Nov. 5, 1968 J. E. SNYKER 3,408,786

SIDING CLIP FASTENER MEANS

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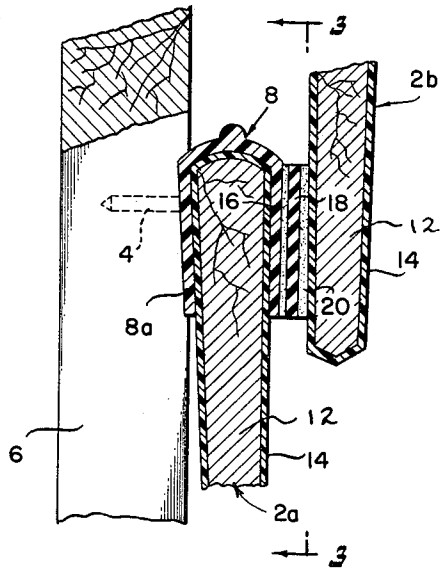

Fig. 2

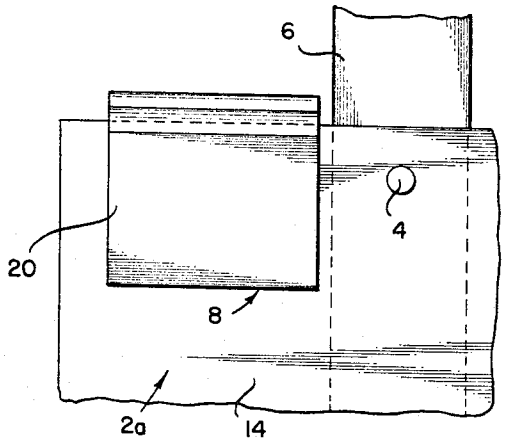

Fig. 3

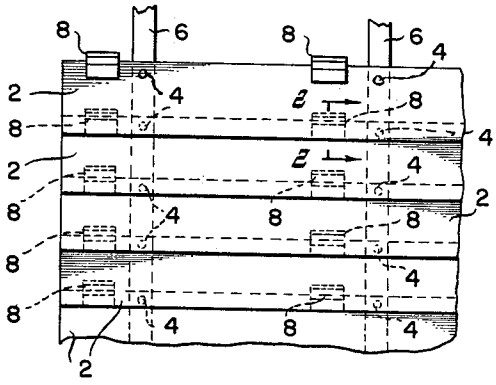

Fig. 1

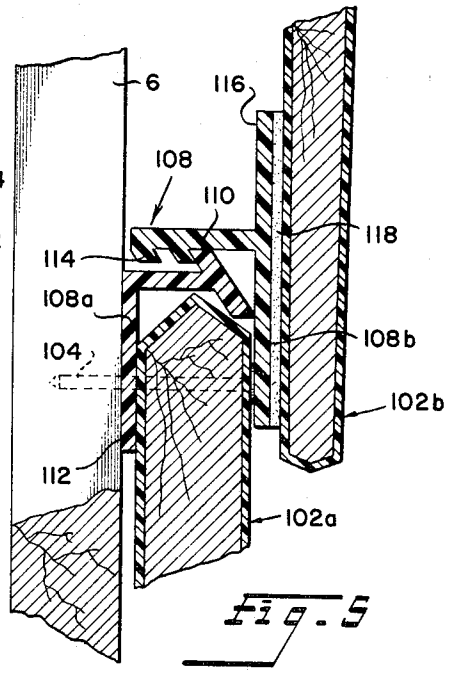

Fig. 5

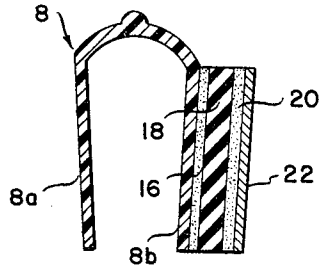

Fig. 4

INVENTOR
Jerome E. Snyker

BY Griesbauer & Laubacher
ATTORNEYS

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SIDING CLIP FASTENER MEANS

Jerome E. Snyker, International Falls, Minn., assignor to Boise Cascade Corporation, Boise, Idaho, a corporation of Delaware

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ABSTRACT OF THE DISCLOSURE

A concealed fastener means for adhesively connecting the adjacent upper and lower edges, respectively, of a pair of overlapped synthetic plastic coated exterior wall siding members.

This invention relates generally to concealed clip means for fastening, by means of a pressure sensitive adhesive, the lower edge portion of a horizontal siding member with the upper edge portion of a lower siding member overlapped thereby. More particularly, the invention relates to a generally U-shaped clip fastener adapted for mounting upon the upper edge of a lower siding member and including an outer leg that carries a layer of pressure sensitive adhesive for engagement with the adjacent surface of an overlapped upper siding member.

As evidenced by the prior patents to Millard No. 1,376,215, Fischer No. 1,592,760, Tashjian No. 2,114,362, and Eason No. 2,390,697 it is known in the prior art to provide adhesive means between the overlapped portions of structural building components. Furthermore the use of clip means for fastening overlapping components is broadly suggested by the prior patents to Thomas No. 2,126,676, Hasenburger et al. No. 2,328,977, Small No. 2,413,794 and Trachtenberg No. 3,110,130. As a consequence of the recent extensive use and acceptance of building components having a lignocellulosic core coated with a protective layer of a colored synthetic plastic material such as polyvinyl chloride, the need has arisen for an improved concealed fastener means for connecting the overlapping portions of successive components that is quickly and inexpensively installable, that provides a firm permanent connection under varying temperature and whether conditions, and that avoids the use of fastening means which penetrate the exposed portions of the components.

The primary object of the present invention is to provide improved concealed clip fastener means for adhesively connecting the overlapping portions of precoated or uncoated building components, such as siding members. The invention is characterized by the use of generally U-shaped synthetic plastic or metal clip fasteners that are mounted in longitudinally spaced relation on the upper edge of a lower siding member, the outer leg of each clip carrying a layer of pressure sensitive adhesive arranged for engagement with the adjacent overlapping portion of the next successive upper siding member.

A more specific object of the invention is to provide a clip fastener of the type described above wherein the outer leg of the clip is bonded to a layer of resilient cushioning material which in turn carries the layer of pressure-sensitive adhesive, whereby in the completed wall structure, each siding member may be secured (by nails for example) adjacent its upper edge to a support, and the lower edge portion is resiliently connected with the upper edge portion of the siding member overlapped thereby. According to another feature of the invention, the clip fastener is initially provided with a removable protective overlay sheet that facilitates the marketing, packaging and handling of the clips and the installation thereof during construction of the siding structure.

Another object of the invention is to provide a clip fastener of the type described above wherein the U-shaped clip comprises a pair of separable interlocked sections each carrying one leg of the clip, whereby during construction of the siding structure, one section defining the inner leg may be nailed to the support together with the top edge portion of the lower siding member. The other section, which carries the pressure sensitive adhesive layer is then connected with the first section to permit adhesive connection between the clip (which is mounted on the lower siding member) and the overlapping portion of the upper siding member.

Other objects and advantages of the invention will become apparent from a study of the following specification when considered in conjunction with the accompanying drawing, in which:

FIG. 1 is a front elevation view of a wall siding structure using the preferred form of securing means according to the present invention;

FIG. 2 is a sectional view taken along line **2—2** of FIG. 1;

FIG. 3 is a sectional view taken along line **3—3** of FIG. 2;

FIG. 4 is a sectional view of the clip element as manufactured and prior to the removal of the protective overlay sheet; and

FIG. 5 is a sectional view, corresponding to FIG. 2, of another clip embodiment having separable interlocked sections.

Referring first to FIG. 1, the siding structure includes a plurality of horizontal overlapping siding members **2** that are successively secured adjacent their upper edges by nails **4** to vertical supports **6** at vertically spaced locations, whereby the lower edge of one siding member overlaps the upper edge of the adjacent lower siding member to conceal the nail securing means thereof. In accordance with the present invention, the overlapping portions of the siding members are connected by concealed clip members **8** that are mounted in longitudinally spaced relation upon the upper edge of each member and carry a layer of pressure sensitive adhesive for engagement with the overlapping lower portion of the next member thereabove.

In the preferred embodiment of the invention illustrated in FIGS. 2–4, each siding member **2** includes a core portion **12** (of a lignocellulosic material, such as wood or a pressed wood fiber composition, or other conventional natural or synthetic material) that is covered by a protective coating **14** (preferably of a synthetic plastic material, such as polyvinyl chloride).

The clips **8**, which are formed of metal or a synthetic plastic material (such as a vinyl plastic), have in transverse cross section a U-shaped configuration defining downwardly extending inner and outer legs **8***a*, **8***b* that straddle the upper edge of a siding member when the clip is mounted thereon. Permanently secured to the ex-

ternal surface of the outer leg **8***b* by a layer of cement **16** (such as a neoprene contact cement) is a layer of resilient cushioning material **18** (for example, urethane foam). The cushioning layer **18** carries a layer of pressure sensitive adhesive **20** for example, an acrylic pressure-sensitive material arranged to engage the polyvinyl chloride face of the lower portion of the inner face of siding member **2***b*. Preferably, at least this portion of the inner face of siding member **2***b* is coated with a layer of primer adhesive, such as a free flowing nitrile latex adhesive, to effect a firm bond with the pressure sensitive adhesive.

As shown in FIG. 4, each individual clip, as initially manufactured, is provided with a removable protective release sheet **22** (for example, a synthetic plastic material, cellophane, wax paper or the like) that covers the pressure sensitive adhesive layer **20** during the packaging, marketing, handling and installation of the clips.

In FIGS. 2 and 4, the combined thickness of the outer legs **8***a* and **8***b*, the cement layer **16**, the cushioning material **18**, the adhesive layer **16**, the cushioning material **18**, the adhesive layer **20** and the protective release sheet **22** is exaggerated for illustrative purposes. The actual thickness of the leg **8***b* and the combined layers supported thereby is generally less than two millimeters.

In constructing the siding structure, a first siding member **2***a* is secured adjacent its upper edge to the vertical supports **6** by nails **4** as shown in FIG. 3, whereupon a plurality of clips **8** are mounted in longitudinally spaced relation on the upper edge of the siding member (as shown in FIG. 1), the outer legs **8***b* of the clips being exposed. The protective sheets **22** are then removed from the clips to expose the pressure sensitive adhesive layer **20**, whereupon the next upper siding member **2***b* is arranged with its lower edge portion overlapping the upper edge portion of the siding member **2***a*, thereby concealing the nails **4** and the clips **8** associated therewith. Following partial nailing of the upper edge portion of siding member **2***b* to the supports **6**, the lower portion of siding member **2***b* is pressed in firm contact with the adhesive layer **20** on the clips **8**, whereupon the nailing of the siding member **2***b* to the support is completed. Owing to the compressability of the resilient cushioning member, the initial pressing of the member **2***b* into contact with the pressure sensitive layer is facilitated to achieve a uniform bond, and following completion of the siding construction, the lower portions of the siding members are firmly and resiliently held in place in a permanent manner. Any opening between siding members caused by the clips **8** may be caulked or otherwise sealed if desirable, and it must be understood that the constructions illustrated in the drawings are intended to show in simplified form the novel combination of applicant's invention. This combination can readily be employed in conjunction with subsiding or other known constructional features not shown.

In the modification of FIG. 5, the clip **108** consists of two interlocked separable sections that carry the inner and outer legs **108***a* and **108***b*, respectively. The sections may be formed of a synthetic plastic material (for example, a vinyl plastic), metal or the like. The sections are interlocked by the cooperation between the upwardly extending projection **110** on section **112** and the downwardly extending projections **114** on section **116**. The section **116** carries a layer of pressure sensitive adhesive **118** arranged for engagement with the adjacent inner face of the siding member **102***b*. The surfaces of clip section **116** and siding member **102***b* in contact with the layer **118** of pressure sensitive material may be coated with a primer adhesive, such as nitrile latex, to enhance the pressure sensitive bond. The thickness of the clip **108** and the adhesive layer **118** has been exaggerated in FIG. 5 in a manner similar to FIGS. 2 and 4 for purposes of illustration.

During installation of the clip of FIG. 5, the leg **108***a* of the inner section **112** is positioned between the support **6** and the upper edge portion of siding member **102***a*,

whereupon nail **4** is driven through siding member **102***a* and leg **108***a*, and into vertical support **6**. The outer section **116** is then placed in interlocked engagement with the section **112** as shown in FIG. 5, whereupon the outer siding member is arranged in place, nailed at its upper edge portion to the supports, and pressed at its lower edge portion into engagement with the adhesive layer **118**. In the alternative, the clip portion **108***b* may be prefastened to the back face of the siding before application to the wall. If desired, the clip of FIG. 5 may be provided with the resilient cushioning layer and/or the removable protective sheet illustrated in the FIG. 4 embodiment.

While in accordance with the provisions of the patent statutes the preferred forms and embodiments of the invention have been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made without deviating from the invention set forth in the following claims.

What is claimed is:

1. A building wall construction, comprising:

inner and outer horizontal parallel overlapping siding members each arranged vertically upon one longitudinal edge, said inner siding member being connected adjacent its upper edge with a vertical support and said outer siding member being connected adjacent its upper edge with the support at an elevation above and spaced from the upper edge of said inner siding member, the lower portion of the inner vertical side surface of the outer siding member being opposite the upper portion of the outer vertical side surface of the inner siding member, each of said siding members including a lignocellulosic core portion and a synthetic plastic shell covering the side and edge surfaces of the core portion;

a plurality of generally U-shaped clip means mounted in spaced relation upon the upper edge portion of the inner siding member, each of said clip means comprising a clip member including downwardly depending legs in contiguous engagement with the corresponding inner and outer surfaces of the inner siding member, respectively;

cushioning means including a layer of resilient cushioning material bonded to the outer surface of the outer leg of each clip member; and

pressure sensitive adhesive means carried by the outer surface of said resilient cushioning layer securing said clip means with the said lower portion of the inner vertical side surface of the outer siding member, whereby the lower portion of the outer siding member is rigidly connected with the inner siding member.

2. A building construction as defined in claim **1**, wherein said synthetic plastic covering layer comprises polyvinyl chloride, and wherein said pressure sensitive adhesive comprises an acrylic pressure sensitive adhesive.

3. A building construction as defined in claim **2**, and further including a primer layer of nitrile latex adhesive coating at least that portion of the synthetic plastic layer that is adjacent the pressure sensitive adhesive.

4. A building wall construction, comprising:

inner and outer horizontal parallel overlapping siding members each arranged vertically upon one longitudinal edge, said inner siding member being connected adjacent its upper edge with the support at an elevation above and spaced from the upper edge of said inner siding member, the lower portion of the inner vertical side surface of the outer siding member being opposite the upper portion of the outer vertical side surface of the inner siding member, each of said siding members including a lignocellulosic core portion and a synthetic plastic shell covering the side and edge surfaces of the core portion;

a plurality of generally U-shaped clip means mounted in spaced relation upon the upper edge portion of the inner siding member, each of said clip means

comprising a clip member including downwardly depending legs, said clip members each including a pair of interlocked separable sections carrying the leg portions of said clip member, respectively, one of said sections including a transverse extension carrying a generally upwardly directed projection and the other of said sections including a transverse extension carrying a generally downwardly directed projection in interlocked relation with said upwardly directed projection; and

adhesive means bonding said sections with the outer surface of the inner siding member and the inner surface of the outer siding member, respectively.

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HENRY C. SUTHERLAND, *Primary Examiner.*