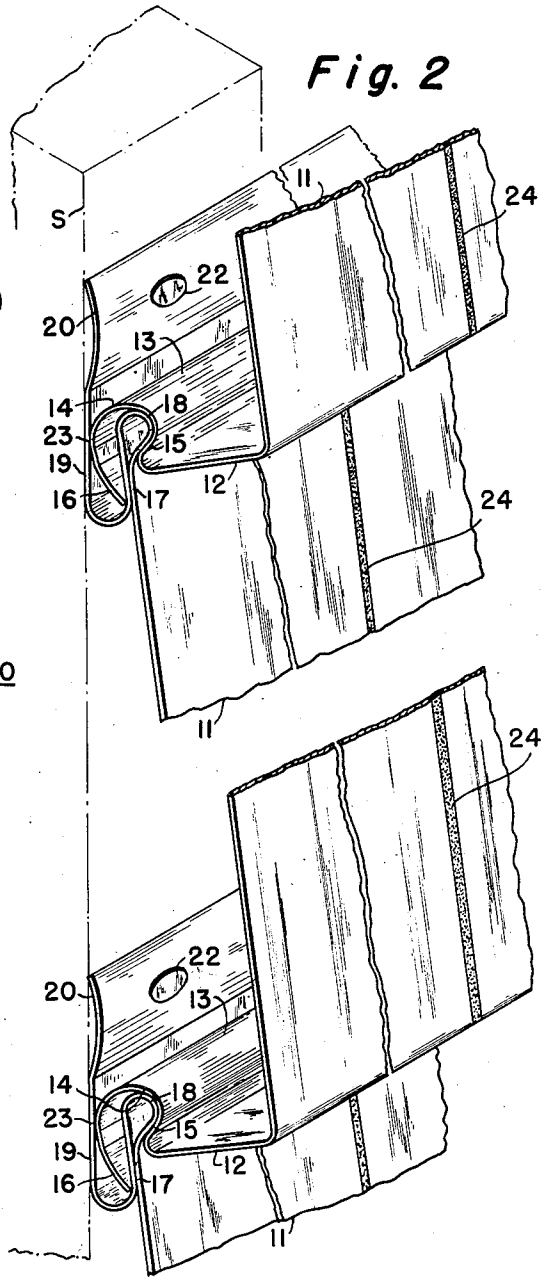


Fig. 2

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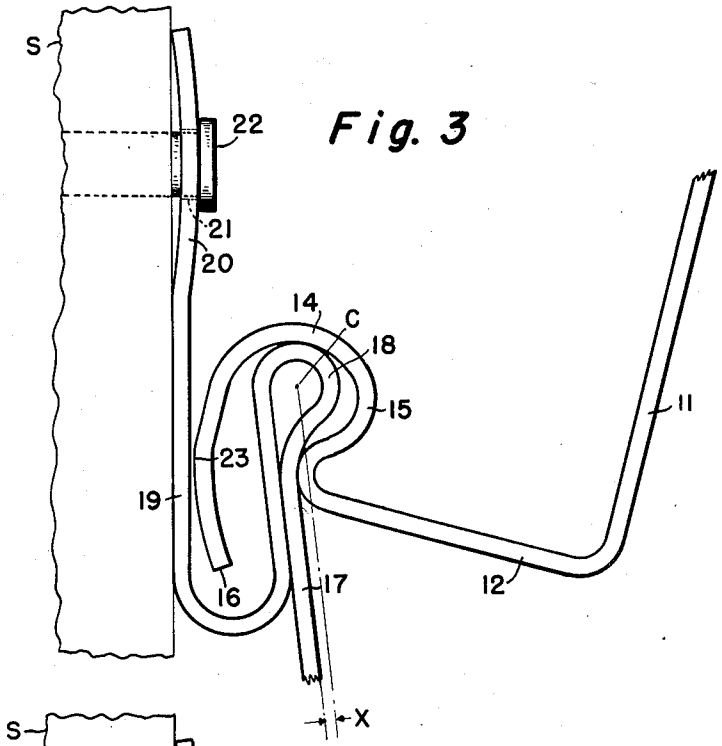


Fig. 3

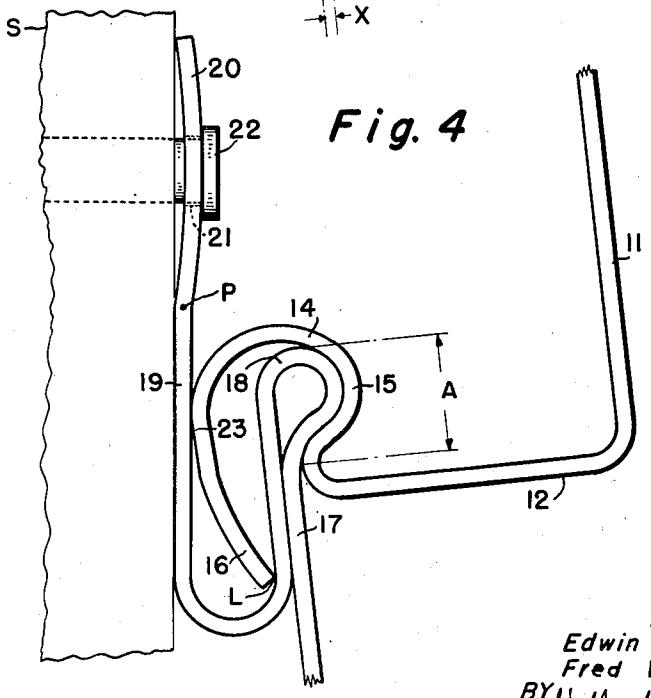


Fig. 4

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INTERLOCKING SIDING

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6 Claims. (Cl. 189—86)

This invention relates to a siding or covering for a wall, roof, or like supporting surface and particularly to improvements in interlocking such sidings one to another.

It has been previously suggested to use sidings composed of metal for covering a wall, roof, or similar surface wherein one siding joins another. Experience has shown that the manner of joining the sidings is very important with respect to providing an effective weather seal. Even though the sidings overlap so as to shed water and the like downwardly, it has been found that water vapor and even moisture due to capillary action seep through the joints between the sidings and work their way into the wall or roof structure. Since the latter are very commonly composed of wood, the accumulated water causes rot and decay and other undesirable results.

Some prior sidings make only a loose mechanical connection with one another and therefore are readily susceptible to the fault just mentioned. Others embody a tighter union of adjacent sidings where, for example, the parts are held together along a line of contact, but even these fail to realize the seal afforded by the interlocking union of the present sidings.

In the present invention, the sidings embody a tongue and groove union wherein the tongue makes a pressure fitting within the groove and contacts the latter over a relatively extended area. Moreover, in assembling one siding with another, the tongue and groove are so arranged as to interlock in a triple seal. In addition, the manner of applying each siding to a supporting surface further improves the seal between adjacent sidings and between that siding and the surface.

For instance, in one form the present siding includes a metallic sheet having a longitudinal side extending laterally and terminating in a groove. The opposite longitudinal side has a double bend. The first bend forms a tongue, and the second bend forms a skirt which extends above the tongue and may be secured to a supporting surface. In the preferred form, at least some parts of the tongue and groove have the same curvature. Also, one side of the groove is adapted to bear against the skirt of an adjacent siding, while a leg portion of the groove bears against the tongue inserted therein. Still further, the skirt may be arcuate so that fastening it to the supporting surface intensifies the pressure contact of the leg portion against the tongue and improves the seal of the siding to the supporting surface itself.

The accompanying drawings illustrate a presently preferred embodiment wherein:

Figure 1 is a perspective view of the siding;

Figure 2 is a perspective view of the siding joined with companion sidings and fixed to a supporting surface;

Figure 3 is an enlarged end view of the interlocking union of the superposed sidings of Figure 2 before the upper siding is secured in place; and

Figure 4 is a view similar to Figure 3 showing the upper siding tilted back and the triple seal thereby formed between the sidings.

Referring to the drawings, each siding includes a rolled metallic sheet **10** having a central body portion **11**. The lower longitudinal side of each sheet extends rearwardly to form a ledge **12** terminating in a longitudinal, downwardly disposed groove **13**. In profile, the groove comprises a loop **14** which initially curves back toward the body portion **11** as at **15** and then away from the body finally ending in a leg portion **16**. The latter extends below the ledge **12** and curls back toward the body portion in order to effect one of the improved features of the present interlocking siding as hereafter described.

The opposite longitudinal side of the sheet **10** is formed in a double bend on the same side of the body portion **11** as the groove **13**. The first bend forms an upwardly disposed tongue **17** having a bead-shaped tip **18**. The curvature of the tip causes it to project from the face of the body portion. This curvature also substantially corresponds with at least part **15** of the loop which initially curves back to the body portion. To this end, the center of curvature C Figure 3) of the tip **18** is preferably disposed in front of the body portion **11** as by the distance "*x*" in order to present frontally a relatively extended area for contacting a groove of an adjacent siding and make an areal seal therewith. The second bend forms a skirt **19** which extends above the tongue **17** and terminates in a longitudinal arcuate portion **20** having its concave side directed toward a supporting surface S. The arcuate portion has an opening **21** to receive a fastener **22**.

The sidings may be of any desired length and width. During installation, the bottom of one siding is placed at an appropriate height and the fastener **22** driven through the opening **21** to fix the siding to the supporting surface S. If desired, a bottom runner may first be used which corresponds to the upper part of a siding. Thereafter, the groove of another siding is placed over the upwardly disposed tongue of the lower fixed siding, usually by tilting the former forwardly in order to clear the throat of the groove. At this point, the parts are related as illustrated in Figure 3. The upper siding is then pivoted backwardly so that the skirt **19** rests against the surface S to which it is secured as before.

By pivoting the upper siding backwardly as described, a triple seal is formed in the union between the sidings. In the first seal, as shown particularly by Figure 4, the bead-shaped tip **18** of the tongue **17** makes a tight areal contact with the groove **13** of the upper siding. This areal contact is substantially coextensive with the area of the part **15** of the loop which initially curves back toward the body portion. The resulting effective joint over a relatively extended area A covers approximately one-half of the tip **18** and materially improves the weather seal between the contacting tongue and groove.

In the second seal, the rearward side **23** of the groove is compressed against the skirt **19** of the lower fixed siding forming a seal therebetween. Preferably, the side **23** is sufficiently compressed to make this contact an areal seal as well. If desired, however, the contact may be only linear.

In the third seal, the leg portion **16** of the loop bears against the rearward side of the tongue to form a pressure line of contact L which additionally seals the union of the two sidings. The force effecting this seal is derived in part from the natural resiliency of the curl of the leg toward the central body portion, previously mentioned, and in part from the compression of the side **23** of the groove against the skirt of the fixed siding.

In addition to the foregoing, the manner of securing the arcuate portion **20** to a surface S further intensifies

the pressure contact of leg **16** against the tongue. For example, when the fastener **22** is driven into the surface S, the arcuate portion **20** is flexed toward the surface as shown in Figures 3 and 4. This compression imparts a pivotal motion to the balance of the siding substantially at the edges of the arcuate portion, as at a point P. The pivotal motion, in turn, forces the edge of the leg portion **16** of that siding to bite into the tongue **17** with greater force along its line of contact L. Preferably, the arcuate portion **20** is not completely flattened in order that the compressive force imparted by the fastener **22** is concentrated at the edges of the arc. Accordingly, flexing the arcuate portion additionally causes the edges thereof to bite into the supporting surface and improve the seal of the siding to the supporting surface, itself.

Additional sidings are similarly superposed until a row is completed. Two or more rows may be butted edgewise in juxtaposed fashion and joined by a sealer **24** such as a caulking compound. Because of the ledge **12**, the installed sidings form a clapboard appearance.

Although preferably the present siding is made of metal, such as an aluminum alloy, it is within the contemplation of this disclosure to make the siding from any resilient strip or sheet. For example, plasticized synthetic resins have sufficient resiliency when molded or cast in the desired sheet form to effect the described seal.

While the foregoing disclosure described a presently preferred embodiment, it is understood that the invention may be practiced in other forms within the scope of the following claims.

We claim:

1. In a joint formation between overlapped upper and lower sections included in a clapboard wall, an upwardly open U-shaped portion formed in the upper end of the lower section, a nailing flange forming an upward continuation of one of the legs of the U-shaped portion, a laterally outwardly offset loop integral with the other leg of the U-portion and having a skirt contiguous therewith and extending in parallel relationship downwardly therefrom, said upper section including a laterally offset clapboard portion defining an outwardly sloping body portion having an inturned ledge in the lower end thereof and having an upturned fulcrum nose provided at the inner edge of the ledge which at least in an initial position engages the lower section substantially at the junction between the offset loop and the skirt, and a downwardly opening groove forming portion carried by the fulcrum nose and accommodating the loop therein, said groove portion being wider than the loop and directly engaging the outwardly offset portion thereof along their resulting area of interfaced contact when rocked thereagainst in assuming the final position of the upper section about the fulcrum nose as a center.

2. In a joint formation between overlapped upper and lower sections included in a clapboard wall, an upwardly open U-shaped portion formed in the upper end of the lower section and having an inner leg adjacent an undersurface for supporting the wall, a laterally outwardly offset loop integral with the outer leg of the U-portion and having a skirt contiguous to the latter and extending in substantially parallel relationship downwardly therefrom, said upper section including an outwardly sloping body portion having an inturned lower ledge portion providing a clapboard offset and having an upturned fulcrum nose formed at the inner edge of the ledge portion and in an initial position engaging the lower section at the junction between the offset loop and the skirt, and a downwardly opening groove forming portion carried by the fulcrum nose and accommodating the loop therein, said groove portion being wider than the loop and engaging the outwardly offset portion thereof along a resulting area of interfaced contact when rocked thereagainst in assuming final position about the fulcrum nose as a center.

3. In a joint formation between overlapped upper and lower sections included in a clapboard wall, an upwardly open U-shaped portion formed in the upper end of the lower section, a nailing flange having an arcuately sprung nail receiving portion and forming an upward continuation of the inner leg of the U-shaped portion, a laterally outwardly offset loop integral with the outer leg of the U portion and having a skirt extending in parallel contacting relationship therewith and downwardly therefrom, said upper section including an outwardly sloping body wall having a ledge portion providing a clapboard offset in the lower end thereof and having an upturned fulcrum nose formed at the inner edge of the ledge portion which in an at least initially assumed position engages the lower section at the junction between the offset loop and the skirt, and a downwardly opening groove forming portion carried by the fulcrum nose and accommodating the loop in the groove thereof, said groove portion being wider than the loop and in the finally assumed position engaging the outer offset portion in positive area of contact when rocked thereagainst upon corresponding rocking movement of the upper section about the fulcrum nose as a center.

4. In a joint formation between overlapped upper and lower sections included in a clapboard wall, an upwardly open U-shaped portion formed in the upper end of the lower section and having an inner leg contiguous to an adjacent supporting surface for the wall, a laterally outwardly offset loop integral with the outer leg of the U portion and having a skirt contiguous therewith and extending in parallel relationship downwardly therefrom, a laterally inwardly offset clapboard portion forming a ledge in the lower end of the upper section and having an upturned fulcrum nose provided at the inner edge of the ledge which in an initially assumed position of engagement positively contacts the lower section at the junction between the offset loop and the skirt, a downwardly opening groove forming portion carried by the fulcrum nose and accommodating the loop therein, said groove portion being wider than the loop and in its ultimately assumed position positively engaging the outwardly offset portion thereof along an area of interfaced contact when rocked thereagainst about the fulcrum nose as a center, and a terminal leg carried by the groove forming portion in the upper section and received in the U portion of the lower section.

5. In a joint formation between overlapped upper and lower sections included in a clapboard wall, an upwardly open U-shaped portion formed in the upper end of the lower section and having an inner leg contiguous to an adjacent supporting surface for the wall, a laterally outwardly offset loop integral with the outer leg of the U portion and having a skirt contiguous therewith and extending in parallel relationship downwardly therefrom, said upper section including a sloping body wall portion having a laterally inwardly offset clapboard portion forming a ledge in the lower end thereof and having an upturned fulcrum nose provided at the inner edge of the ledge and in an initial position of engagement therewith making positive contact with the lower section at the junction between the offset loop and the skirt, a downwardly opening groove forming portion carried by the fulcrum nose and accommodating the loop therein, said groove portion being wider than the loop and positively sealingly engaging the outwardly offset portion thereof in the ultimately assumed position thereof when rocked thereagainst about the fulcrum nose as a center, and a terminal leg carried by the groove forming portion in the upper section and diagonally received in the U portion of the lower section in sealed engagement with the different legs thereof at vertically spaced apart points.

6. In a joint formation between overlapped upper and lower sections included in a clapboard wall, a portion presenting spaced apart inner and outer walls formed in the upper end of the lower section, a laterally outwardly offset loop integral with the outer wall of said portion and having a skirt contiguous with the latter and extending downwardly in parallel relationship thereto, an overlapping portion carried in the lower end of the upper sec-

tion having an arcuately inwardly, upwardly, and outwardly extending fulcrum nose provided adjacent the inner edge thereof making positive engagement with, and in an initially assumed position with respect to, the lower section at the junction between the offset loop and the skirt, and a downwardly opening groove forming portion carried by the fulcrum nose and receiving said loop therein, said groove portion being wider than the loop and being in complementarily concave engagement with the outer offset portion thereof along an area of interfaced contact when ultimately rocked thereagainst into final position upon movement of the upper section about the fulcrum nose as a center.

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