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(19) **United States**(12) **Patent Application Publication**
Monteer(10) **Pub. No.: US 2006/0260247 A1**(43) **Pub. Date: Nov. 23, 2006**(54) **WEATHERPROOF LAP SIDING SYSTEM****Publication Classification**(75) Inventor: **Gary Monteer**, Mapleton, UT (US)(51) **Int. Cl.****E04D 1/00** (2006.01)(52) **U.S. Cl.** **52/520**

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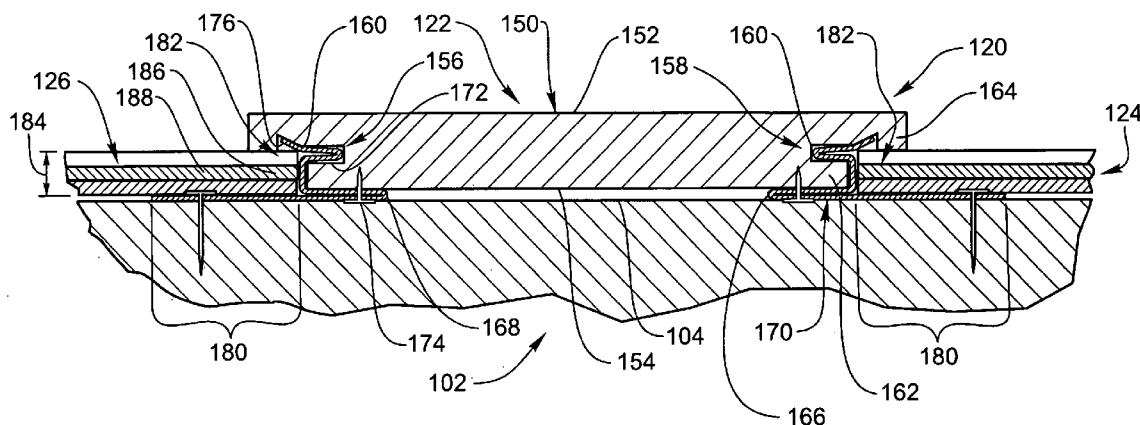
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ABSTRACT

A lap siding system for use on an exterior of a building that includes a structure having a groove and a rear side for abutting the building. The groove may include a length and a contour extending along the length of the groove. The system also includes a flashing having an extension, a length, and a head. The head may be connectable to the structure so that the extension of the flashing extends from the structure generally parallel to the rear side of the structure. Additionally, a part of the head may abut and follow a portion of the contour of the groove. The lap siding system may also include a plurality of planks having a first end. The flashing may form at least part of a plank channel having a width sized to receive the first ends of the plurality of planks.

(73) Assignee: **Lynx & Companies, L.L.C.**(21) Appl. No.: **11/271,633**(22) Filed: **Nov. 10, 2005****Related U.S. Application Data**

(60) Provisional application No. 60/682,641, filed on May 18, 2005.



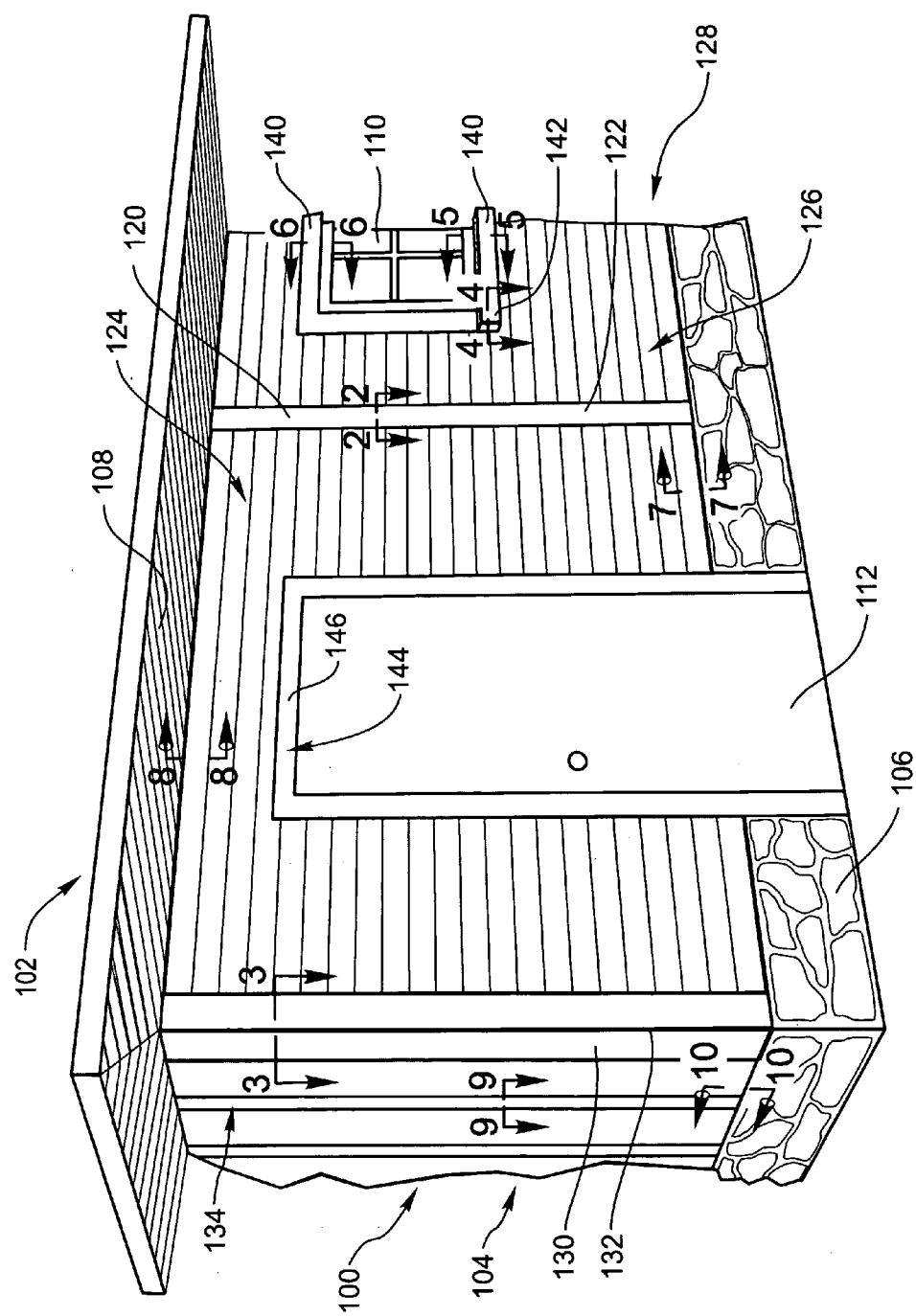


FIG. 1

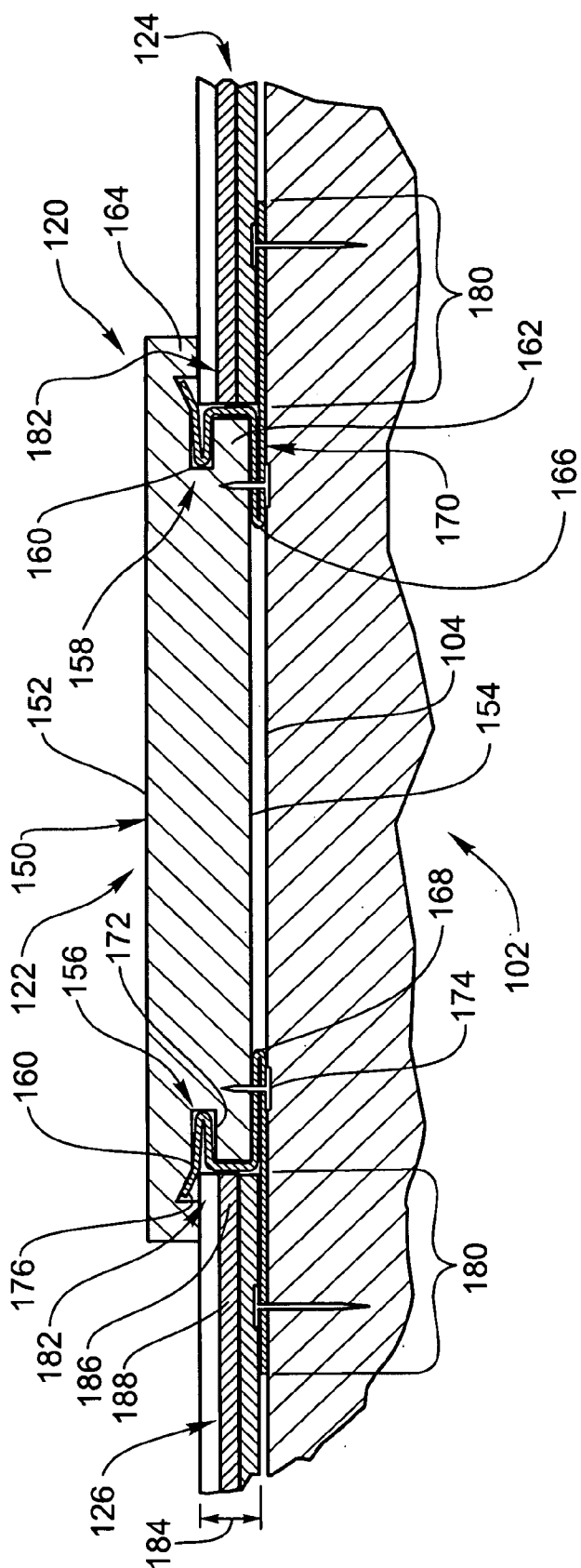


FIG. 2

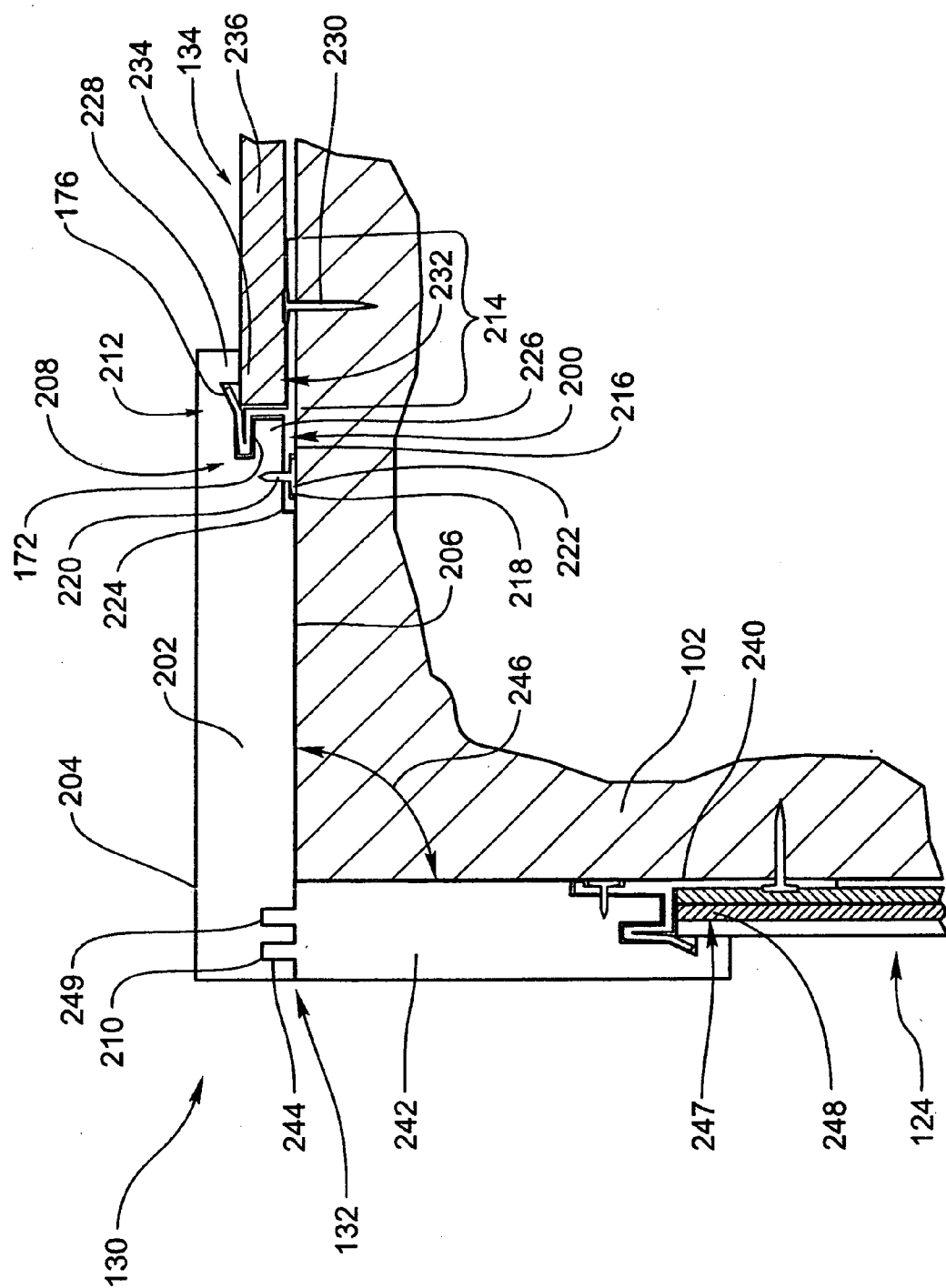
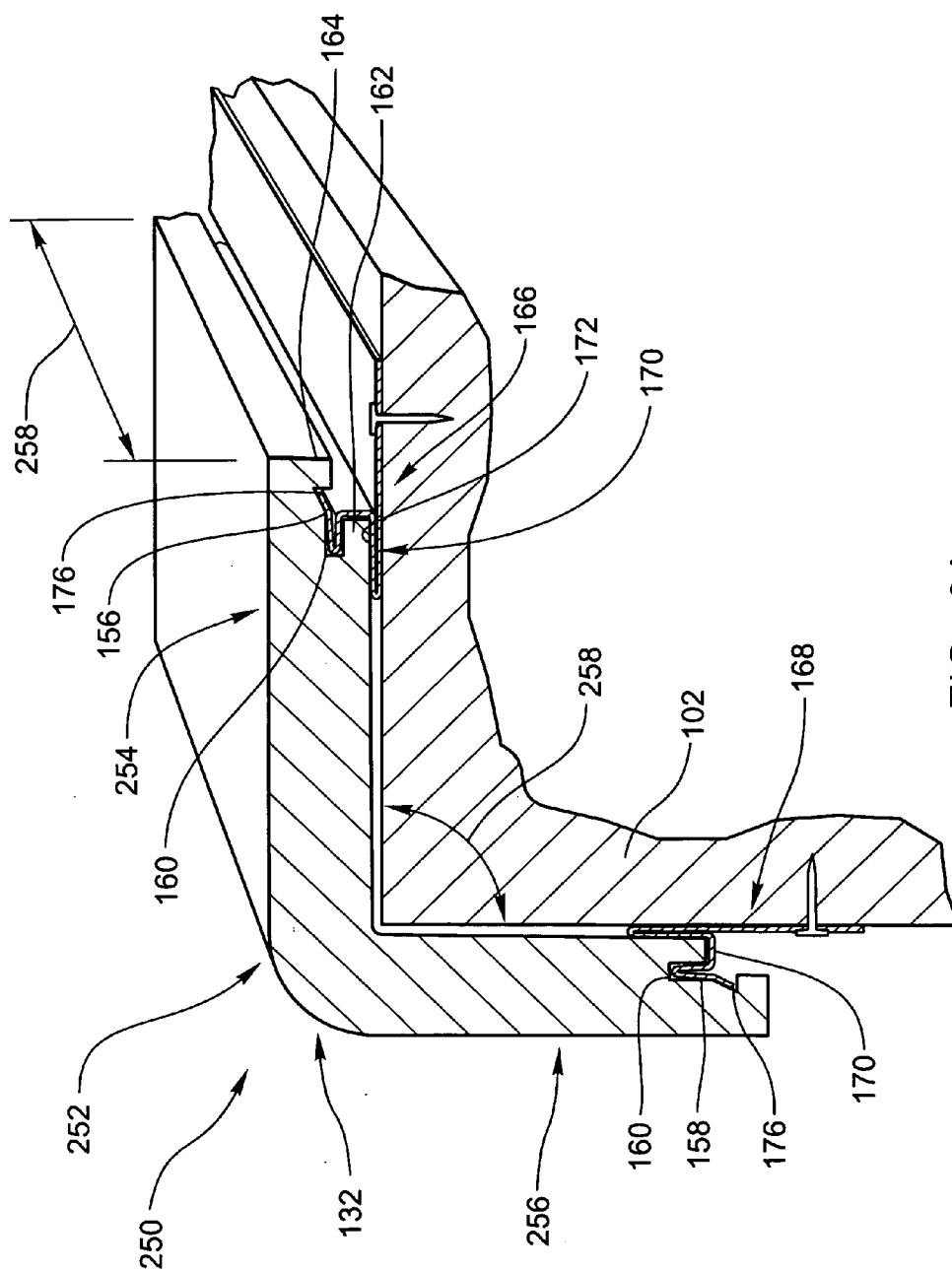


FIG. 3



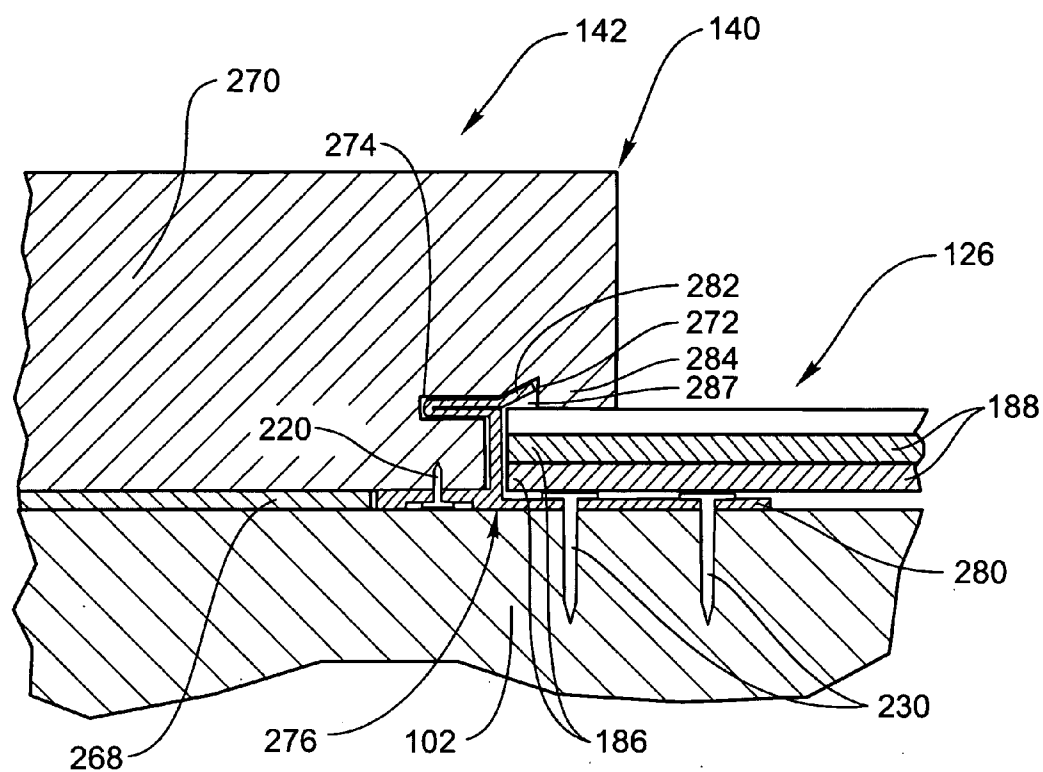


FIG. 4

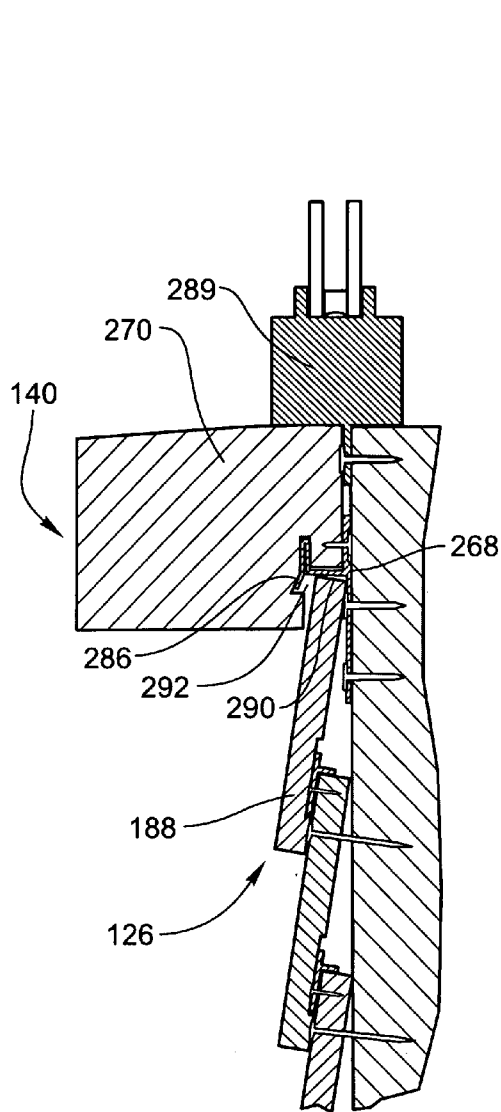


FIG. 5

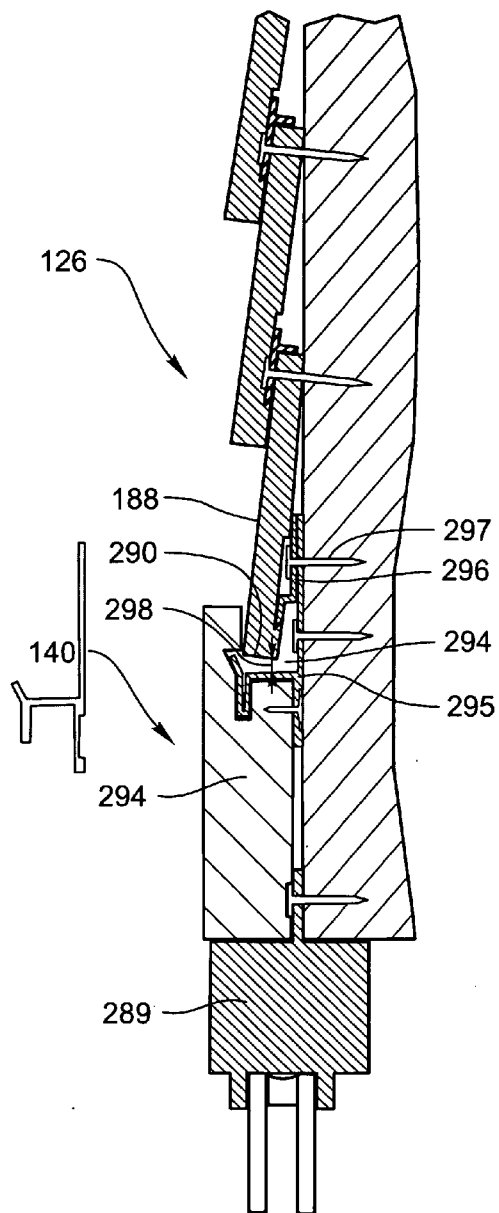


FIG. 6

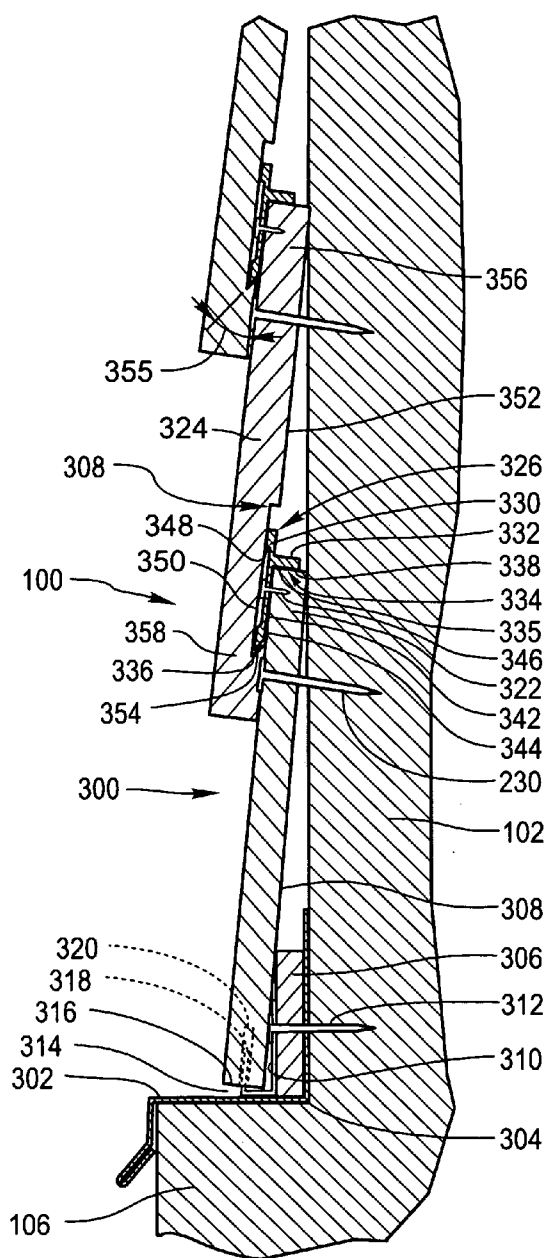


FIG. 7

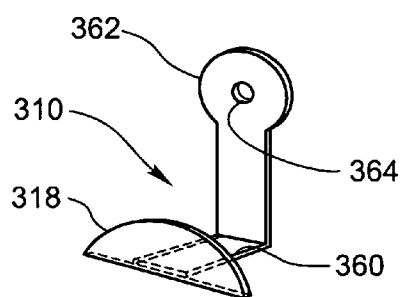


FIG. 7A

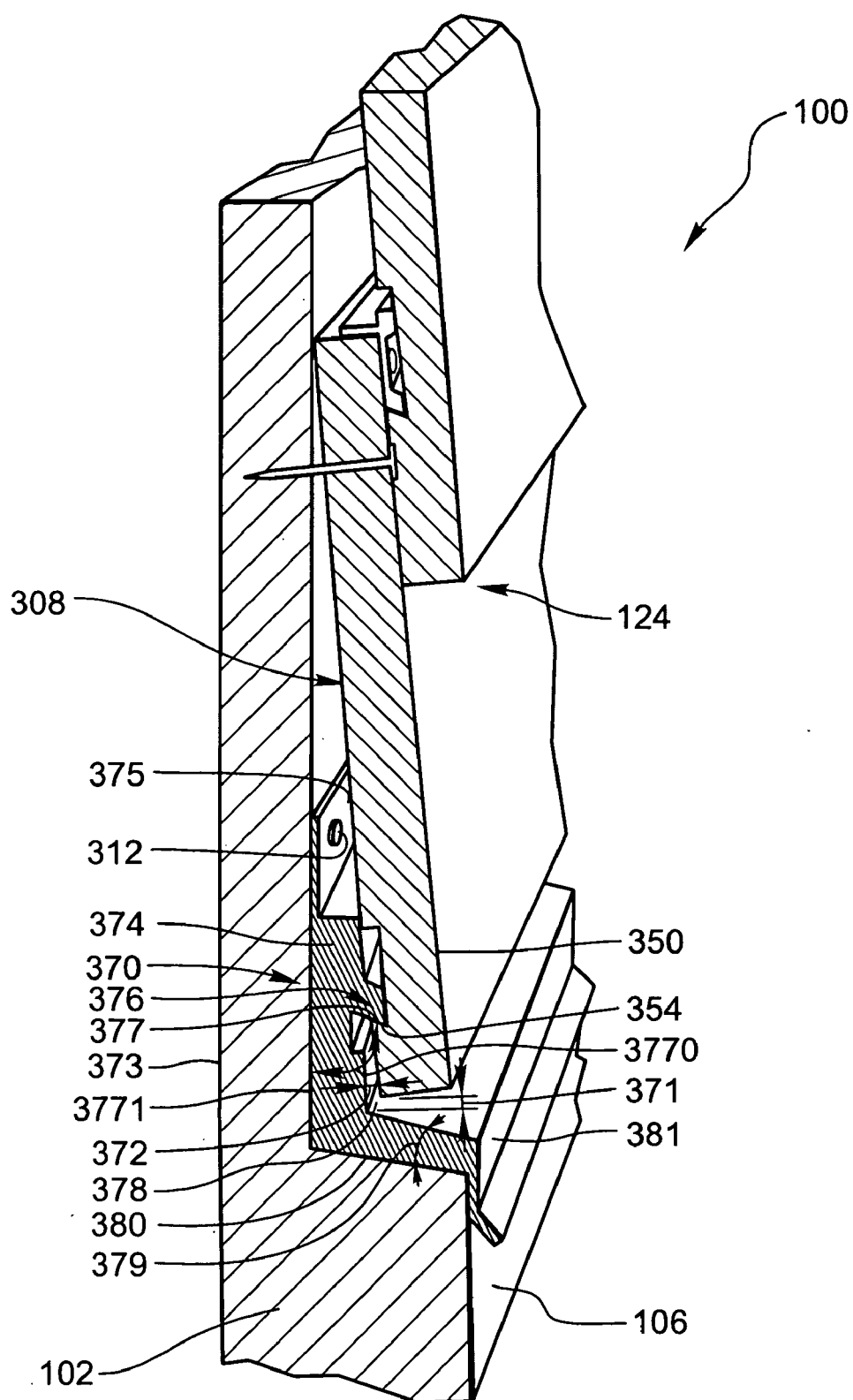


FIG. 7B

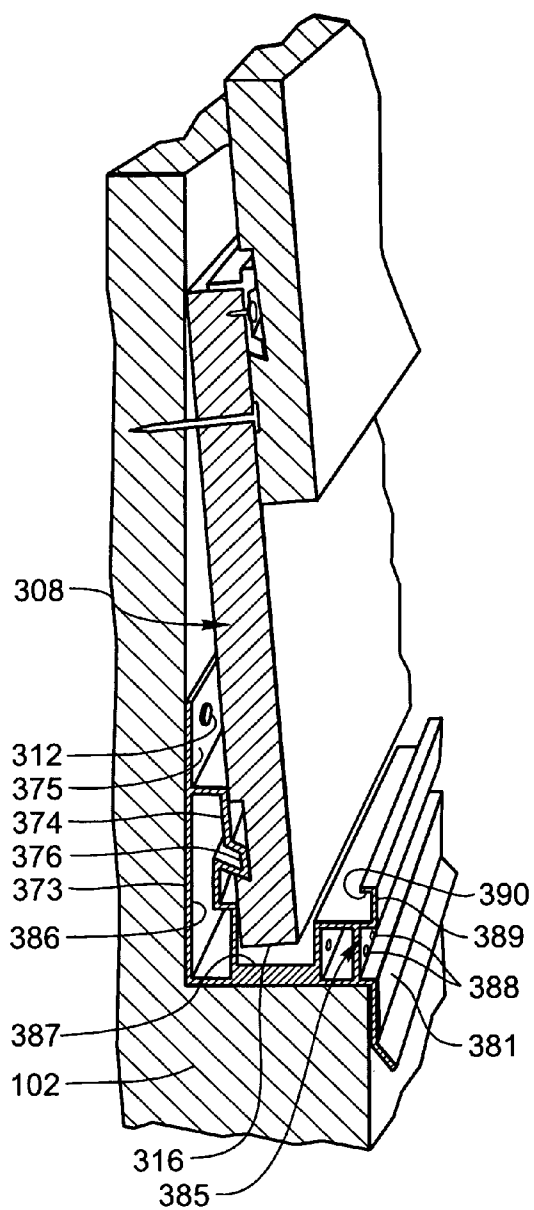


FIG. 7C

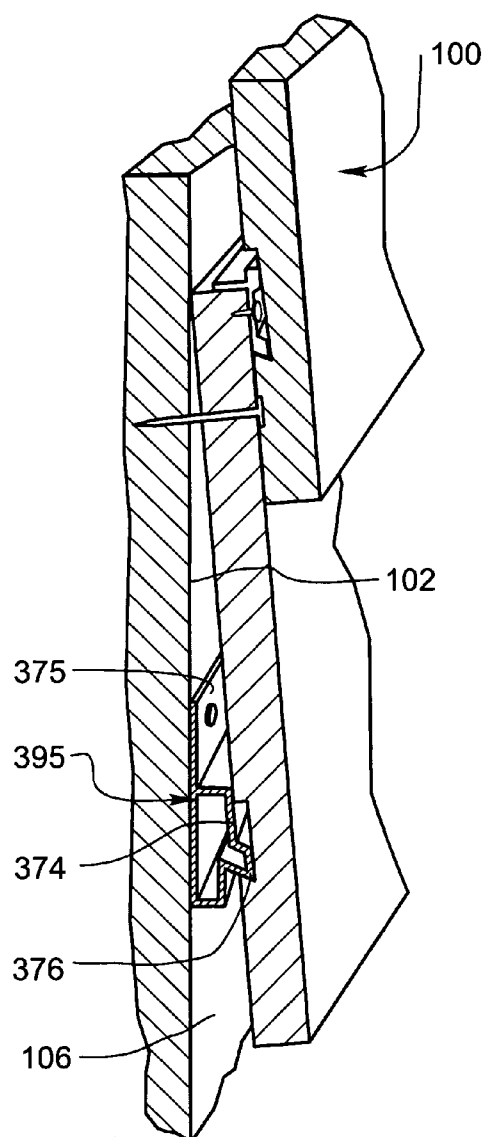


FIG. 7D

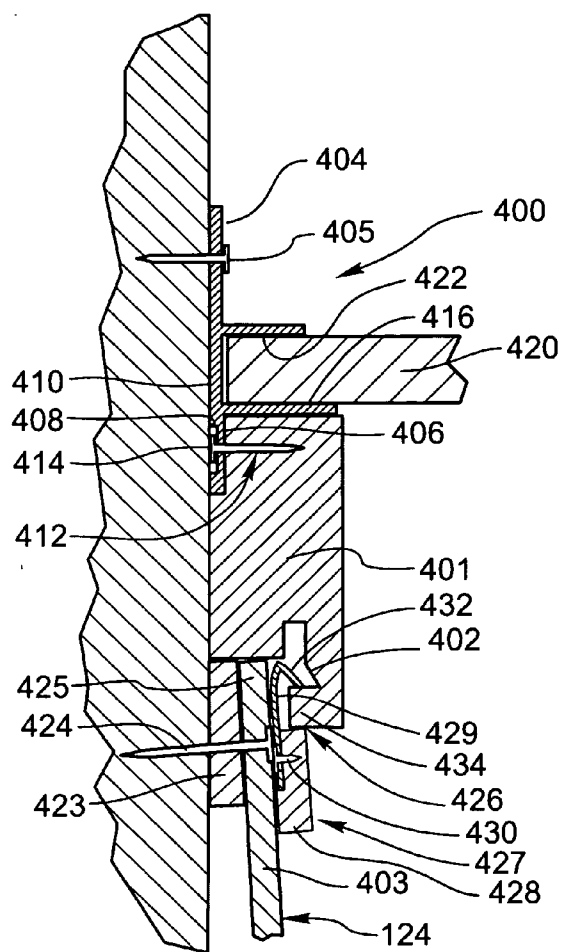


FIG. 8

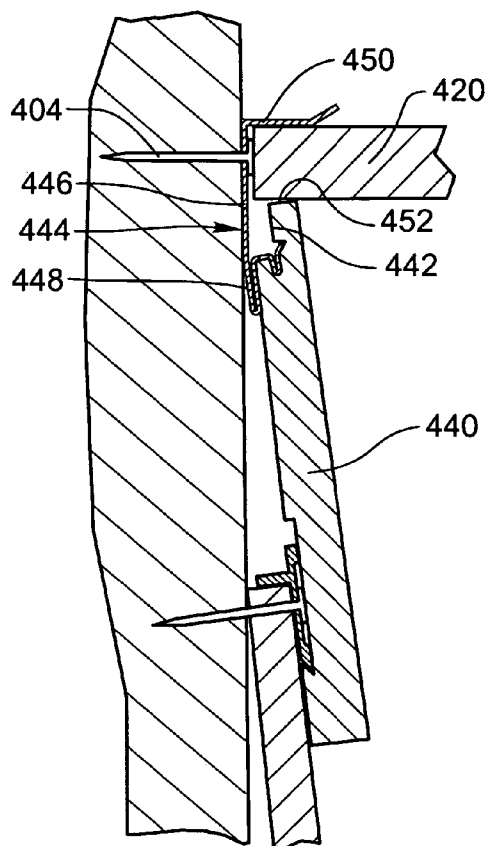
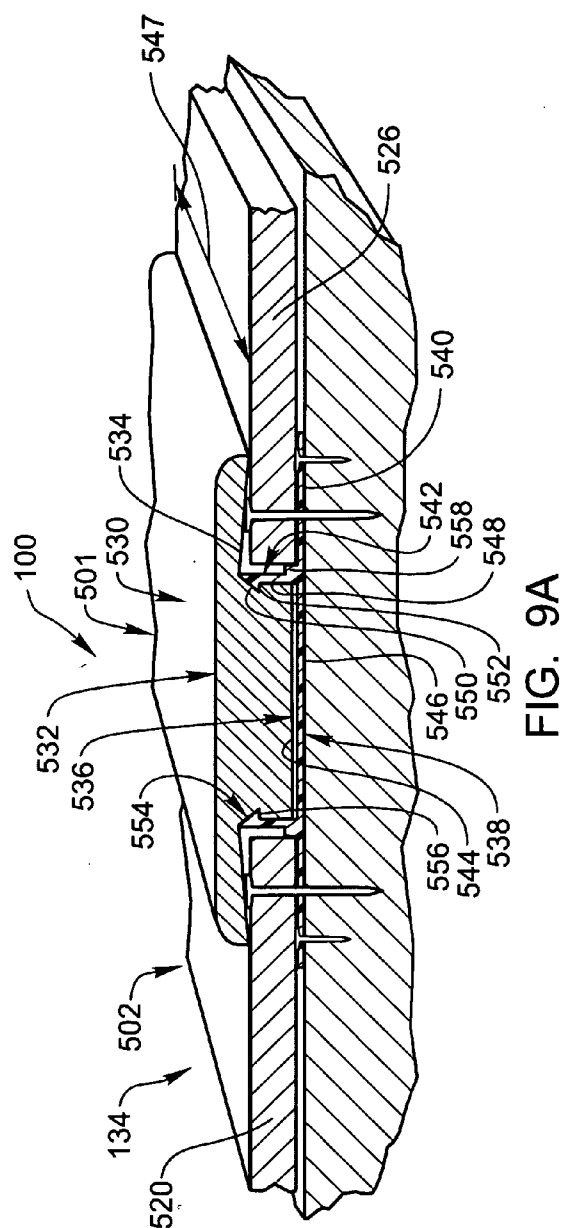
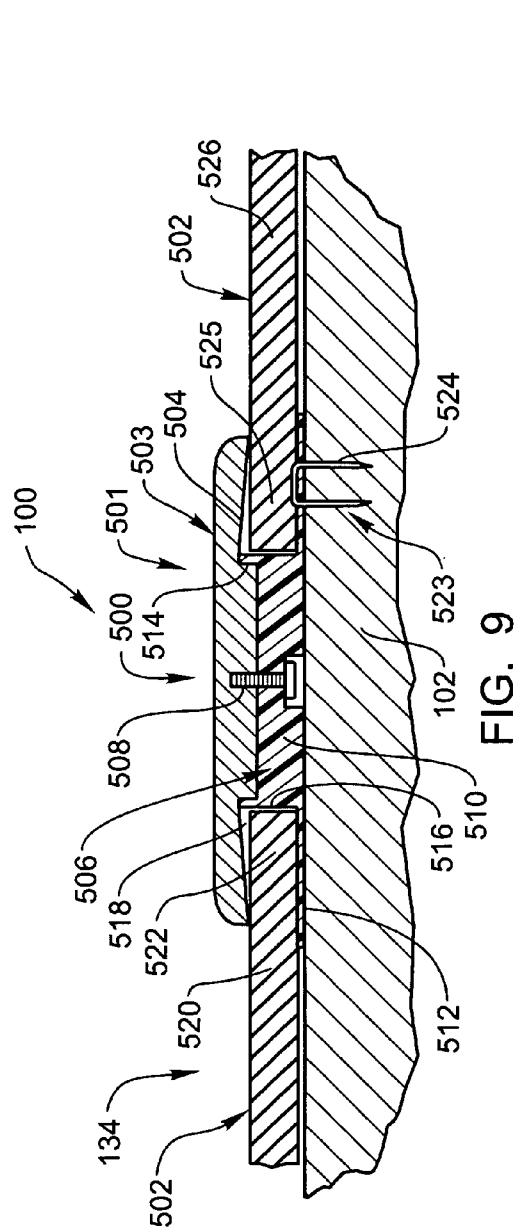


FIG. 8A



WEATHERPROOF LAP SIDING SYSTEM

CROSS-REFERENCED RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 60/682,641, filed May 18, 2005.

BACKGROUND OF THE INVENTION

[0002] This invention relates generally to lap siding systems and apparatus for use on the exteriors of residential and commercial buildings. Lap siding systems generally provide aesthetically pleasing, low maintenance exteriors to a variety of buildings by attaching overlapping horizontal or vertical boards or planks to the exterior of a building. For simplicity, the term "plank" includes boards, slats, and panels. Planks may be made of wood, cementitious material, plastic, metal, glass, various types of fiber and filler material, composites of these materials and other materials known in the art.

[0003] A common problem in construction is that of weatherproofing structural junctures in lap siding systems, such as between planks and at corners. Weatherproofing serves the goal of protecting the underlying structure of the building from the damage associated with water seepage that can result in flourishing termite, pest, and mold populations. Damage resulting from water seepage may also result in rotting, swelling, and warping of the planks of the lap siding system and underlying structure. Water seepage may also result in a reduction of the effectiveness of insulation, cracks in the masonry, loosening of the siding system from the underlying structure of the building, and the like.

[0004] The standard practice in weatherproofing is to seal and back the structural juncture with flashing. Typically, such flashing is made of metal or vinyl and positioned under the juncture and affixed to the underlying structure. This type of flashing is normally placed along the entire seam created by the juncture.

[0005] The flashing is usually sealed against the underlying structure with caulk. However, caulk tends to shrink over time. Additionally, the weathering and dissimilar thermal expansion and contraction of the flashing, siding, and caulk often leads to failure of the seal so that water seeps behind the siding and may result in water damage to the lap siding system and underlying structure. Furthermore, the exposed junctions, caulk, and flashing may be unsightly.

[0006] Additionally, the bottommost horizontal planks and starter strips of currently available lap siding systems abut or contact a portion of the foundation or wainscot. Water often collects and sits in this juncture causing water damage to the bottommost planks and starter strips. Furthermore, the bottommost planks and starter strips are often disposed so close to the underlying structure of the building that water wicks up between the bottommost planks, starter strips, and the underlying structure of the building, which increases the likelihood that significant water damage will occur.

[0007] Another problem in the installation of a lap siding system on a building is the difficulty in evenly attaching each plank to the underlying structure. The current method of installation requires constant measuring of plank position and adjustment, which is time-consuming.

[0008] With some lap siding systems, a clearance between the roof and the lap siding system of at least two inches may be required. Flashing and counter flashing may be installed and caulked to protect the gap from wind and water. However, this gap may be unsightly and, like the structural junctions discussed above, the caulk and flashing may fail so that water is able to seep behind the flashing.

[0009] Accordingly, a need exists for a lap siding system that avoids unsightly junctures and does not require caulking. A need also exists for a lap siding system that may be installed evenly with a minimum of time spent measuring and proofing the position and orientation of each plank to be attached to the building. Furthermore, a need exists for a lap siding system that may be installed flush with the roof.

BRIEF SUMMARY OF THE INVENTION

[0010] The apparatus and system of the present invention has been developed in response to the present state of the art, and in particular, in response to the problems and needs in the art that have not been fully solved by currently available lap siding systems and apparatus. Thus, the present invention provides a lap siding system and apparatus for providing an aesthetically pleasing, low maintenance exterior to a variety of buildings.

[0011] In accordance with the invention as embodied and broadly described herein in the preferred embodiment, a lap siding system is provided. The lap siding system may include a plurality of planks having a first end and a second end. When installed on a building, a portion of each plank may overlap a part of another plank.

[0012] The lap siding system may include an apparatus that prevents water leakage at and around butt joints, corners, window trim, frieze board, door trim, and the top of wainscot. The apparatus may include a structure having a groove, a front side, and a rear side for abutting the building and a flashing having a head and an extension.

[0013] The groove of the structure may have a length and a contour that substantially extends along the length. The groove may be cut in the structure so that a protrusion and a ridge may be formed. The protrusion may extend generally parallel to the rear side and may be attached to the flashing. The ridge may extend away from a front side of the structure toward the extension of the flashing. The ridge may be positioned so that it covers an end of a plank of the lap siding system.

[0014] The head of the flashing may include a number of features so that it may be connected to the structure. The head may engage and abut the groove of the structure to prevent water from leaking from the front side of the structure to the rear side between the structure and the flashing. A part of the head may abut and follow a portion of the contour of the groove.

[0015] The head of the flashing may include an attachment channel so that the protrusion of the structure may be disposed within the attachment channel. The head of the flashing may be attached to the structure by a fastener extending partly through the attachment channel and into the protrusion.

[0016] The head of the flashing may also include a lock arm that flexes as the part of the head is inserted into the

groove at an angle nonparallel to the length of the groove. The lock arm resists removal of the part of the head from the groove at an angle nonparallel to the length of the groove. More specifically, the lock arm may engage the ridge of the structure to resist removal of the part of the head of the flashing from the groove.

[0017] The apparatus may include a second groove extending in the structure and a second flashing having an extension and a head. The second groove and second flashing may be structurally similar to the flashing and groove described above. For example, the head of the second flashing may be connectable to the structure so that the extension of the second flashing may extend from the groove generally parallel to the rear side of the structure and a part of the head of the second flashing may abut and follow a portion of a contour of the second groove.

[0018] Alternatively, the apparatus may include a second structure attached to the structure at an angle. The second structure may be attached to the structure by tongue and groove, mechanical fastener, adhesive, or some other method known in the art.

[0019] The second structure may have a groove, a front side, and a rear side for abutting the building. In this configuration of the invention, the head of the second flashing may be connectable to the second structure so that the extension of the second flashing extends from the second structure generally parallel to the rear side of the second structure. Furthermore, a part of the head of the second flashing may abut and follow a portion of a contour of the groove of the second structure.

[0020] Once the head of the flashing is connected to either the structure or the second structure, the extension of the flashing may extend from the structure generally parallel to the rear side of the structure. The flashing may form at least part of a plank channel having a width sized to receive a first end of a plank of the plurality of planks. In some configurations, the flashing may extend on opposing sides of the plank channel.

[0021] Similarly, the second flashing may form at least part of a plank channel having a width sized to receive a first end of a plank of a second plurality of planks. In some configurations, the second flashing may also extend on opposing sides of the plank channel.

[0022] Once the apparatus is assembled, the apparatus may be attached to the building by attaching the extension of the flashing to the building. The extension of the flashing may be attached to the building by mechanical fasteners such as nails, screws, staples, and other mechanical fasteners known in the art. In this way, the apparatus may be attached to the building without marring the appearance of the front side of the structure. In some cases, the structure may be a plank that is vertically disposed on the building.

[0023] Next, a bottommost plank of the plurality of planks is attached to the building. In some configurations of the invention, the plank may be disposed so that a first end of the bottommost plank is disposed within the plank channel of the apparatus and extends horizontally from a vertically oriented plank channel. The second end of the bottommost plank may be disposed within the plank channel of another apparatus. The bottommost plank may be positioned and

attached to the building by mechanical fasteners, a starter strip, and other methods known in the art.

[0024] The bottommost plank may also be attached to the building by a siding starter clip. The siding starter clip may include a connecting head, an arm for positioning the connecting head, and an attachment feature, such as a hole for receiving a mechanical fastener. The connecting head is shaped to be disposed in a slot formed in the bottommost side of the bottommost plank and may be angled to help properly position the bottommost plank in reference to the building.

[0025] Alternatively, a base skirt starter strip may be used to properly position and orient the bottommost plank. Additionally, the base skirt starter strip provides a gap between the bottommost plank and the wainscot or foundation of the building to prevent the bottommost plank from contacting water that may pool at this juncture. The base skirt starter strip also provides gaps between the bottommost plank and the base skirt starter strip to prevent water from wicking up between the underlying structure of the building and the bottommost plank to cause water damage.

[0026] The base skirt starter strip may include a rear surface for abutting the underlying structure of the building, a positioning protrusion that extends from the rear surface to properly position and orient the bottommost plank, and a water channel for collecting water and encouraging water to flow away from the building. The positioning protrusion may include an engagement member having a positioning surface that may be disposed within and engage a positioning slot formed in the rear side of the bottommost plank.

[0027] The positioning slot may have a reciprocal positioning surface that engages the positioning surface of the engagement member as plank is moved over and upward from the base skirt starter strip. Both the positioning surface and the reciprocal positioning surface may be beveled to facilitate the proper positioning of the bottommost plank. Therefore, once the base skirt starter strip is attached to the building, the bottommost plank may be positioned by sliding the reciprocal positioning surface of the bottommost plank into engagement with the positioning surface of the base skirt starter strip.

[0028] An upper flashing that may extend from a positioning protrusion and may be used to protect the underlying structure of the building from water. The upper flashing may also be used to attach the base skirt starter strip to the underlying structure.

[0029] The water channel of the base skirt starter strip may include discharge orifices disposed along its length to permit any water collected in the water channel to flow away from the building. Specifically, the water may flow from the water channel, out the discharge orifices, and out over a bottom skirt that extends downward from the water channel to cover a portion of the wainscot or foundation. The bottom skirt may be shaped to direct the water away from the building.

[0030] The base skirt starter strip may also include a wind guard that may extend upward from the water channel above the bottom edge of the bottommost plank opposite the positioning protrusion. The wind guard may also include an inwardly extending lip. The wind guard may prevent wind from blowing water up between the bottommost plank and the underlying structure of the building to cause water damage.

[0031] In another alternative, a starter strip may be used where a ledge does not exist between the lap siding system and the foundation or wainscot. The starter strip may include only an upper flashing and a positioning protrusion having an engagement member similar to the base skirt starter strip discussed above. The upper flashing may extend from the positioning protrusion to permit the starter strip to be attached to the building by a fastener.

[0032] Once the bottommost horizontal plank is attached to the building, an interlock may be attached to the bottommost plank to properly position an overlapping plank to be attached to the building. More generally, an interlock may be used to properly position a first plank and a second plank of the plurality of planks so that a portion of the second plank overlaps a portion of the first plank. The interlock also attaches the overlapping plank to the building to prevent wind from loosening and detaching the planks from the building. Thus, the interlock helps windproof the lap siding system.

[0033] The interlock includes a first positioning surface for engaging the first plank, which in this case, is the bottommost plank, and a second positioning surface for engaging the second plank, which is the overlapping plank. The first positioning surface of the interlock may include an upper abutment surface for abutting a side surface of the first plank and a front abutment surface for abutting a front surface of the first plank. The upper abutment surface may be part of an arm extending from an engagement member of the interlock. The arm of the interlock permits the interlock to rest on the first plank prior to being attached to the first plank. The engagement member may include the front abutment surface and the second positioning surface.

[0034] The interlock may be attached to the first plank by a mechanical fastener, adhesive, or other means of attachment known in the art. If a mechanical fastener is used, the interlock may include a fastener head slot positioned opposite the front abutment surface. The fastener head slot permits the engagement member to be fully disposed within the positioning slot formed in the rear side of the second plank without the head of a fastener interfering with the fit of the engagement member within the positioning slot.

[0035] The positioning slot is shaped to receive the engagement member so that a reciprocal positioning surface of the positioning slot engages the second positioning surface as the second plank is moved over and upward from the first plank. Both the second positioning surface and the reciprocal positioning surface may be beveled to facilitate the proper positioning of the second plank. Therefore, once the interlock is attached to the first plank, the second plank may be positioned by sliding the reciprocal positioning surface of the first plank into engagement with the second positioning surface of the interlock.

[0036] Once most of the plurality of planks have been installed, an upper joint member may be used to attach the last plank so that it is disposed adjacent the soffit. The last plank may be a plank similar to the plurality of planks. The upper joint includes a plank attachment surface for abutting the last plank and a fastener head recess extends into the rear side of the upper joint and is positioned opposite the plank attachment surface. The fastener head recess permits the upper joint to be attached to the last plank by a mechanical fastener to extend through the upper joint into last plank,

while permitting the rear side of the upper joint to abut the building without interference from the head of the mechanical fastener.

[0037] The upper joint also includes a soffit support surface for abutting and positioning a piece of soffit. In some configurations, the soffit support surface is part of a soffit retention channel that may contact the soffit on three sides. In some configurations, the soffit may be attached to the upper joint by an adhesive or mechanical fastener.

[0038] Alternatively, the last plank may include a groove in a structure and flashing similar to the apparatus discussed above. Therefore, the structure of the last plank may be attached by the flashing to the building.

[0039] Where the apparatus includes the second flashing forming a plank channel, a plank of a second plurality of planks may be attached to the building so that the extension of the second flashing extends from the apparatus generally parallel to the rear side of the structure or second structure. In a similar fashion to the plurality of planks discussed above, the second plurality of planks may be attached to the building.

[0040] These and other features and advantages of the present invention will become more fully apparent from the following description and appended claims, or may be learned by the practice of the invention as set forth herein-after.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0041] In order that the manner in which the above-recited and other features and advantages of the invention are obtained will be readily understood, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered to be limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

[0042] **FIG. 1** is a perspective view of a lap siding system of the invention installed on the exterior of a building;

[0043] **FIG. 2** is a cross sectional view along lines 2-2 of an apparatus according to the invention installed on the building of **FIG. 1** as a butt joint;

[0044] **FIG. 3** is a cross sectional view along lines 3-3 of another apparatus installed on the building of **FIG. 1** as a corner joint;

[0045] **FIG. 3A** is an alternative cross sectional view along lines 3-3 of an alternative apparatus installed on the building of **FIG. 1** as a corner joint;

[0046] **FIG. 4** is a cross sectional view along lines 4-4 of an apparatus installed on the building of **FIG. 1** as a window sill;

[0047] **FIG. 5** is an alternative cross sectional view along lines 5-5 of the apparatus installed on the building of **FIG. 1** and shown in **FIG. 4**;

[0048] FIG. 6 is a cross sectional view along lines 6-6 of the planks of the lap siding system installed on the building of FIG. 1 above the window;

[0049] FIG. 7 is a cross sectional view along lines 7-7 of the planks of the lap siding system installed on the building of FIG. 1 above the wainscot;

[0050] FIG. 7A is a perspective view of the starting clips shown in FIG. 7;

[0051] FIG. 7B is an alternative cross sectional view along lines 7-7 of the planks of the lap siding system installed on the building of FIG. 1 above the wainscot;

[0052] FIG. 7C is another cross sectional view along lines 7-7 of the planks of the lap siding system installed on the building of FIG. 1 above the wainscot;

[0053] FIG. 7D is yet another cross sectional view along lines 7-7 of the planks of the lap siding system installed on the building of FIG. 1 above the wainscot;

[0054] FIG. 8 is a cross sectional view along lines 8-8 of the upper joint, last plank, and soffit installed on the building of FIG. 1;

[0055] FIG. 8A is an alternative cross sectional view along lines 8-8 of a last plank and soffit installed on the building of FIG. 1 in an alternative configuration;

[0056] FIG. 9 is a cross sectional view along lines 9-9 of the vertical planks of the lap siding system installed on the building of FIG. 1; and

[0057] FIG. 10 is a cross sectional view along lines 10-10 of the vertical planks of the lap siding system installed on the building of FIG. 1 above the wainscot.

DETAILED DESCRIPTION OF THE INVENTION

[0058] The presently preferred embodiments of the present invention will be best understood by reference to the drawings, wherein like parts are designated by like numerals throughout. It will be readily understood that the components of the present invention, as generally described and illustrated in the figures herein, could be arranged and designed in a wide variety of different configurations. Thus, the following more detailed description of the embodiments of the lap siding system of the present invention, as represented in FIGS. 1 through 10, is not intended to limit the scope of the invention, as claimed, but is merely representative of presently preferred embodiments of the invention.

[0059] Referring to FIG. 1, a perspective view illustrates a lap siding system 100 of the invention installed on a building 102. As shown, an exterior 104 of the building 102 may include a wainscot 106 below and soffit 108 above the lap siding system 100. Additionally, the exterior 104 of the building 102 may include a window 110 and a door 112.

[0060] The lap siding system 100 may include an apparatus 120 used as a butt joint 122. More specifically, the apparatus 120 may provide a leak free, caulkless butt joint 122 between a first plurality of horizontal planks 124 and a second plurality of horizontal planks 126 extending over a side 128 of the exterior 104 of the building 102. The lap siding system 100 may also include an apparatus 130 used

as a corner joint 132 between a third plurality of vertical planks 134 and the first plurality of planks 124.

[0061] An apparatus 140 may be used around the window 110 as a leak free, caulkless window trim 142. Similarly, an apparatus 144 may be used as exterior door trim 146.

[0062] As shown, the lap siding system 100 may provide a variety of leak free, caulkless joints and may provide coverage of the exterior 104 of the building 102 without a gap. Thus, the lap siding system 100 may extend from the wainscot 106 up to the soffit 108 to provide an aesthetically pleasing exterior 104 without exposed fastener heads.

[0063] To better describe the apparatus 120 used as a butt joint 122, FIG. 2 is a cross sectional view along lines 2-2 of FIG. 1. As shown, the apparatus 120 includes a structure 150 that provides an aesthetically pleasing front side 152 and a rear side 154 that may be disposed adjacent the exterior 104 of the building 102.

[0064] The structure 150 also includes a first groove 156 and a second groove 158. The grooves 156, 158 may have a contour 160 that extends along the length of each groove 156, 158. Furthermore, the grooves 156, 158 may be formed in the structure 150 so that a protrusion 162 and a ridge 164 may also be formed. The protrusion 162 may extend generally parallel to the rear side 154. The ridge may extend away from a front side 152 of the structure 150.

[0065] The apparatus 120 may include a first flashing 166 and a second flashing 168 that are attached to the structure 150. The structure 150 and the flashings 166, 168 may cooperate to provide a leak free, caulkless butt joint 122 between the first plurality of planks 124 and the second plurality of planks 126.

[0066] The flashings 166, 168 may include a head 170 that is connectable to the grooves 156, 158 so that a part of the head abuts and follows a portion of the contour of the grooves 156, 158. The head 170 may have an attachment channel 172 that is shaped to receive the protrusion 162 of the structure 150 within the attachment channel 172. The attachment channel 172 may also be attached to the protrusion 162 by a fastener 174 extending through part of the attachment channel 172 and into the protrusion 162.

[0067] The heads 170 of the flashings 166, 168 may also include a lock arm 176 that may flex as part of the head 170 is inserted into the grooves 156, 158 at an angle nonparallel to the length of the grooves 156, 158. The lock arm 176 may resist removal of the head 170 from the grooves 156, 158 at an angle nonparallel to the length of the grooves 156, 158. More specifically, the lock arm 176 may engage the ridge 164 of the structure 150 to resist removal of the head 170 of the flashing 166, 168 from the respective grooves 156, 158.

[0068] The flashings 166, 168 may also include an extension 180. The extension 180 may be a substantially planar part of the flashings 166, 168 that extends from the head 170. When the head 170 is attached to the structure 150, the extension 180 of the flashings 166, 168 may extend from the structure 150 generally parallel to the rear side 154 of the structure 150. The extensions 180 may be attached to the building 102 to secure the apparatus 120 to the exterior 104 of the building 102.

[0069] As shown, the flashings 166, 168 each form at least part of a plank channel 182 having a width 184 sized to

receive an end 186 of a plank 188 of either the first plurality of planks 124 or the second plurality of planks 126. In some configurations, the flashings 166, 168 may each extend on opposing sides of the plank channel 182. More specifically, the extension 180 extends from the head 170 to form one side of the plank channel 182, while the lock arm 176 extends on the opposing side of the flashings 166, 168. The lock arm 176 may be angled outward from the plank channel 182 to facilitate the positioning of the end 186 of the plank 188 of first plurality of planks 124 or the second plurality of planks 126 within the plank channel 182.

[0070] The ridge 164 may also form a portion of the plank channel 182. As shown, the ridge 164 may abut and help position the planks 188 within the plank channel 182.

[0071] Because the flashings 166, 168 may extend on opposing sides of the plank channels 182, the apparatus 120 may prevent water from leaking from the front side 152 of the structure 150 to the rear side 154 between the structure 150 and the flashings 166, 168. When water is directed toward the butt joint 122, the water drains down the plank channels 182 and away from the building 102. Furthermore, because the heads 170 of the flashings 166, 168 are well protected by the placement and contour of the grooves 156, 158, water is unlikely wick behind the flashings 166, 168 to become trapped between the rear side 154 of the structure 150 and the building 102.

[0072] The structure 150 of the apparatus 120 may be made of ceramic, metal, wood, polymer, or a composite of these and other materials. The structure 150 may be made by casting, extrusion, forging, molding, machining, and other methods known in the art and suitable for properly forming the material. As shown, the flashings 166, 168 may be made of sheet metal that may be bent to shape.

[0073] FIG. 3 is a cross sectional view along lines 3-3 that illustrates another apparatus 130 that is installed on the building 102 of FIG. 1 as a corner joint 132. The apparatus 130 includes a first flashing 200 and a first structure 202 having a front side 204, a rear side 206, a first groove 208 shaped to receive the first flashing 200, and an attachment feature 210.

[0074] The first flashing 200 may include a head 212, an extension 214, and a substantially planar contact surface 216 that may extend from the head 212 to the extension 214. Like the flashings 166, 168 discussed above in reference to FIG. 2, the head 212 includes an attachment channel 172 and a lock arm 176.

[0075] However, the head 212 of the first flashing 200 may have a different profile than the profile of the flashings 166, 168 discussed above in reference to FIG. 2. Specifically, the head 212 of the first flashing 200 may also include a fastener head slot 218 that extends into the substantially planar contact surface 216. The fastener head slot 218 permits a fastener 220 to be used to attach the first flashing 200 to the first structure 202 without a head 222 of the fastener 220 from extending beyond the substantially planar contact surface 216.

[0076] The first groove 208 includes a flash recess 224 in addition to a protrusion 226 and a ridge 228 that are similar to the protrusion 162 and ridge 164 discussed above in FIG. 2. The flash recess 224 may permit the first flashing 200 to be attached to the first structure 202 so that the rear side 206

of the first structure 202 may abut the building 102. Furthermore, the flash recess 224 may permit the substantially planar contact surface 216 of the first flashing 200 to be aligned with the rear side 206 of the first structure 202. Thus, when the first flashing 200 is attached to the building 102 by the installation fastener 230, the rear side 206 of the first structure 202 and the substantially planar contact surface 216 of the first flashing 200 may both abut the building 102.

[0077] The first groove 208 and the first flashing 200 cooperate to form a plank channel 232 sized to receive a portion 234 of a vertical plank 236 of the third plurality of planks 134. The vertical plank 236 is positioned to hide the installation fastener 230.

[0078] The apparatus 130 may also include a second flashing 240 and a second structure 242 having many of the same features as the first flashing 200 and the first structure 202. However, the second structure 242 includes a mating attachment feature 244 instead of the attachment feature 210. The mating attachment feature 244 may engage attachment feature 210 to permit the second structure 242 to be securely attached to first structure 202 at an angle 246 to provide a leak free and caulkless corner joint 132. Of course, caulk may be used, but it is not necessary.

[0079] The second structure 242 and the second flashing 240 may cooperate to form a plank channel 247 sized to receive the ends 248 of the first plurality of planks 124. By using the first structure 202 and the second structure 242, the plank channels 232, 247 may be used to receive the vertical third plurality of planks 134 and the horizontal first plurality of planks 124. This provides some modularity to the lap siding system 100 by permitting joints to be coupled to receive vertical or horizontal planks as needed.

[0080] As shown, the mating attachment feature 244 may be attached to the attachment feature 210 at a ninety degree angle 246. Of course, the mating attachment feature 244 may be attached to the attachment feature 210 at other angles 246 as desired, such as a thirty degree angle, a forty-five degree angle, or a sixty degree angle. The mating attachment feature 244 and the attachment feature 210 permit the second structure 242 to be properly aligned with the first structure 202. The mating attachment feature 244 may be attached to the attachment feature 210 by a fastener (not shown) or an adhesive 249.

[0081] The first flashing 200 and the second flashing 240 may be made of metal, ceramic, plastic, wood, or a composite of these materials. The flashings 200, 240 may be formed by extrusion, molding, casting, machining, and other manufacturing methods known in the art.

[0082] FIG. 3A is a perspective view illustrating an alternative apparatus 250 that may be installed on the building 102 of FIG. 1 as a corner joint 132 in place of the apparatus 130 shown in FIG. 3. The apparatus 250 is similar to the apparatus 120 of FIG. 2 in many ways. Thus, for brevity only the differences are discussed in detail.

[0083] The apparatus 250 includes a structure 252 that has a first portion 254 and a second portion 256 that extends at an angle 258 to the first portion 254. The first portion 254 includes a first groove 156 and the second portion 256 includes a second groove 158. The grooves 156, 158 each have a contour 160 extending along the length 258 of the grooves 156, 158.

[0084] The grooves 156, 158 and the shape of the heads 170 of the first flashing 166 and the second flashing 168 may permit the structure 252 to be connected to the flashings 166, 168 without an adhesive or fastener. Specifically, when a protrusion 162 of one of the grooves 156, 158 of the structure 252 are disposed within an attachment channel 172 of one of the flashings 166, 168, a lock arm 176 of that flashing 166, 168 flexes to move past a ridge 164 of the structure 252. Thus, the lock arm 176 may resist the removal of that flashing 166, 168 from the groove at an angle nonparallel to the length 258 of that groove 156, 158. Consequently, the apparatus 250 may be installed on the building 102 by attaching only the flashings 166, 168 to the building without the structure 252 being attached to the flashings 166, 168.

[0085] Referring to FIG. 4, a cross sectional view along lines 4-4 of the apparatus 140 installed on the building 102 of FIG. 1 as window trim 142 over the window flashing 268. As shown, the apparatus 140 includes a structure 270 that may include a side groove 272 having a contour 274 similar to the contour 217 of the first groove 208 of FIG. 3. The apparatus 140 also includes a flashing 276 attached to the structure 270 at the side groove 272 by a fastener 220. The apparatus 140 is attached to the building 102 by installation fasteners 230, such as the structural nails that may be driven by a nail gun, extending through the flashing 276.

[0086] As shown, the ends 186 of two overlapping planks 188 of the second plurality of planks 126 extend into a plank channel 278. An extension 280 of the flashing 276 extends between the second plurality of planks 126 and the building 102 to define a side of the plank channel 278. A lock arm 282 extends on an opposite side of the second plurality of planks 126 to define a side of the plank channel 278 in cooperation with a ridge 284 of the structure 270.

[0087] FIG. 5 is a cross sectional view along lines 5-5 of FIG. 1 that further illustrates the apparatus 140 shown in FIG. 4. As shown, the structure 270 may include a bottom groove 286 attached to the window flashing 268 that is similar to the flashing 276 attached to the side groove 272 shown in FIG. 4. In some configurations, the structure 270 may be attached to a window frame 289 by an adhesive, though, in others, an adhesive is not used.

[0088] A side 290 of one plank 188 of the second plurality of planks 126 may be disposed within a bottom plank channel 292 to provide a protected joint between the second plurality of planks 126 and the window frame 289. The bottom plank channel 292 may be more narrow than the plank channel 278 of the side groove 272 because only the side 290 of a single plank 188 is received within the bottom plank channel 292.

[0089] FIG. 6 is a cross sectional view along lines 6-6 of FIG. 1 and illustrates the apparatus 140 disposed above the window frame 289. The apparatus 140 may include an upper structure 294 that is similar to the structure 270 disposed below the window frame 289. The apparatus 140 may also include a window flashing 295 attached to the structure 294 and to the building 102.

[0090] The window flashing 295 may at least partially form an upper plank channel 294 sized to receive the side 290 of one plank 188 of the second plurality of planks 126. A spacer 296 may be attached to the window flashing 295 by

a fastener 297 or may be integrally formed with the window flashing 295. The spacer 296 may be used to properly position the side 290 of the plank 188 in the upper plank channel 294. The spacer 296 may also be used to provide a gap 298 between the window flashing 295 so that the side 290 of the plank 188 is disposed above any water that may pool in the upper plank channel 294. This may prevent water damage to the plank 188.

[0091] As water moves down the second plurality of planks 126, the water flows into the upper plank channel 294. The upper plank channel 294 then directs the water into the plank channel 278 shown in FIG. 4, which directs the water over the exterior 104 of the building under the planks 188 of the second plurality of planks 126 and away from the building 102.

[0092] Referring to FIG. 7, a cross sectional view along lines 7-7 of FIG. 1 illustrates the installation of a plurality of planks 300 of the lap siding system 100 installed on the building 102 of FIG. 1 above the wainscot 106. As shown, a corner flashing 302 may be placed in the corner 304 between the wainscot 106 and the building 102. The corner flashing 302 may protect the building 102 from water that flows down over the exterior 104 of the building 102 from pooling and possibly causing water damage. The corner flashing 302 may optionally be caulked.

[0093] A starter strip 306 may then be positioned over the corner flashing 302 in the corner 304. The starter strip 306 may properly space a bottommost plank 308 of the plurality of planks 300 shown in FIG. 1 from the building 102.

[0094] Next, a starter clip 310 may be disposed adjacent the starter strip 306. A fastener 312 may attach the starter clip 310, the starter strip 306, and the corner flashing 302 to the building 102. The starter clip 310 may properly angle the bottommost plank 308 and may provide a gap 314 between the bottommost plank 308 and the corner flashing 302. The gap 314 permits water to flow from behind the plurality of planks 300 out away from the building 102. The gap 314 also permits air flow to dry the space between the plurality of planks 300 and the building 102.

[0095] The starter clip 310 also attaches the bottommost side 316 of the bottommost plank 308 to the building 102. This prevents a strong wind from pulling the bottommost side 316 up away from the building 102, possibly detaching the bottommost plank 308 from the building 102. To attach the starter clip 310 to the bottommost side 316, the starter clip 310 may have a connecting head 318 that may be disposed within a slot 320 formed in the bottommost side 316 of the bottommost plank 308. The upper portion 322 of the bottommost plank 308 may be attached by an installation fastener 230.

[0096] To attach a second plank 324 to the building 102, an interlock 326 may be used so that a portion of the second plank 324 properly overlaps a portion of a first plank 328, which in this case is the bottommost plank 308. The interlock 326 may include an engagement member 330 and an arm 332 extending from the body 330. The engagement member 330 and arm 332 may include a first positioning surface 334 for engaging the first plank 328 and a second positioning surface 336 for engaging the second plank 324.

[0097] The first positioning surface 334 of the interlock 326 may include an upper abutment surface 338 for abutting

an upper side surface 340 of the first plank 328 and a front abutment surface 342 for abutting a front surface 344 of the first plank 328. The upper abutment surface 338 may be part of the arm 332 and may extend perpendicularly to the front abutment surface 342, which may be disposed on the engagement member 330 of the interlock 326.

[0098] To position the interlock 326 on the first plank 328, the first positioning surface 334 is brought into engagement with the upper portion 322 of the first plank 328 so that the upper abutment surface 338 contacts an upper side 335 and the front abutment surface 342 contacts the front surface 344. The interlock 326 may then be attached with a fastener 346. In some configurations, the engagement member 330 may include a fastener head slot 348 disposed opposite the front abutment surface 342. The fastener head slot 348 permits the head of the fastener 346 to be positioned below the profile of the engagement member 330.

[0099] Once the interlock 326 is attached to the first plank 328, the engagement member 330 may be disposed within a positioning slot 350 formed in the rear side 352 of the second plank 324. The positioning slot 350 includes a reciprocal positioning surface 354. Both the second positioning surface 336 and the reciprocal positioning surface 354 may be beveled 355 to facilitate the proper positioning of the second plank 324. The bevel 355 may range from about twenty-five degrees to about eighty-five degrees from the front abutment surface 342, but preferably may range from about thirty degrees to about sixty degrees.

[0100] When the second positioning surface 336 and the reciprocal positioning surface 354 are brought into engagement, an upper portion 356 of the second plank 324 may be attached to the building 102 by an installation fastener 230. In configurations where the second positioning surface 336 and the reciprocal positioning surface 354 are beveled 355, the interlock 326 may attach a bottom portion 358 of the second plank 324 to the first plank 328. Thus, the plurality of planks 300 are attached to the building by both the upper portion 356 and the bottom portion 358. This prevents the wind from detaching the plurality of planks 300 from the building 102, which may occur where planks are attached only on one side so that the wind may peel the planks away from the building 102.

[0101] FIG. 7A is a perspective view of the starting clip 310 shown in FIG. 7. The connecting head 318 may be positioned by an arm 360 that extends from an attachment feature 362. The connecting head 318 may be angled relative to the arm 360 to help properly position the bottommost plank 308 shown in FIG. 7. The attachment feature 362 may include a hole 364 for receiving a mechanical fastener.

[0102] Alternatively, a base skirt starter strip 370, shown in FIG. 7B, may be used to properly position and orient the bottommost horizontal plank 308 above the wainscot 106. FIG. 7B is a cross sectional view along lines 7-7 of FIG. 1. The base skirt starter strip 370 provides a bottom gap 371 between the bottommost plank 308 and the wainscot 106 of the building 102. The base skirt starter strip 370 prevents the bottommost plank 308 from contacting water that may pool at this juncture. The base skirt starter strip 370 also provides a side gap 372 between the bottommost plank 308 and the base skirt starter strip 370 to prevent water from wicking up between the base skirt starter strip 370 and the bottommost plank 308 to cause water damage.

[0103] As shown, the base skirt starter strip 370 includes a rear surface 373 for abutting the building 102 and a positioning protrusion 374 for properly positioning and orienting the bottommost plank 308. An upper flashing 375 extends from the positioning protrusion 374 to protect the building 102 from water damage. The upper flashing 375 may also be used to attach the base skirt starter strip 370 to the building 102 with the fastener 312.

[0104] The positioning protrusion 374 includes an engagement member 376 having a positioning surface 377 that may be disposed within and engage a positioning slot 350 formed in the rear side of the bottommost plank 308. The positioning slot 350 has a reciprocal positioning surface 354 that engages the positioning surface 377 of the engagement member 376 as the bottommost plank 308 is moved over the engagement member and upward from the wainscot 106.

[0105] Both the positioning surface 377 and the reciprocal positioning surface 354 may be beveled 3770 to facilitate the proper positioning and attachment of the bottommost plank to the base skirt starter strip 370. Therefore, once the base skirt starter strip 370 is attached to the building 102, the engagement member 376 is used to connect a portion of the bottommost plank 308 to the base skirt starter strip 370 when the positioning surface 377 is brought into engagement with the reciprocal positioning surface 354. The bevel 3770 of the positioning surface 377 and the reciprocal positioning surface 354 may be about fifty-seven degrees from a rear surface 3771, but may also range from about fifteen degrees to about eighty-five degrees from the rear surface 3771. In some configurations, the bevel 3770 may range from about thirty degrees to about sixty degrees from the rear surface 3771, while in other configurations; the bevel 3770 may range from about forty-five degrees to about sixty degrees from the rear surface 3771.

[0106] Additionally, the base skirt starter strip 370 includes an upper surface 378 disposed at an angle 379 to a bottom surface 380 and a bottom skirt 381 extending downwardly from the bottom surface 380. The upper surface 378 is angled 379 to prevent water from pooling on the base skirt starter strip 370 by encouraging water to flow off of the upper surface 378, over the bottom skirt 381, and away from the building 102.

[0107] FIG. 7C illustrates an alternative base skirt starter strip 385 that in many ways is similar to the base skirt starter strip 370 shown in FIG. 7C. For example, the base skirt starter strip 385 includes a rear surface 373 for abutting the building 102, a positioning protrusion 374 for properly positioning having an engagement member 376. The base skirt starter strip 385 also includes an upper flashing 375 extending from the positioning protrusion 374 for attaching the base skirt starter strip 370 to the building 102 with the fastener 312 and a bottom skirt 381.

[0108] In contrast to the base skirt starter strip 370, the base skirt starter strip 385 optionally includes hollow cross sectional areas 386. The hollow cross sectional areas 386 permit the base skirt starter strip 385 to weigh less which requires fewer fasteners to install than a solid base skirt starter strip (not shown).

[0109] Additionally, the base skirt starter strip 385 includes a water channel 387 for collecting water that flows down off the first plurality of planks 124 of the lap siding

system 100 and directing the water away from the building 102. The water channel 387 collects the water below the bottom most plank 308 and directs the water through discharge orifices 388 that extend from the water channel 387 out of the base skirt starter strip 385. The discharge orifices 388 are disposed along the length of the base skirt starter strip 385. The discharge orifices 388 permit any water collected in the water channel 387 to flow down over the bottom skirt 381 and away from the building.

[0110] A wind guard 389 may be disposed opposite the positioning protrusion 374 about the water channel 387 that extends upward above the bottommost side 316 of the bottommost plank 308. The wind guard 389 may also include an inwardly extending lip 390. The wind guard 389 may prevent wind from blowing water up between the bottommost plank 308, the base skirt starter strip 385, and the building 102 to cause water damage.

[0111] In another alternative shown in FIG. 7D, a starter strip 395 may be used where the building 102 does not include ledge between the location of the lap siding system 100 and the wainscot 106. The starter strip 395 includes only an upper flashing 375 extending from a positioning protrusion 374 having an engagement member 376 similar to the base skirt starter strips 370, 385 discussed above. The positioning protrusion 374 may also have a hollow cross sectional area 386. Of course, the positioning protrusion 374 may have a solid cross sectional area.

[0112] Referring to FIG. 8, a cross sectional view illustrates an upper joint 400 attached to the building 102 and a frieze board 401 having a groove 402 sized to receive the uppermost plank 403 of the first plurality of planks 124. Specifically, the upper joint 400 may have an attachment tab 404 for attachment to the building 102 by a fastener 405.

[0113] The upper joint 400 may also include a frieze board abutment surface 406 for abutting the frieze board 401 and a fastener head recess 408 disposed opposite the plank attachment surface 406. The fastener head recess 408 may extend into a rear side 410 of the upper joint 400. The fastener head recess 408 permits the upper joint 400 to be attached to the frieze board 401 by a fastener 412 while permitting the rear side 410 of the upper joint 400 to abut the building 102 without interference from a head 414 of the fastener 412.

[0114] The upper joint 400 may also include a soffit support surface 416 for abutting and positioning a piece of soffit 420. The soffit support surface 416 may be part of a soffit retention channel 422 sized to receive the soffit 420. The soffit retention channel 422 permits the upper joint 400 to position the plank 402 adjacent to the soffit 420 to provide a more aesthetically pleasing exterior 104 to the building 102 as shown in FIG. 1.

[0115] As shown, the uppermost plank 403 of the first plurality of planks 124 may be supported in an angled position by a spacer 423 and attached to the building by a fastener 424 extending through the plank 403 and the spacer 423. A side 425 of the plank 403 and a portion of the spacer 423 may extend within groove 402 of the frieze board 401.

[0116] The spacer 423 helps to properly angle the uppermost plank end 403 for attachment to the building 102. The spacer 423 may be made of a plastic, such as polypropylene.

[0117] To prevent water from leaking behind the juncture 426 of the frieze board 401 and the side 425 of the plank 403, a trim block 427 may be used. As shown, the trim block 427 includes a decorative portion 428 and a flashing portion 429, which are attached together by a fastener 430. The decorative portion 428 is sized so that when the trim block 427 is attached to the juncture 426 of the frieze board 401 and the side 425 of the plank 403, the fastener 424 is covered by the decorative portion 428.

[0118] The flashing portion 429 includes an attachment head 432 for attaching the trim block 427 to the juncture 426 of the frieze board 401 and the side 425 of the plank 403. The flashing portion 429 of the trim block 427 may be inserted into the groove 402 between the frieze board 401 and the side 425 of the plank 403. As the flashing portion 429 is inserted, the attachment head 432 of the flashing portion 429 passes under a retention ridge 434 of the groove 402. Once fully inserted, the head 430 engages the retention ridge 434 and attach the trim block 426 to the juncture between the frieze board 401 and the side 425 of the plank 403.

[0119] Alternatively, FIG. 8A shows an alternative cross sectional view along lines 8-8 of FIG. 1. Specifically, the plank 440 may include a groove 442 similar to the grooves 156, 158 of the structure 150 of FIG. 2. The plank 440 may be attached to a flashing 444 having an extension 446 and a head 448. The head 448 may be similar to the heads 170 of the flashings 166, 168 of FIG. 2. Thus, the plank 440 may be attached to the building 102 by a fastener 405 that extends through the flashing 444.

[0120] The extension 446 of the flashing 444 may partially form a soffit channel 450 with an upper side 452 of the plank 440. The soffit channel 450 may be sized to receive the soffit 420 within the soffit channel 450. In this configuration, the soffit 420 may rest directly on the upper side 452 of the plank 440. Additionally, water is prevented from leaking between the plank 440 and the soffit 420 because of the flashing 444, which may direct the water toward the ends of the plank 440 where the water may drain down the plank channels of the apparatus 120, 130 shown in FIG. 1.

[0121] Referring to FIG. 9, a cross sectional view along lines 9-9 of FIG. 1 illustrates an apparatus 500 that provides a weatherproof joint 501 between vertical planks 502 of the third plurality of planks 134 of the lap siding system 100 without the need for caulking. Of course, caulk may be used, but is not necessary.

[0122] As shown, the apparatus 500 includes a structure 503 having a groove 504 that is attached to a flashing 506 by a fastener 508. The flashing 506 includes a head 510 and two extensions 512 that extend on opposite sides of the head 510. The head 510 partially conforms to the contour 514 of the groove 504.

[0123] When the structure 503 and the flashing 506 are attached together by the fastener 508 to form the apparatus 500, the structure 503 and the flashing 506 cooperate to form two attachment channels 516. The attachment channels 516 are sized to receive a side of the planks 502 and support the planks 502 in position on the building 102.

[0124] The structure 503 and the flashing 506 also cooperate to prevent water from wicking behind the planks 502 to cause water damage. The structure 503 and the flashing

506 provide gaps **518** that permit any water that enters the attachment channels **516** to flow downward and away from the building **102**.

[0125] To install the vertical planks **502** of the lap siding system **100** on the building **102**, a side is disposed within an attachment channel of a joint (not shown). The top (not shown) of the first plank **520** is attached to the building **102** by a fastener disposed under the trim block **427** of FIG. 8. Then the other side **522** of the first plank **520** is disposed within the attachment channel **516** of the apparatus **500**.

[0126] The apparatus **500** is disposed on the building **102** to confine the first plank **520** between the attachment channel of the joint (not shown) and the attachment channel **516** of the apparatus **500**. The extension **512** of the flashing **506** opposite the first plank **520** is attached to the building **102** by a fastener **523**, which may be a staple **524**.

[0127] A side edge **525** of the second plank **526** is then disposed within the attachment channel **516** opposite the first plank **520**. The second plank **526** is then attached to the building **102** in a manner similar to the first plank **520**. When third plurality of planks **134** are all attached to the building **102**, one of the apparatus **120**, **130**, **250**, etc. discussed above in reference to FIGS. 2, 3, 3A, etc. may be used to secure the last edge of the last plank (not shown) to the building **102**.

[0128] Alternatively, an apparatus **530** illustrated in FIG. 9A may be used to provide a weatherproof joint **501** between vertical planks **502** of the third plurality of planks **134** of the lap siding system **100** without the need for caulking. Like the apparatus **500** of FIG. 9, the apparatus **530** includes a structure **532** having a groove **534** attached to a flashing **536** having a head **538** and two extensions **540** that extend on opposite sides of the head **538**. However, the structure **532** is not attached to the flashing **536** by a separate fastener. Instead, the head **538** includes integrally formed attachment members **542**.

[0129] The attachment members **542** may extend from a planar portion **544** of the head **538** generally perpendicular to a rear side **546** of the flashing **536**. The attachment members **542** permit the flashing **536** to snap into engagement with the groove **534** of the structure **532** in response to motion of the structure toward the flashing **536**.

[0130] The attachment members **542** may extend the length **547** of the flashing **536** or may be individually positioned along the length **547** of the flashing **536**. Each attachment member **542** may include a shank **548** and a retention head **550** having a retention surface **552** generally facing the planar portion **544** to grip the structure **532** against the flashing **536**. The groove **534** of the structure **532** may include a gripping channel **554** having a reciprocal retention surface **556**. The retention heads **550** may be shaped so that the attachment members **542** flex from a natural configuration to receive the structure **532** and move back towards the natural configuration as the retention heads **550** move into the gripping channel **554** to secure the structure **532** against a planar portion **544** of the head **538** of the flashing **536**. Of course other configurations and positions of the attachment members **542** may be used in accordance with the invention to attach the flashing **536** to the structure **520** in forming the apparatus **530**.

[0131] When the structure **532** is attached to the flashing **536**, the retention head **550** extend into the gripping channel

554 so that the retention surface **552** abuts the reciprocal retention surface **556** of the gripping channel **554**. The retention surface **552** and the reciprocal retention surface **556** are positioned to resist the separation of the retention heads **550** from the gripping channel **554** and thus, detachment of the structure **532** from the flashing **536**.

[0132] Because of the different configuration of the apparatus **530**, another method may be used to attach the third plurality of planks **134** to the building **102**. For example, the flashing **536** may first be positioned on the building **102** and attached to the building **102** by fasteners **560** extending through the extensions **540**. Then, the first plank **520** may be positioned relative to the head **538** of the flashing **536** and on the building **102**.

[0133] To help position the first plank **520** relative to the head **538**, the head **538** may include a spacer **558**. The spacer **558** encourages a proper amount of space to be provided between the first plank **520** and the head **538** so that the attachment members **542** are able to flex and receive the structure **502**. Then, the first plank **520** may be attached to the building **102** by fasteners **562**.

[0134] Next, the second plank **526** may be positioned opposite the first plank **520** relative to the head **538** of the flashing **536** and on the building **102**. The second plank may also be attached to the building **102** by fasteners **562**. Finally, the structure **502** may be snapped into attachment with the flashing **536** so that the structure covers the heads **564** of the fasteners **562** to provide an aesthetically appealing exterior **104** of the building **102**.

[0135] Referring to FIG. 10, a cross sectional view along lines 10-10 of FIG. 1 illustrates a bottom joint **600** for properly positioning an apparatus **601** and vertical planks **602** of the third plurality of planks **134** of the lap siding system **100** above the wainscot **106**. As shown, the bottom joint **600** includes an upper flashing **610** for attaching the bottom joint **600** to the building **102** with a fastener **612**. The upper flashing **610** also protects the building **102** from water that may partially wick up between the third plurality of planks **134** and the bottom joint **600**.

[0136] The bottom joint **600** may optionally include an engagement member **614** that may be used to properly position the apparatus **601** and vertical planks **602** of the third plurality of planks **134** for attachment to the building **102**. The engagement member **614** may be disposed within a positioning slot **616** of the apparatus **601** and vertical planks **602**. The positioning slot **616** may be larger than the engagement member **614** so that gap **618** is formed. The gap **618** may help prevent water from wicking up between the upper flashing **610** and the third plurality of planks **134** by encouraging the water to flow down the gap **618** to an end of bottom joint **600** and away from the building **102**.

[0137] Below the engagement member **614**, the bottom joint **600** may include an upper surface **620**. The upper surface **620** may be disposed at an angle **622** from a bottom surface **624** to encourage water to flow away from the building **102** over an outer flashing **626**.

[0138] The bottom joint **600** may also include decorative plank attachment member **630**. The decorative plank attachment member **630** extends below the bottom surface **624** and permits a decorative plank **632** to be attached to the building **102** by a fastener **633**. The decorative plank attachment

member 630 may also be used to space 634 the decorative plank 632 from the wainscot 106 so that water is unable to wick up behind the decorative plank 632 to cause water damage. As shown, the outer flashing 626 may extend downward to partially cover the decorative plank 632.

[0139] Thus, the bottom joint 600 is able to provide a weather proof juncture between the wainscot 106 and the third plurality of planks 134. Additionally, the bottom joint 600 permits a decorative plank 632 to be attached to the building 102 without exposed fasteners.

[0140] In summary, a lap siding system has been presented that provides a structure integrated with a flashing to provide a weather proof joint that does not require caulking. Furthermore, an upper joint has been provided that permits the planks of the invention to be positioned adjacent the soffit on a house to provide a more aesthetically pleasing and weatherproof exterior wall.

[0141] Additionally, the lap siding system of the invention provides an interlock that may be used to properly position and attach each successive plank to a building without requiring constant measurement. The interlock may also prevent significant gaps between each successive plank that may result from variations in the wall of the building. By preventing large gaps between the planks, water may be prevented from being blown behind the planks and causing water damage. The interlock also may be used to attach a portion of each plank to the building to windproof the lap siding system.

[0142] The structure, interlock, upper joint, and flashing discussed above may be made of plastic, metal ceramic, wood, or a composite of materials. The interlock, upper joint, and flashing may be made by bending, machining, extrusion, casting, molding, forging, and other forming methods known by those of skill in the art. For example, the flashing may be made of sheet metal that is bent into shape. Alternatively, the interlock, upper joint, and flashing may be made of an extruded metal or plastic.

[0143] The present invention may be embodied in other specific forms without departing from its structures, methods, or other essential characteristics as broadly described herein and claimed hereinafter. The described embodiments are to be considered in all respects only as illustrative, and not restrictive. The scope of the invention is, therefore, indicated by the appended claims, rather than by the foregoing description. All changes that come within the meaning and range of equivalency of the claims are to be embraced within their scope.

1. An apparatus for use on an exterior of a building, the apparatus comprising:

a structure comprising a groove and a rear side, wherein the groove has a length and a contour; and

a flashing having an extension and a head, wherein the head is connectable to the structure so that the extension of the flashing extends from the structure generally parallel to the rear side of the structure, wherein a part of the head abuts and follows a portion of the contour of the groove;

wherein the flashing forms at least part of a plank channel having a width sized to receive an end of a plank.

2. The apparatus of claim 1, wherein the flashing extends on opposing sides of the plank channel.

3. The apparatus of claim 1, wherein the head of the flashing comprises an attachment channel and the structure comprises a protrusion extending generally parallel to the groove, wherein the protrusion is disposed within the attachment channel.

4. The apparatus of claim 1, wherein the head of the flashing comprises a lock arm that flexes as the part of the head is inserted into the groove at an angle nonparallel to the length of the groove, wherein the lock arm resists removal of the part of the head from the groove at an angle nonparallel to the length of the groove.

5. The apparatus of claim 1, wherein the structure comprises a ridge extending away from a front side of the structure toward the extension of the flashing, wherein the head of the flashing comprises a lock arm that engages the ridge to resist removal of the part of the head of the flashing from the groove at an angle nonparallel to the length of the groove.

6. The apparatus of claim 1, further comprising a second flashing having an extension and a head, wherein the structure further comprises a second groove, wherein the head of the second flashing is connectable to the structure so that the extension of the second flashing extends from the groove generally parallel to the rear side of the structure, wherein a part of the head of the second flashing abuts and follows a portion of a contour of the second groove.

7. The apparatus of claim 1, the apparatus further comprising a second flashing and a second structure, the second flashing having an extension and a head, the second structure having a groove and a rear side, wherein the head of the second flashing is connectable to the second structure so that the extension of the second flashing extends from the second structure generally parallel to the rear side of the second structure, wherein a part of the head of the second flashing abuts and follows a portion of a contour of the groove of the second structure, wherein the second structure is attached to the structure at an angle.

8. A lap siding system for use on an exterior of a building, the system comprising:

a structure comprising a groove and a rear side, wherein the groove comprises a length and a contour extending along the length of the groove;

a flashing having an extension and a head shaped, wherein the head is connectable to the structure so that the extension of the flashing extends from the structure generally parallel to the rear side of the structure, wherein a part of the head abuts and follows a portion of the contour of the groove; and

a plurality of planks, wherein each plank comprises a first end, wherein the flashing forms at least part of a plank channel having a width sized to receive the first end of one of the plurality of planks.

9. The system of claim 8, wherein the flashing extends on opposing sides of the plank channel.

10. The system of claim 8, wherein the structure comprises a protrusion extending generally parallel to the groove, wherein the head of the flashing comprises an attachment channel shaped to receive the protrusion of the structure within the attachment channel.

11. The system of claim 8, wherein the head of the flashing comprises a lock arm that flexes as the part of the

head is inserted into the groove at an angle nonparallel to the length of the groove, wherein the lock arm resists removal of the part of the head of the flashing from the groove at an angle nonparallel to the length of the groove.

12. The system of claim 8, wherein the structure comprises a ridge extending away from the front side toward the extension of the flashing, wherein the head of the flashing comprises a lock arm that engages the ridge to resist removal of the head of the flashing from the groove at an angle nonparallel to the length of the groove.

13. The system of claim 8, further comprising a second plurality of planks and a second flashing having an extension and a head, wherein each plank of the second plurality of planks has a first end, wherein the structure further comprises a second groove, wherein the head of the second flashing is connectable to the second groove so that the extension of the second flashing extends from the groove generally parallel to the rear side of the structure, wherein the second flashing forms at least part of a plank channel having a width sized to receive the first end of one of the second plurality of planks.

14. The system of claim 8, the apparatus further comprising a second flashing, a second structure, and a second plurality of planks, wherein each plank of the second plurality of planks has a first end, wherein the second flashing has an extension and a head and the second structure has a groove and a rear side, wherein the head of the second flashing is connectable to the groove of the second structure so that the extension of the second flashing extends from the second structure generally parallel to the rear side of the second structure, wherein the second flashing forms at least part of a plank channel having a width sized to receive the first end of one of the second plurality of planks, wherein the second structure is attached to the structure at an angle.

15. The system of claim 8, further comprising an interlock for positioning a first plank and a second plank of the plurality of planks so that a portion of the second plank overlaps a portion of the first plank, the interlock having a first positioning surface for engaging the first plank, and a second positioning surface for engaging the second plank.

16. The system of claim 15, wherein the first positioning surface of the interlock comprises an upper abutment surface for abutting a side surface of the first plank and a front abutment surface for abutting a front surface of the first plank.

17. The system of claim 15, wherein the interlock includes an engagement member comprising the second positioning surface, wherein the second plank comprises a slot having a reciprocal positioning surface, wherein the slot is shaped to receive the engagement member so that the reciprocal positioning surface engages the second positioning surface.

18. The system of claim 8, further comprising an upper joint member having a plank attachment surface for abutting a plank, a fastener head recess positioned opposite the plank attachment surface, and an extension for attachment to the building.

19. A method for installing lap siding on an exterior of a building, the method comprising:

disposing a part of a head of a flashing within a groove of a structure so that an extension of the flashing extends from the structure generally parallel to a rear side of the structure, wherein the part of the head has a shape that generally follows a portion of a contour extending along a length of the groove, wherein the flashing forms

at least part of a plank channel having a width sized to receive a first end of a plank;

attaching the flashing to the building so that a rear side of the structure is disposed adjacent the building;

disposing the first end of the plank within the plank channel so that the plank extends from the plank channel; and

attaching the plank to the building.

20. The method of claim 19, further comprising the step of attaching the flashing to the structure.

21. The method of claim 19, wherein the structure comprises a protrusion extending generally parallel to the groove, wherein the head of the flashing comprises an attachment channel, wherein the method further comprises the step of disposing the protrusion of the structure within the attachment channel.

22. The method of claim 19, further comprising the steps of engaging the plank with a first positioning surface of an interlock and engaging a second plank with a second positioning surface of the interlock, so that a portion of the second plank overlaps a portion of the plank.

23. The method of claim 22, wherein the first positioning surface of the interlock comprises an upper abutment surface for engaging a side surface of the plank and a front abutment surface for abutting a front surface of the plank.

24. The method of claim 22, wherein the interlock includes an engagement member comprising the second positioning surface, wherein the second plank comprises a slot having a reciprocal positioning surface, wherein the method further comprises the step of disposing the engagement member within the slot so that the reciprocal positioning surface engages the second positioning surface.

25. The method of claim 22, further comprising the steps of disposing an end of the second plank within the plank channel and attaching the second plank to the building.

26. The method of claim 22, further comprising the step of attaching the interlock to the plank.

27. The method of claim 19, further comprising the step of disposing a plank of a second plurality of planks in a plank channel at least partially formed by a second flashing having an extension and a head and attaching the second plank to the building, wherein the plank further comprises a second groove, wherein the head of the second flashing is attached to the second groove so that the extension of the second flashing extends from the structure generally parallel to the rear side of the structure and behind the plank of the second plurality of planks.

28. The method of claim 19, further comprising the step of attaching a second structure to the structure at an angle, wherein the second structure is attached to a second flashing, the method further comprising the step of disposing a plank of a second plurality of planks in a plank channel at least partially formed by a second flashing and attaching the plank of the second plurality of planks to the building.

29. The method of claim 19, further comprising the steps of abutting a plank attachment surface of an upper joint member against the plank, attaching the upper joint member to the plank with a fastener so that a head of the fastener is disposed within a fastener head recess positioned opposite the plank attachment surface, and attaching an extension of the upper joint member to the building.