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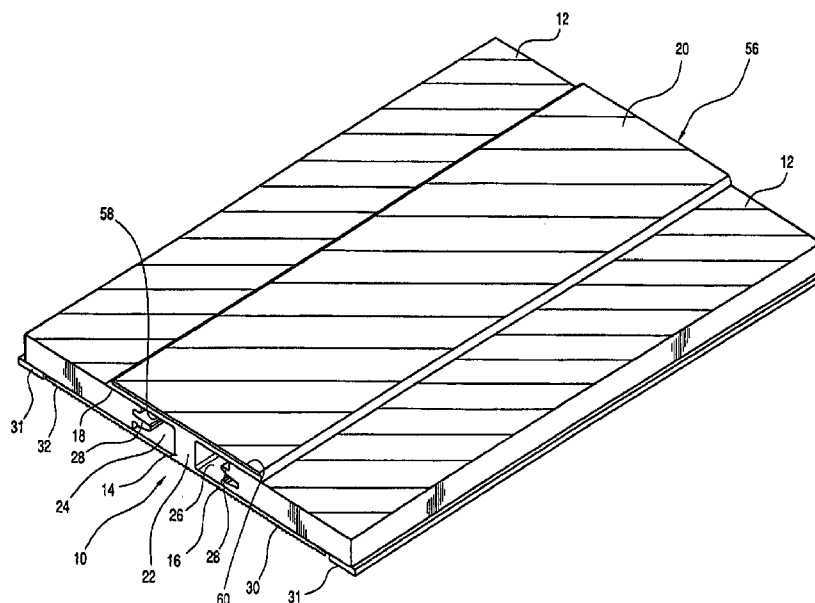
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(54) **Title:** LAMINATE-CLAD FLOOR MOLDING AND METHOD FOR MANUFACTURE



(57) **Abstract:** A laminate-clad molding (10) includes an elongated molding body (14) having a base (16) and a surfacing body (18) substantially parallel to and connected to the base (16) via a stem (22) in a manner defining a first recess (24) along a first side of the stem, the first recess (24) being shaped and dimensioned for receiving an edge (28) of a first plank (12) in a manner permitting planar movement of the first plank (12) relative to the molding (10). A strip of decorative laminate (20) is secured to the surfacing body (18) to form a surfacing structure (56). A method for manufacturing the laminate-clad molding (10) is also disclosed.

LAMINATE-CLAD FLOOR MOLDING AND METHOD FOR MANUFACTURE

CROSS REFERENCE TO RELATED APPLICATION

5 This applications claims the benefit of U.S. Provisional Application Serial No. 60/794,832, filed April 26, 2006, entitled 'LAMINATE-CLAD FLOOR MOLDING AND METHOD OF MANUFACTURE'.

BACKGROUND OF THE INVENTION

10 1. Field of the Invention

 The invention relates to molding. More particularly, the invention relates to laminate-clad floor molding.

2. Description of the Prior Art

 Laminate flooring has become a very popular alternative to hardwood flooring products and offers advantages over traditional hardwood flooring. Laminate flooring
15 commonly includes a wear surface glued to a substrate. The wear surface is most often wear-resistant high pressure decorative laminate and the substrate is commonly composed of fiberboard or particleboard. Laminate flooring is commonly manufactured in planks or tiles that are assembled in a side-by-side manner through the use of various
20 tongue and groove arrangements.

 Unfortunately, laminate flooring, like hardwood flooring, is susceptible to the effects of the environment and will expand and contract under the influence of temperature and moisture. As such, laminate flooring planks are commonly installed as a "floating system" with no direct attachment to the underlying subfloor. When installed, a
25 small distance is typically left between the flooring and the surrounding walls. The space between the flooring and the walls allows for expansion and contraction of the flooring planks.

Buckling of the assembled flooring planks at their respective seams may, however, occur if substantial constraining weight is placed upon the flooring preventing or limiting the expansion and/or contraction of the flooring. Buckling may also occur where the clearance spacing around the wall and the flooring edge is not sufficient or is restricted. This problem is especially pronounced in large spaces and long corridors where constraining weights or physical room size creates undesirable movement by limiting the flooring planks ability to freely expand and/or contract. In these circumstances the flooring may preferably be divided into sections by the imposition of small gaps at predetermined intervals. Such intermediate gaps allow for greater expansion and/or contraction of the flooring. As these gaps are not aesthetically or functionally desirable, moldings have been developed for covering these gaps.

In addition to the need for spacing along the expanse of a floor, it also sometimes becomes impossible or infeasible to directly connect adjacent flooring planks, for example, at the threshold of a doorway or when different flooring materials of varying surface thicknesses are used in adjoining rooms.

Aluminum molding is currently used as a transition structure for laminate and other flooring planks. However, extruded aluminum molding is often not an aesthetically desirable product due to the adjoining of different materials, colors and/or patterns along a flooring surface.

As such, a need currently exists for floor molding which permits the joining of adjacent flooring planks without compromising the aesthetics of the flooring surface. The present invention provides such molding.

SUMMARY OF THE INVENTION

It is, therefore, an object of the present invention to provide a laminate-clad molding. The molding includes an elongated molding body having a base and a surfacing body substantially parallel to and connected to the base via a stem in a

manner defining a first recess along a first side of the stem, the first recess being shaped and dimensioned for receiving an edge of a first plank in a manner permitting planar movement of the first plank relative to the molding. A strip of decorative laminate is secured to the surfacing body to form a surfacing structure.

5 It is also an object of the present invention to provide a laminate-clad molding wherein the stem is a central stem and bisects the base and the surfacing body to define the first recess and an opposed second recess for receiving an edge of a second plank in a manner permitting planar movement of the first plank relative to the second plank.

 It is another object of the present invention to provide a laminate-clad molding
10 wherein the strip of decorative laminate is high pressure decorative laminate.

 It is a further object of the present invention to provide a laminate-clad molding wherein the base includes a lower face having longitudinally extending grooves.

 It is also another object of the present invention to provide a laminate-clad
15 molding wherein the base includes an upper face having first and second external edges with a downward taper.

 It is also a further object of the present invention to provide a laminate-clad molding wherein the surfacing structure has a thickness of less than approximately 0.070 inches.

20 It is still another object of the present invention to provide a laminate-clad molding wherein the surfacing body includes a longitudinally extending central recess shaped and dimensioned for receiving the strip of decorative laminate.

 It is yet another object of the present invention to provide a laminate-clad molding wherein the surfacing body includes longitudinally extending first and second
25 lateral edges defining edges of the central recess, and wherein the first and second lateral edges are distinctly colored from the strip of decorative laminate.

 It is also an object of the present invention to provide a laminate-clad molding

wherein the surfacing body includes longitudinally extending first and second lateral edges defining edges of the central recess, and wherein the first and second lateral edges respectively include side walls having a depth substantially equivalent to the depth of the strip of decorative laminate such that an upper surface of the molding is substantially smooth as it extends from the first lateral edge, over the strip of decorative laminate and to the second lateral edge.

It is a further object of the present invention to provide a laminate-clad molding wherein the central recess includes a textured bonding surface to which the strip of decorative laminate is secured.

It is still a further object of the present invention to provide a laminate-clad molding wherein the molding body is aluminum.

It is yet a further object of the present invention to provide a laminate-clad molding wherein the aluminum is anodized.

It is also an object of the present invention to provide a laminate-clad molding including a cover member extending from the surfacing body in a direction away from a second side of the stem.

It is also another object of the present invention to provide a laminate-clad molding including a transition platform extending from a second side of the stem.

It is also a further object of the present invention to provide a method for manufacturing a laminate-clad molding. The method is achieved by first forming an extrusion die for the production of an elongated molding body including a base and a surfacing body substantially parallel to and connected to the base via a stem in a manner defining a first recess along a first side of the stem, the first recess being shaped and dimensioned for receiving an edge of a first plank in a manner permitting planar movement of the first plank relative to the molding. The molding body is then extruded, a decorative laminate is provided, and the decorative laminate is secured to the molding body.

Other objects and advantages of the present invention will become apparent from the following detailed description when viewed in conjunction with the accompanying drawings, which set forth certain embodiments of the invention.

5 BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an end view of laminate-clad floor molding in accordance with a preferred embodiment of the present invention.

Figure 2 is a perspective view of a length of the laminate-clad floor molding shown in Figure 1.

10 Figure 3 is a perspective view of the length of the laminate-clad floor molding of Figure 2 wherein flooring planks have been inserted into both sides thereof.

Figure 4 is an end view of the laminate-clad molding of Figure 1 wherein dimensions are shown.

15 Figures 5 and 6 are respectively a cross sectional view and a perspective view of an alternate laminate-clad floor molding in accordance with the present invention.

Figures 7 and 8 are respectively a cross sectional view and a perspective view of a laminate-clad floor molding in accordance with yet another embodiment of the present invention.

20 Figures 9 and 10 are respectively a cross sectional view and a perspective view of another laminate-clad floor molding in accordance with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The detailed embodiments of the present invention are disclosed herein. It should be understood, however, that the disclosed embodiments are merely exemplary
25 of the invention, which may be embodied in various forms. Therefore, the details disclosed herein are not to be interpreted as limiting, but merely as the basis for the claims and as a basis for teaching one skilled in the art how to make and/or use the

invention.

With reference to the various figures, and in accordance with a preferred embodiment, a laminate-clad floor molding 10 is disclosed. In accordance with a preferred embodiment of the present invention, the molding 10 is adapted for use in conjunction with laminate flooring planks 12. The molding 10 allows for adjacent first and second flooring planks 12 to be linked in a manner permitting expansion and/or contraction thereof without revealing a seam between the laminate flooring planks 12. As such, the molding 10 permits planar movement of the edges 28 of the first and second flooring planks 12 relative to the molding 10 itself and relative to each other.

As those skilled in the art will certainly appreciate, molding 10 is often required at the junction of the flooring planks 12 where it is impossible, or simply not feasible, to connect the flooring planks 12 in a tradition manner. The present molding 10 provides a structure allowing for connection of the flooring planks 12 in a manner that provides a consistent decorative surface while still providing for expansion and/or contraction of the adjacent flooring planks 12. The present molding 10 is particularly well suited for use in conjunction with laminate flooring planks 12, because, and as discussed below in greater detail, the molding 10 may be matched with the flooring planks 12 by applying the same decorative laminate to both the flooring planks 12 and the molding 10.

While the present molding is disclosed as being adapted for use in conjunction with laminate flooring planks, the concepts underlying the present molding may be applied to a variety of applications without departing from the spirit of the present invention. For example, the present molding may be used in conjunction with wall panel systems, ceiling panel systems, soffit and fascia systems used on the exterior of homes, etc.

The molding 10 includes an elongated molding body 14 having a generally I-shaped cross section. In accordance with a preferred embodiment, the molding body

14 has a consistent profile along its length and is extruded from aluminum. However, it is contemplated extruded plastics may be used within the spirit of the present invention.

The molding body 14 includes a base 16 and a surfacing body 18 connected to the base 16 via a central stem 22 that bisects both the base 16 and the surfacing body 18. The central stem 22 connects the base 16 to the surfacing body 18 such that the base 16 and surfacing body 18 are substantially parallel. The surfacing body 18 includes a strip of high pressure decorative laminate 20 secured thereto in a manner discussed below in greater detail. Bisecting of the base 16 and the surfacing body 18 defines first and second base wings 16a, 16b and first and second surfacing body wings 18a, 18b. As such, the base 16, central stem 22 and surfacing body 18 define opposed first and second recesses 24, 26 on first and second sides 23a, 23b of the central stem 22. The first and second recesses 24, 26 are shaped and dimensioned for receiving the edges 28 of laminate flooring planks 12 in a manner permitting movement of the laminate flooring planks 12 relative to the molding 10 and relative to an adjacent laminate flooring plank 12 positioned within the opposed first and second recesses 24, 26 of the molding 10.

The base 16 is shaped and dimensioned to sit upon a support surface 29 to which flooring planks 12 are being applied. As such, and in accordance with a preferred embodiment, the base 16 has a thickness substantially the same as the padding 31 upon which the flooring planks 12 are placed during installation. As a result, the flooring planks 12 lie at a height substantially in line with the first or second recesses 24, 26 such that they are not unduly angled as they extend into the first and second recesses 24, 26.

The base 16 includes a planar lower face 30 shaped and dimensioned to sit upon the support surface 29. The base 16 further includes longitudinally extending grooves 32 formed along the lower face 30. The grooves 32 assist in creating friction

between the molding 10 and the support surface 29 to better position the molding 10 upon the support surface 29. For example, adhesive is at times used to securely position the molding 10 upon the support surface 29 and the adhesive will, therefore, interact with the increased surface area provided by the grooves 32 to facilitate bonding to the support surface 29. The grooves 32 also assist in leveling of the molding 10 relative to the support surface 29 by biting therein and aid in extrusion of the molding 10.

The base 16 further includes an upper face 34. In view of the fact the upper face 34 is divided by the central stem 22, the upper face 34 may be thought of as being composed of a first lateral upper face member 36 along the first base wing 16a and a second lateral upper face member 38 along the second base wing 16b. The first and second lateral upper face members 36, 38 are substantially identical and are positioned on opposite sides of the central stem 22. The upper face 34 is substantially parallel to the lower face 30, but includes first and second tapered surfaces 40, 42 at the respective lateral sides thereof. That is, each of the first and second lateral upper face members 36, 38 includes an internal edge 44, 46 adjacent the central stem 22, a substantially flat central surface 48, 50 and an external edge 52, 54 adjacent the opening defined by the respective first and second recesses 24, 26, wherein each of the external edges 52, 54 of the first and second lateral upper face members 36, 38 includes a downward taper allowing for a transition in the flooring plank 12 as it is maintained above the support surface 29 in conjunction with the padding 31 when it is positioned within either the first or second recess 24, 26 of the molding 10.

The upper face 34, in particular, the first and second lateral upper face members 36, 38, of the base 16 is further provided with longitudinally extending first and second nail grooves 34a, 34b adjacent the respective external edges 52, 54. These nail grooves 34a, 34b provide an alignment structure when it is desirable to nail, or otherwise secure, the molding 10 to the support surface 29. The nail grooves 34a, 34b

also provide a recess shaped and dimensioned for receiving the head of a nail such that it is substantially counter sunk along the upper face 34 of the base 16. The nail grooves 34a, 34b also work in conjunction with the malleable nature of the aluminum to permit insertion of nails without deforming the first or second recesses 24, 26.

5 As to the surfacing body 18 of the molding body 14, a sheet of high pressure decorative laminate 20 is adhered thereto in a manner creating a surfacing structure 56 of the molding 10. The surfacing structure 56 is substantially parallel to the base 16. By constructing the molding body 14 from extruded aluminum, the surfacing structure 56 may be constructed with minimal thickness providing only a slight rise in the
10 flooring surface when one moves over the present molding 10. As such, and in accordance with a preferred embodiment of the present invention, the surfacing structure 56 has a thickness that is less than approximately 0.070 inches.

 The surfacing body 18 includes a lower surface 58 which faces the upper face 34 of the base 16 and an upper surface 60 which faces away from the base 16 and is
15 oriented for exposure when the molding 10 is installed with flooring planks 12 inserted within the first and second recesses 24, 26. As with the base 16, the central stem 22 divides the lower surface 58 of the surfacing body 18 into a first lateral lower surface member 62 along the first surfacing body wing 18a and a second lateral lower surface member 63 along the second surfacing body wing 18b. The first and second lateral
20 lower surface members 62, 63 are substantially identical and are positioned on opposite sides of the central stem 22.

 The lower surface 58 is substantially parallel to the upper surface 60. The upper surface 60 includes a longitudinally extending central recess 64 shaped and dimensioned for receiving a strip of high pressure decorative laminate 20. As those skilled in the art
25 will certainly appreciate, high pressure decorative laminate is meant to refer to multiple sheets of resin impregnated paper which have been formed under heat and pressure to form a consolidated structure. Although high pressure decorative laminate is disclosed

in accordance with a preferred embodiment, it is contemplated the decorative surface could be chosen from a variety of wear resistant materials appropriate for flooring applications, including, but not limited to, wood veneer, a vinyl strip, a plastic strip (for example, a florescent strip which might be used in a movie theater), continuous
5 pressure laminate, direct pressure laminate, or other decorative surfacing materials.

More particularly, the upper surface 60 includes longitudinally extending first and second lateral edges 66, 68 defining the edges of the central recess 64. The central recess 64 is defined by a bonding surface 70 to which the high pressure decorative laminate 20 is secured and first and second side walls 72, 74 which form part of the
10 first and second lateral edges 66, 68 of the upper surface 60. The first and second side walls 72, 74 have a depth substantially equivalent to the depth of the high pressure decorative laminate 20 applied within the central recess 64. As such, the central recess 64 is preferably less than approximately 0.020 inches deep. In this way, when the upper surface 60 of the molding 10 is fully assembled with the decorative laminate 20 secured
15 within the central recess 64 to form the surfacing structure 56, the upper surface 60, in particular, the surfacing structure 56, is substantially smooth as it extends from the first lateral edge 66, over the decorative laminate 20 and to the second lateral edge 68.

As described above, the first and second lateral edges 66, 68 of the surfacing structure 56 form boundaries for the decorative laminate 20 as it is seated within the
20 central recess 64. As such, the first and second lateral edges 66, 68 are exposed when the molding 10 is fully assembled and the decorative laminate 20 is bound within the central recess 64. Exposure of the first and second lateral edges 66, 68 allows for the provision of a visual surface height variation warning that the molding 10 is positioned between adjacent edges of flooring planks 12. As such, and in accordance with a
25 preferred embodiment of the present invention, the first and second lateral edges 66, 68 of the surfacing structure 56 are colored in a manner which readily distinguishes them from the decorative laminate 20 applied within the central recess 64. In this way,

one crossing the molding 10 will readily identify the slight surface height variation rise created by the molding 10 and will, therefore, be less inclined to trip over, or otherwise come into inadvertent contact with, the molding 10. This is especially important in hospitals, nursing homes, operating rooms, and sensitive electronic manufacturing facilities where it is important to provide a warning when one is approaching a molding separating adjacent expanses of flooring.

As those skilled in the art will appreciate, it is important that the decorative laminate 20 be securely bound within the central recess 64. The molding body 14 is, therefore, treated to enhance bonding between the decorative laminate 20 and the surfacing body 18. In accordance with a preferred embodiment, the molding body 14 is anodized. In addition, the bonding surface 70 of the central recess 64 is provided with grooves 76 shaped and dimensioned for assisting in the application of adhesive bonding the decorative laminate 20 within the central recess 64 of the surfacing body 18 by creating a textured bonding surface 70. Although grooves are disclosed in accordance with a preferred embodiment as they may be created during extrusion of the molding body, other texturing structures may be employed without departing from the spirit of the present invention.

In practice, the molding 10 is positioned upon the floor at a location where one desires to permit expansion and/or contraction between adjacent flooring planks 12, for example, at a doorway, to separate a large expanse of flooring or to transition between adjacent rooms. Padding 31 is then positioned on opposite sides of the molding 10 abutting or substantially adjacent the base 16. A first flooring plank 12 is slid into the first recess 24 of the molding 10. The edge 28 of the first flooring plank 12 is positioned within the first recess 24 such that it extends approximately midway along the depth of the first recess 24. In this way, the first flooring plank 12 may expand and/or contract without moving beyond the bounds defined by the surfacing structure 56. Once the first flooring plank 12 is seated within the first recess 24, the

edge of the second flooring plank 12 is placed within the second recess 26. As with the first recess 24, the edge 28 is positioned within the second recess 26 such that it extends approximately midway along the depth of the second recess 26 so that the second flooring plank 12 may expand and contract without moving beyond the bounds defined by the surfacing structure 56. As those skilled in the art will appreciate, the molding 10 may be longer than a single plank and, therefore, multiple planks may be secured along opposite sides of the molding 10.

The embodiment discussed above with reference to Figure 1 through 4 relates to a laminate-clad floor molding adapted for positioning between spans of flooring planks. However, and as those skilled in the art will certainly appreciate, other molding applications are required within the flooring industry. As such, and with reference to Figure 6, 7, 8, 9 and 10, various alternate embodiments within the spirit of the present invention are disclosed.

With reference to Figures 5 and 6, a laminate-clad floor end-cap molding 110 is disclosed. The end-cap molding 110 in accordance with this embodiment is particularly adapted for positioning at the end of a span of flooring planks 112 along a wall 113 or other barrier.

In accordance with this embodiment, the end-cap molding 110 includes an elongated body 114 having a generally C-shaped cross section. In accordance with a preferred embodiment, the molding body 114 has a consistent profile along its length and is extruded from aluminum. However, it is contemplated extruded plastics may be used within the spirit of the present invention.

The molding body 114 includes a base 116 and a surfacing body 118. A stem 122 connects the surfacing body 118 to the base 116. The stem 122 connects the base 116 to the surfacing body 118 such that the base 116 and the surfacing body 118 are substantially parallel. The surfacing body 118 includes a strip of high pressure decorative laminate 120 secured thereto. Positioning of the stem 122 adjacent the

respective first ends of the base 116 and the surfacing body 118 defines a first base wing 116a and a first body wing 118a. The base 116, stem 122 and surfacing body 118 define a first recess 124 shaped and dimensioned for receiving the edge 128 of a laminate flooring plank 112 along a first side 123a of the stem 122 in a manner
5 permitting movement of the laminate flooring plank 112 relative to the end-cap molding 110 and relative to the wall 113 or other barrier adjacent the end-cap molding 110.

As with the prior embodiment, the base 116 is shaped and dimensioned to sit upon a support surface 129 to which the flooring plank 112 is to be applied and has a
10 thickness substantially the same as the padding 131 upon which the flooring plank 112 is placed during installation. As such, the flooring plank 112 lies at a height substantially in line with the first recess 124 such that it is not unduly angled as it extends into the first recess 124.

The base 116 includes a planar lower face 130 shaped and dimensioned to sit
15 upon the support surface 129. The base 116 further includes longitudinally extending grooves 132 formed along the lower face 130. The grooves 132 assist in creating friction between the end-cap molding 110 and the support surface 129 to better position the end-cap molding 110 upon the support surface 129. As with the prior embodiment disclosed with reference to Figures 1 through 4, adhesive is at times used
20 to securely position the end-cap molding 110 upon the support surface 129 and the adhesive will, therefore, interact with the increased surface area provided by the grooves 132 to facilitate bonding to the support surface 129. The grooves 132 also assist in leveling the end-cap molding 110 relative to the support surface 129 by biting therein and aide in extrusion of the molding 110.

25 The base 116 further includes an upper face 134. The upper face 134 is substantially parallel to the lower face 130, but includes a first tapered surface 140 at the free end thereof. That is, the upper face 134 includes an internal edge 144 adjacent the

stem 122, a substantially flat central surface 148 and an external edge 152 adjacent the opening defined by the respective first recess 124, wherein the external edge 152 of the upper face 134 includes a downward taper allowing for a transition in the flooring plank 112 as it is maintained above the support surface 129 in conjunction with the padding 131 when it is positioned within the first recess 124 of the molding 110. As with the embodiment disclosed with reference to Figures 1 to 4, the upper face 134 of the base 116 is further provided with a longitudinally extending first nail groove 134a adjacent the external edge 152.

As to the surfacing body 118 of the molding body 114, a sheet of high pressure decorative laminate 120 is adhered thereto in a manner creating a surfacing structure 156, which is substantially similar to the surfacing structure 56 disclosed above, of the end-cap molding 110. The surfacing structure 156 is substantially parallel to the base 116.

The surfacing body 118 includes a lower surface 158 which faces the upper face 134 of the base 116 and an upper surface 160 which faces away from the base 116 and is oriented for exposure when the end-cap molding 110 is installed with flooring planks 112 inserted within the first recess 124.

The lower surface 158 is substantially parallel to the upper surface 160. The upper surface 160 includes a longitudinally extending central recess 164 shaped and dimensioned for receiving a strip of high pressure decorative laminate 120. As with the prior embodiment discussed with reference to Figures 1 through 4, various other decorative surfacing materials may be employed.

The upper surface 160 includes longitudinally extending first and second lateral edges 166, 168 defining the edges of the central recess 164. The central recess 164 is defined by a bonding surface 170 to which the high pressure decorative laminate 120 is secured and first and second side walls 172, 174 which form part of the first and second lateral edges 166, 168 of the upper surface 160. The first and second side walls

172, 174 have a depth substantially equivalent to the depth of the high pressure decorative laminate 120 applied within the central recess 164. As such, the central recess 164 is preferably less than approximately 0.020 inches deep. In this way, when the upper surface 160 of the molding 110 is fully assembled with the decorative
5 laminate 120 secured within the central recess 164 to form the surfacing structure 156, the upper surface 160, in particular, the surfacing structure 156, is substantially smooth as it extends from the first lateral edge 166, over the decorative laminate 120 and to the second lateral edge 168.

As described above, the first and second lateral edges 166, 168 of the surfacing
10 structure 156 form boundaries for the decorative laminate 120 as it is seated within the central recess 164. As such, the first and second lateral edges 166, 168 are exposed when the molding 110 is fully assembled and the decorative laminate 120 is bound within the central recess 164. Exposure of the first and second lateral edges 166, 168 allows for the provision of a visual surface height variation warning that the end-cap
15 molding 110 is positioned between the flooring plank 12 and the wall. As such, and as discussed above with regard to the embodiment disclosed in Figures 1 through 4, the first and second lateral edges 166, 168 of the surfacing structure 156 are preferably colored in a manner which readily distinguishes them from the decorative laminate 120 applied within the central recess 164.

20 In addition, and as with the molding 10 disclosed above, the molding body 114 is treated via anodizing to enhance bonding between the decorative laminate 120 and the surfacing body 118. In addition, the bonding surface 170 of the central recess 164 is provided with grooves 176 shaped and dimensioned for assisting in the application of adhesive bonding the decorative laminate 120 within the central recess 164 of the
25 surfacing body 118 by creating a textured bonding surface 170.

In practice, the end-cap molding 110 is mounted in substantially the same manner as discussed above with the prior embodiment disclosed with reference to

Figures 1 through 4, with the exception that instead of placing flooring planks on opposite sides of the molding, the molding 110 is positioned along the wall 113 or other structure, with a second side 123b of the stem 122 facing the wall 113 and a flooring plank 112 is secured along the other side of the end-cap molding 110.

5 With regard to Figure 7 and 8, an alternate embodiment is disclosed. This laminate-clad floor transition molding 210 is particularly adapted for utilization at a transition point between flooring planks 212 and carpeting 213. In accordance with this embodiment, the transition molding 210 includes an elongated body 214. In accordance with a preferred embodiment, the molding body 214 has a consistent
10 profile along its length and is extruded from aluminum. However, it is contemplated extruded plastics may be used within the spirit of the present invention.

 The molding body 214 includes a base 216 and a surfacing body 218. A stem 222 connects the surfacing body 218 to the base 216. The stem 222 connects the base 216 to the surfacing body 218 such that the base 216 and the surfacing body 218 are
15 substantially parallel. The surfacing body 218 includes a strip of high pressure decorative laminate 220 secured thereto. Positioning of the stem 222 adjacent the respective first ends of the base 216 and the surfacing body 218 defines a first base wing 216a and a first body wing 218a. The base 216, stem 222 and surfacing body 218 define a first recess 224 along a first side 223a of the stem 222 shaped and dimensioned
20 for receiving the edge 228 of a laminate flooring plank 212 in a manner permitting movement of the laminate flooring plank 212 relative to the transition molding 210 and relative to the carpeting 213 or other flooring material adjacent the transition molding 210.

 Since the transition molding 220 is intended to provide a transition between the
25 flooring planks 212 and carpeting 213, a cover member 280 extends from the surfacing body 218 from a second side 223b of the stem 222 and opposite the first body wing 218a. Improved appearance and use is achieved by providing the surfacing body 218

with a cover member 280 that tapers downwardly to a substantially thin free end 282 as it extends from the first body wing 218a to its free end 282. The cover member 280 is positioned at a height substantially in line with the first body wing 218a and extends from the stem 222 a distance sufficient to cover carpeting 213 positioned next to
5 flooring planks 212.

As with the prior embodiment, the base 216 is shaped and dimensioned to sit upon a support surface 229 to which the flooring plank 212 is to be applied and has a thickness substantially the same as the padding 231 upon which the flooring plank 212 is placed during installation. As such, the flooring plank 212 lies at a height
10 substantially in line with the first recess 224 such that it is not unduly angled as it extends into the first recess 224.

The base 216 includes a planar lower face 230 shaped and dimensioned to sit upon the support surface 229. The base 216 further includes longitudinally extending grooves 232 formed along the lower face 230. The grooves 232 assist in creating
15 friction between the transition molding 210 and the support surface 229 to better position the transition molding 210 upon the support surface 229. As with the prior embodiment disclosed with reference to Figures 1 through 4, adhesive is at times used to securely position the transition molding 210 upon the support surface 229 and the adhesive will, therefore, interact with the increased surface area provided by the
20 grooves 232 to facilitate bonding to the support surface 229. The grooves 232 also assist in leveling the transition molding 210 relative to the support surface 229 by biting therein and aide in extrusion of the transition molding 210.

The base 216 further includes an upper face 234. The upper face 234 is substantially parallel to the lower face 230, but includes a first tapered surface 240 at the
25 free end thereof. That is, the upper face 234 includes an internal edge 244 adjacent the stem 222, a substantially flat central surface 248 and an external edge 252 adjacent the opening defined by the respective first recess 224, wherein the external edge 252 of the

upper face 234 includes a downward taper allowing for a transition in the flooring plank 212 as it is maintained above the support surface 229 in conjunction with the padding 231 when it is positioned within the first recess 224 of the transition molding 210.

5 As with the embodiment disclosed with reference to Figures 1 to 4, the upper face 234 of the base 216 is further provided with a longitudinally extending first nail groove 234a adjacent the external edge 252.

 As to the surfacing body 218 of the molding body 214, a sheet of high pressure decorative laminate 220 is adhered to the first body wing 218a of the surfacing body
10 218 in a manner creating a surfacing structure 256, which is substantially similar to the surfacing structure 56 disclosed above, of the end-cap molding 210. The surfacing structure 256 is substantially parallel to the base 216. In addition to applying decorative laminate 220 to the first body wing 218a to create the surfacing structure 256, the upper surface 284 of the cover member 280 is prepared in an aesthetically desirably manner.

15 The surfacing body 218 includes a lower surface 258 which faces the upper face 234 of the base 216 and an upper surface 260 which faces away from the base 216 and is oriented for exposure when the transition molding 210 is installed with flooring planks 212 inserted within the first recess 224.

 The lower surface 258 is substantially parallel to the upper surface 260. The
20 upper surface 260 includes a longitudinally extending central recess 264 shaped and dimensioned for receiving a strip of high pressure decorative laminate 220. As with the prior embodiment discussed with reference to Figures 1 through 4, various other decorative surfacing materials may be employed.

 The upper surface 260 includes longitudinally extending first and second lateral
25 edges 266, 268 defining the edges of the central recess 264. The central recess 264 is defined by a bonding surface 270 to which the high pressure decorative laminate 220 is secured and first and second side walls 272, 274 which form part of the first and

second lateral edges 266, 268 of the upper surface 260. The first and second side walls 272, 274 have a depth substantially equivalent to the depth of the high pressure decorative laminate 220 applied within the central recess 264. As such, the central recess 264 is preferably less than approximately 0.020 inches deep. In this way, when
5 the upper surface 260 of the transition molding 210 is fully assembled with the decorative laminate 220 secured within the central recess 264 to form the surfacing structure 256, the upper surface 260, in particular, the surfacing structure 256, is substantially smooth as it extends from the first lateral edge 266, over the decorative laminate 220 and to the second lateral edge 268.

10 As described above, the first and second lateral edges 266, 268 of the surfacing structure 256 form boundaries for the decorative laminate 220 as it is seated within the central recess 264. As such, the first and second lateral edges 266, 268 are exposed when the transition molding 210 is fully assembled and the decorative laminate 220 is bound within the central recess 264. Exposure of the first and second lateral edges
15 266, 268 allows for the provision of a visual surface height variation warning that the transition molding 210 is positioned between the flooring plank 212 and the carpeting 213. As such, and as discussed above with regard to the embodiment disclosed in Figures 1 through 4, the first and second lateral edges 266, 268 of the surfacing structure 256 are preferably colored in a manner which readily distinguishes them from
20 the decorative laminate 220 applied within the central recess 264. In addition, the free end 282 of the cover member 280 may be similarly colored to enhance viewing of the transition molding 210.

In addition, as with the molding 210 disclosed above, the molding body 214 is treated via anodizing to enhance bonding between the decorative laminate 220 and
25 the surfacing body 218. In addition, the bonding surface 270 of the central recess 264 is provided with grooves 276 shaped and dimensioned for assisting in the application of adhesive bonding the decorative laminate 220 within the central recess 264 of the

surfacing body 218 by creating a textured bonding surface 270.

In practice, the transition molding 210 is mounted in substantially the same manner as discussed above with the prior embodiment disclosed with reference to Figures 1 through 4, with the exception that instead of placing flooring planks on
5 opposite sides of the transition molding 210, the carpeting 213 is positioned on one side of the transition molding 210 and a flooring plank 212 is secured within the transition molding 210 on the other side thereof.

Referring now to Figures 9 and 10, a further embodiment is disclosed. This embodiment is particularly adapted for providing laminate-clad floor transition molding
10 310 which may be utilized at a transition point between flooring planks 312 and another flooring surface 313 at a lower level than the flooring planks 312. In accordance with this embodiment, the transition molding 310 includes an elongated body 314. In accordance with a preferred embodiment, the molding body 314 has a consistent profile along its length and is extruded from aluminum. However, it is
15 contemplated extruded plastics may be used within the spirit of the present invention.

The molding body 314 includes a base 316 and a surfacing body 318. A stem 322 connects the surfacing body 318 to the base 316. The stem 322 connects the base 316 to the surfacing body 318 such that the base 316 and the surfacing body 318 are substantially parallel. The surfacing body 318 includes a strip of high pressure
20 decorative laminate 320 secured thereto. Positioning of the stem 322 adjacent the respective first ends of the base 316 and the surfacing body 318 defines a first base wing 316a and a first body wing 318a. The base 316, stem 322 and surfacing body 318 define a first recess 324 along a first side 323a of the stem 322 shaped and dimensioned for receiving the edge 328 of a laminate flooring plank 312 in a manner permitting
25 movement of the laminate flooring plank 312 relative to the transition molding 310 and relative to the flooring surface 313 or other flooring material adjacent the transition molding 310.

Since the transition molding 320 is intended to provide a transition between the flooring planks 312 and a lower level flooring surface 313, a downwardly tapering transition platform 380 extends from the second side 323b of the stem 322 and is integrally formed therewith. Improved appearance and use is achieved by providing the transition platform 380 with an upper surface 382 that tapers downwardly from
5 the transition platform 380 with an upper surface 382 that tapers downwardly from substantial alignment with the surfacing body 318 to a substantially thin free end 384 aligned with the base 316 as it extends from the first body wing 318a to its free end.

As with the prior embodiment, the base 316 is shaped and dimensioned to sit upon a support surface 329 to which the flooring plank 312 is to be applied and has a
10 thickness substantially the same as the padding 331 upon which the flooring plank 312 is placed during installation. As such, the flooring plank 312 lies at a height substantially in line with the first recess 324 such that it is not unduly angled as it extends into the first recess 324.

The base 316 includes a planar lower face 330 shaped and dimensioned to sit
15 upon the support surface 329. The base 316 further includes longitudinally extending grooves 332 formed along the lower face 330. The grooves 332 assist in creating friction between the transition molding 310 and the support surface 329 to better position the transition molding 310 upon the support surface 329. As with the prior embodiment disclosed with reference to Figures 1 through 4, adhesive is at times used
20 to securely position the transition molding 310 upon the support surface 329 and the adhesive will, therefore, interact with the increased surface area provided by the grooves 332 to facilitate bonding to the support surface 329. The grooves 332 also assist in leveling the transition molding 310 relative to the support surface 329 by biting therein and aide in extrusion of the transition molding 310. The transition platform
25 380 is similarly provided with a lower surface 388 having grooves 390 for engaging the support surface 329.

The base 316 further includes an upper face 334. The upper face 334 is

substantially parallel to the lower face 330, but includes a first tapered surface 340 at the free end thereof. That is, the upper face 334 includes an internal edge 344 adjacent the stem 322, a substantially flat central surface 348 and an external edge 352 adjacent the opening defined by the respective first recess 324, wherein the external edge 352 of the upper face 334 includes a downward taper allowing for a transition in the flooring plank 312 as it is maintained above the support surface 329 in conjunction with the padding 331 when it is positioned within the first recess 324 of the transition molding 310.

As with the embodiment disclosed with reference to Figures 1 to 4, the upper face 334 of the base 316 is further provided with a longitudinally extending first nail groove 334a adjacent the external edge 352.

As to the surfacing body 318 of the molding body 314, a sheet of high pressure decorative laminate 320 is adhered thereto in a manner creating a surfacing structure 356, which is substantially similar to the surfacing structure 56 disclosed above, of the transition molding 310. The surfacing structure 356 is substantially parallel to the base 316. In addition to applying decorative laminate 320 to the surfacing structure 356, decorative laminate may also be applied to the upper surface 382 of the transition platform 380. As such, grooves 392 and a recess 394, similar to those disclosed for use in adhering decorative laminate to the surfacing body are provided thereon to enhance adhesion and positioning of the decorative laminate.

The surfacing body 318 includes a lower surface 358 which faces the upper face 334 of the base 316 and an upper surface 360 which faces away from the base 316 and is oriented for exposure when the transition molding 310 is installed with flooring planks 312 inserted within the first recesses 324.

The lower surface 358 is substantially parallel to the upper surface 360. The upper surface 360 includes a longitudinally extending central recess 364 shaped and dimensioned for receiving a strip of high pressure decorative laminate 320. As with the

prior embodiment discussed with reference to Figures 1 through 4, various other decorative surfacing materials may be employed.

The upper surface 360 includes longitudinally extending first and second lateral edges 366, 368 defining the edges of the central recess 364. The central recess 364 is defined by a bonding surface 370 to which the high pressure decorative laminate 320 is secured and first and second side walls 372, 374 which form part of the first and second lateral edges 366, 368 of the upper surface 360. The first and second side walls 372, 374 have a depth substantially equivalent to the depth of the high pressure decorative laminate 320 applied within the central recess 364. As such, the central recess 364 is preferably less than approximately 0.020 inches deep. In this way, when the upper surface 360 of the transition molding 310 is fully assembled with the decorative laminate 320 secured within the central recess 364 to form the surfacing structure 356, the upper surface 360, in particular, the surfacing structure 356, is substantially smooth as it extends from the first lateral edge 366, over the decorative laminate 320 and to the second lateral edge 368.

As described above, the first and second lateral edges 366, 368 of the surfacing structure 356 form boundaries for the decorative laminate 320 as it is seated within the central recess 364. As such, the first and second lateral edges 366, 368 are exposed when the transition molding 310 is fully assembled and the decorative laminate 320 is bound within the central recess 364. Exposure of the first and second lateral edges 366, 368 allows for the provision of a visual surface height variation warning that the transition molding 310 is positioned between the flooring plank 312 and the flooring surface 313. As such, and as discussed above with regard to the embodiment disclosed in Figures 1 through 4, the first and second lateral edges 366, 368 of the surfacing structure 356 are preferably colored in a manner which readily distinguishes them from the decorative laminate 320 applied within the central recess 364. In addition, the free end 384 of the transition platform 380 may be similarly colored to enhance viewing of

the transition molding 310.

In addition, as with the molding 10 disclosed above, the molding body 314 is treated via anodizing to enhance bonding between the decorative laminate 320 and the surfacing body 318. In addition, the bonding surface 370 of the central recess 364 is provided with grooves 376 shaped and dimensioned for assisting in the application of adhesive bonding the decorative laminate 320 within the central recess 364 of the surfacing body 318 by creating a textured bonding surface 370.

In practice, the transition molding 310 is mounted in substantially the same manner as discussed above with the prior embodiment disclosed with reference to Figures 1 through 4, with the exception that instead of placing flooring planks on opposite sides of the transition molding 310, the transition molding 310 is mounted and a flooring plank 312 is secured along one side of the transition molding 310.

The laminate-clad molding described above is manufactured, in accordance with a preferred embodiment, in the following manner. First, an extrusion die is formed. The die is shaped and dimensioned for the production the elongated molding body described above. Thereafter, the molding body is extruded and anodized, and decorative laminate is provided for secure attachment, for example, via adhesive bonding, to the molding body.

As briefly discussed above, although the moldings described above in accordance with the various embodiments are shown with a single flooring plank along one side thereof, those skilled in the art will appreciate that multiple flooring planks may be secured along one side depending upon the length of the molding being used.

While the preferred embodiments have been shown and described, it will be understood that there is no intent to limit the invention by such disclosure, but rather, is intended to cover all modifications and alternate constructions falling within the spirit and scope of the invention.

CLAIMS:

1. A laminate-clad molding comprising:
an elongated molding body including a base and a surfacing body substantially parallel to and connected to the base via a stem in a manner defining a first recess along a first side of the stem, the first recess being shaped and dimensioned for receiving an edge of a first plank in a manner permitting planar movement of the first plank relative to the molding; and
a strip of decorative laminate secured to the surfacing body to form a surfacing structure.
2. The laminate-clad molding according to claim 1, wherein the stem is a central stem and bisects the base and the surfacing body to define the first recess and an opposed second recess for receiving an edge of a second plank in a manner permitting planar movement of the first plank relative to the second plank.
3. The laminate-clad molding according to claim 1, wherein the strip of decorative laminate is high pressure decorative laminate.
4. The laminate-clad molding according to claim 1, wherein the base includes a lower face having longitudinally extending grooves.
5. The laminate-clad molding according to claim 4, wherein the base includes an upper face having first and second external edges with a downward taper.
6. The laminate-clad molding according to claim 1, wherein the surfacing structure has a thickness of less than approximately 0.070 inches.

7. The laminate-clad molding according to claim 1, wherein the surfacing body includes a longitudinally extending central recess shaped and dimensioned for receiving the strip of decorative laminate.

8. The laminate-clad molding according to claim 7, wherein the surfacing body includes longitudinally extending first and second lateral edges defining edges of the central recess, and wherein the first and second lateral edges are distinctly colored from the strip of decorative laminate.

9. The laminate-clad molding according to claim 7, wherein the surfacing body includes longitudinally extending first and second lateral edges defining edges of the central recess, and wherein the first and second lateral edges respectively include side walls having a depth substantially equivalent to the depth of the strip of decorative laminate such that an upper surface of the molding is substantially smooth as it extends from the first lateral edge, over the strip of decorative laminate and to the second lateral edge.

10. The laminate-clad molding according to claim 7, wherein the central recess includes a textured bonding surface to which the strip of decorative laminate is secured.

11. The laminate-clad molding according to claim 1, wherein the molding body is aluminum.

12. The laminate-clad molding according to claim 1, wherein the aluminum is anodized.

13. The laminate-clad molding according to claim 1, further including a cover member extending from the surfacing body in a direction away from a second side of the stem.

14. The laminate-clad molding according to claim 1, further including a transition platform extending from a second side of the stem.

15. A method for manufacturing a laminate-clad molding, the method comprising the steps of:

forming an extrusion die for the production of an elongated molding body including a base and a surfacing body substantially parallel to and connected to the base via a stem in a manner defining a first recess along a first side of the stem, the first recess being shaped and dimensioned for receiving an edge of a first plank in a manner permitting planar movement of the first plank relative to the molding;

extruding the molding body;

providing a decorative laminate; and

securing the decorative laminate to the molding body.

16. The method according to claim 15, wherein the stem is a central stem and bisects the base and the surfacing body to define the first recess and an opposed second recess for receiving an edge of a second plank in a manner permitting planar movement of the first plank relative to the second plank.

17. The method according to claim 15, wherein the molding body is aluminum.

18. The method according to claim 17, further including the step of anodizing the molding body.

19. The method according to claim 15, wherein the decorative laminate is high pressure decorative laminate.
20. The method according to claim 15, wherein the surfacing body includes a longitudinally extending central recess shaped and dimensioned for receiving the decorative laminate.
21. The method according to claim 20, wherein the surfacing body includes longitudinally extending first and second lateral edges defining edges of the central recess, and wherein the first and second lateral edges are distinctly colored from the decorative laminate.
22. The method according to claim 15, wherein the surfacing body includes longitudinally extending first and second lateral edges defining edges of the central recess, and wherein the first and second lateral edges respectively include side walls having a depth substantially equivalent to the depth of the decorative laminate such that an upper surface of the molding is substantially smooth as it extends from the first lateral edge, over the decorative laminate and to the second lateral edge.
23. The method according to claim 15, wherein the central recess includes a textured bonding surface to which the decorative laminate is secured.
24. The method according to claim 15, wherein the molding including means for joining edges of flooring planks in an unrestricted manner.

25. The method according to claims 15, wherein the molding further includes a cover member extending from the surfacing body in a direction away from a second side of the stem.

26. The method according to claim 15, wherein the molding further includes a transition platform extending from a second side of the stem.

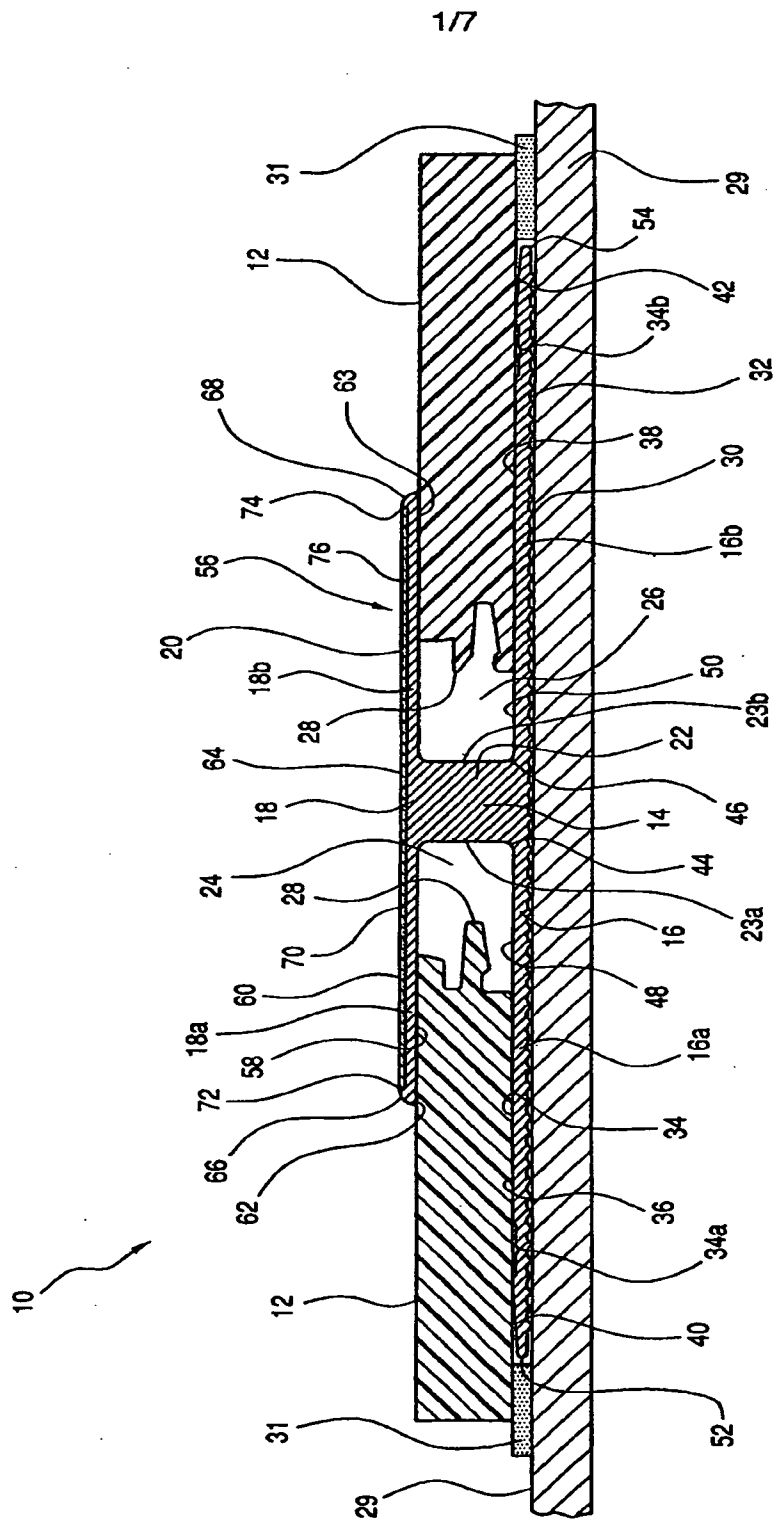


FIG. 1

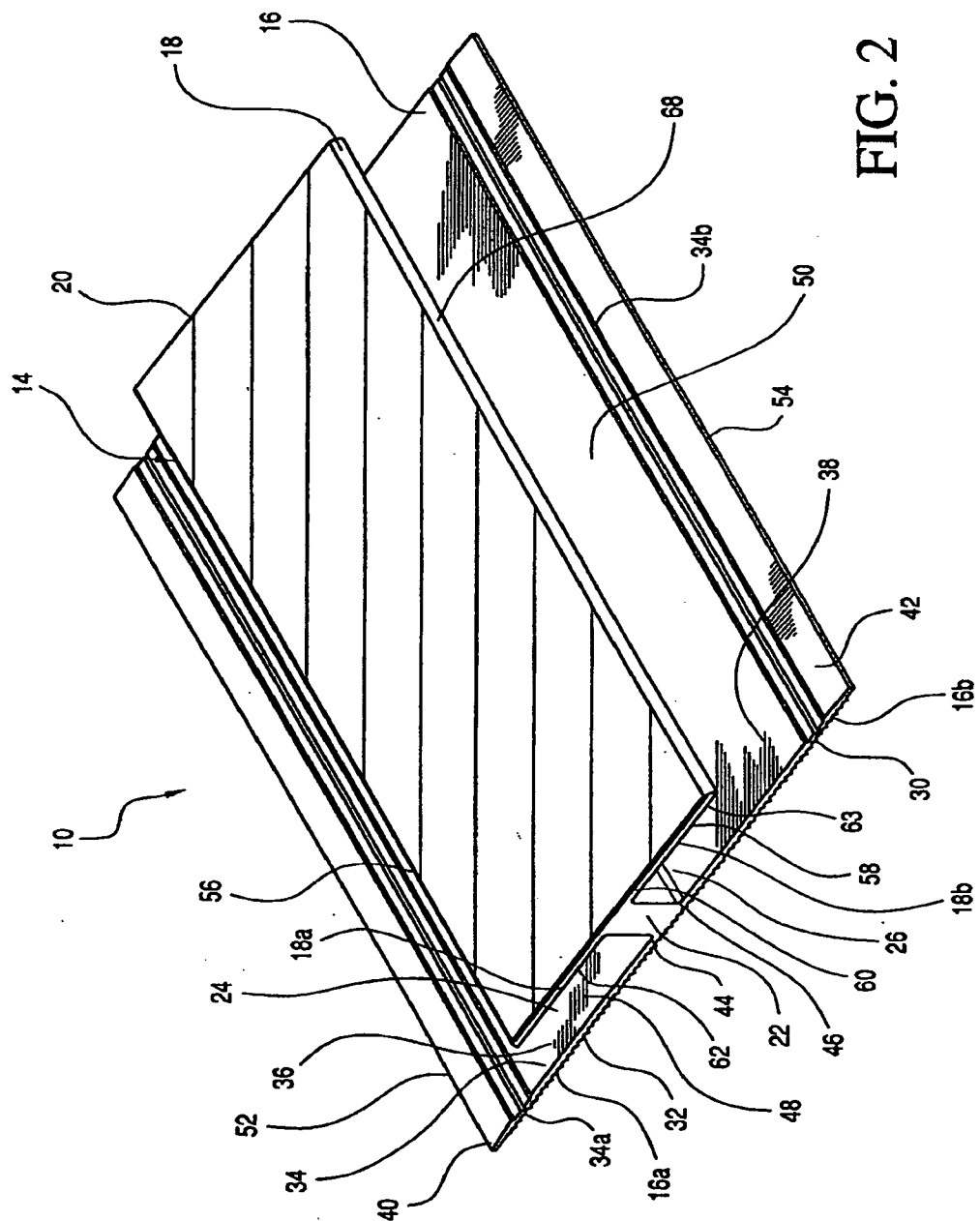
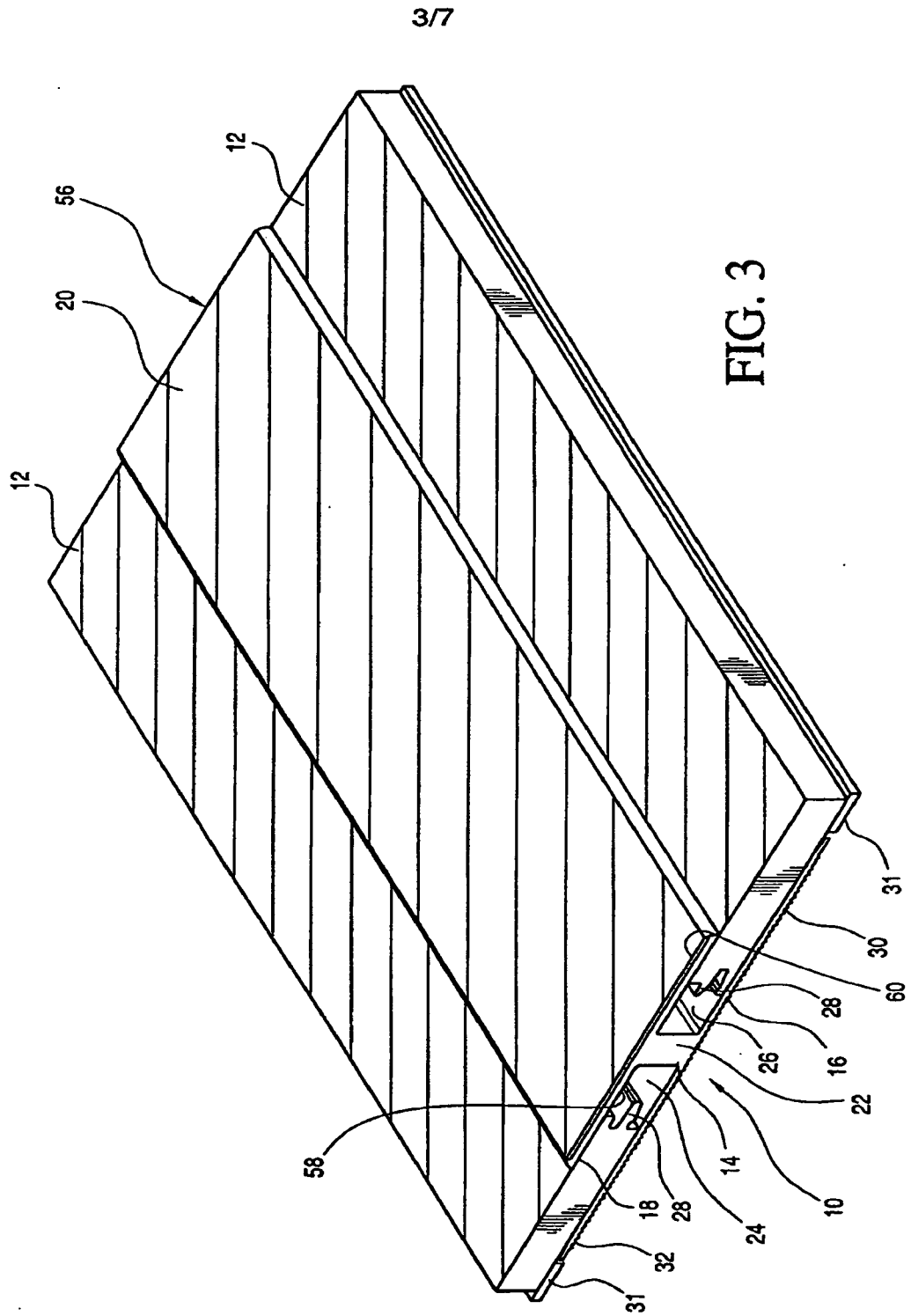


FIG. 2



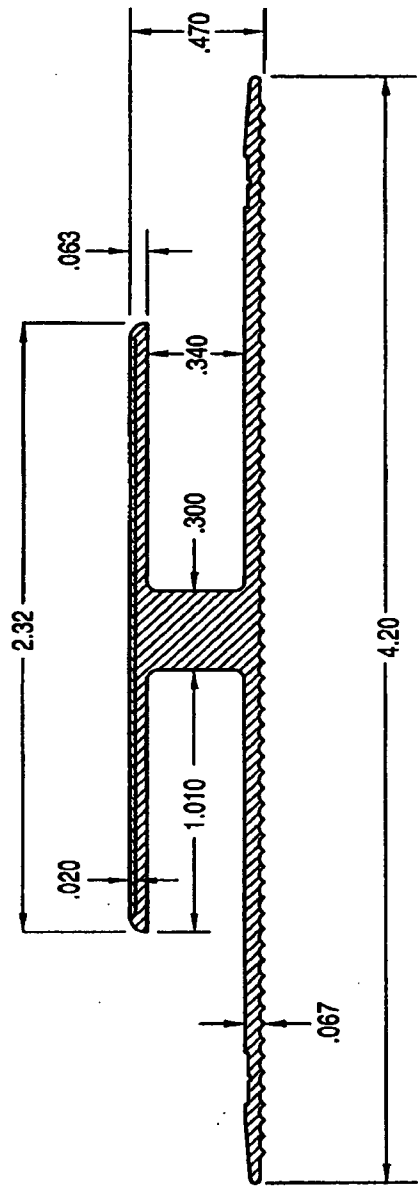


FIG. 4

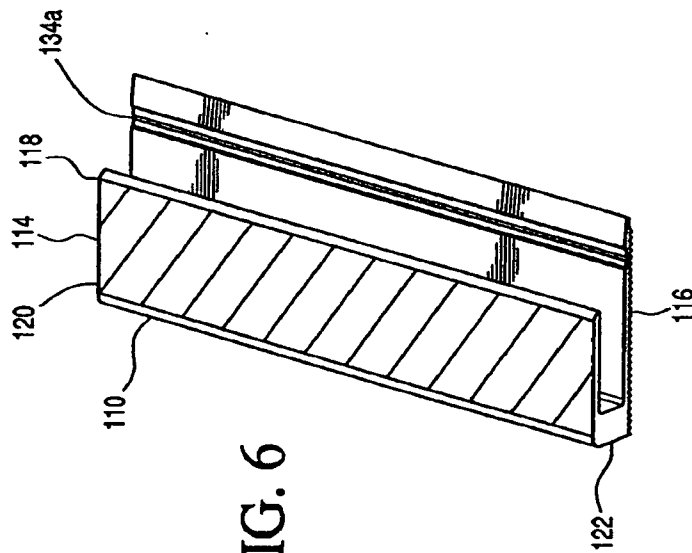
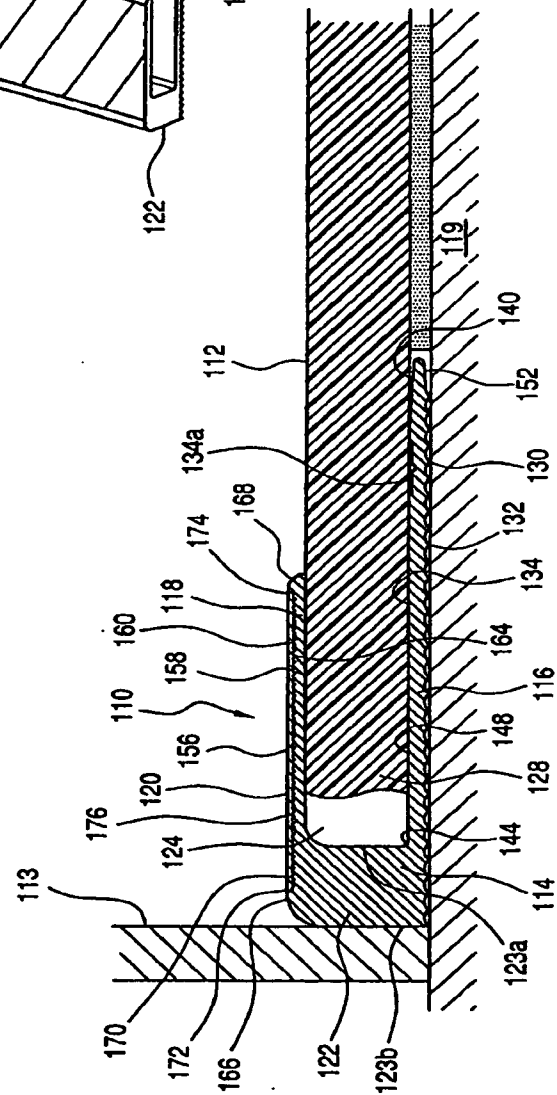


FIG. 6



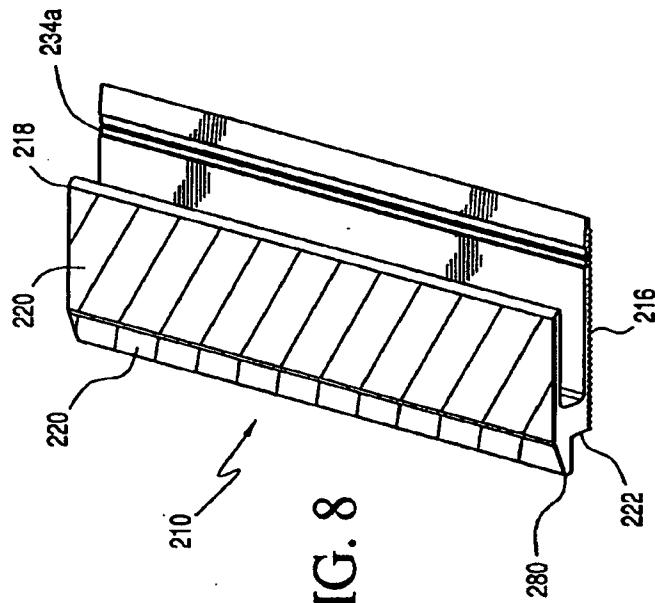
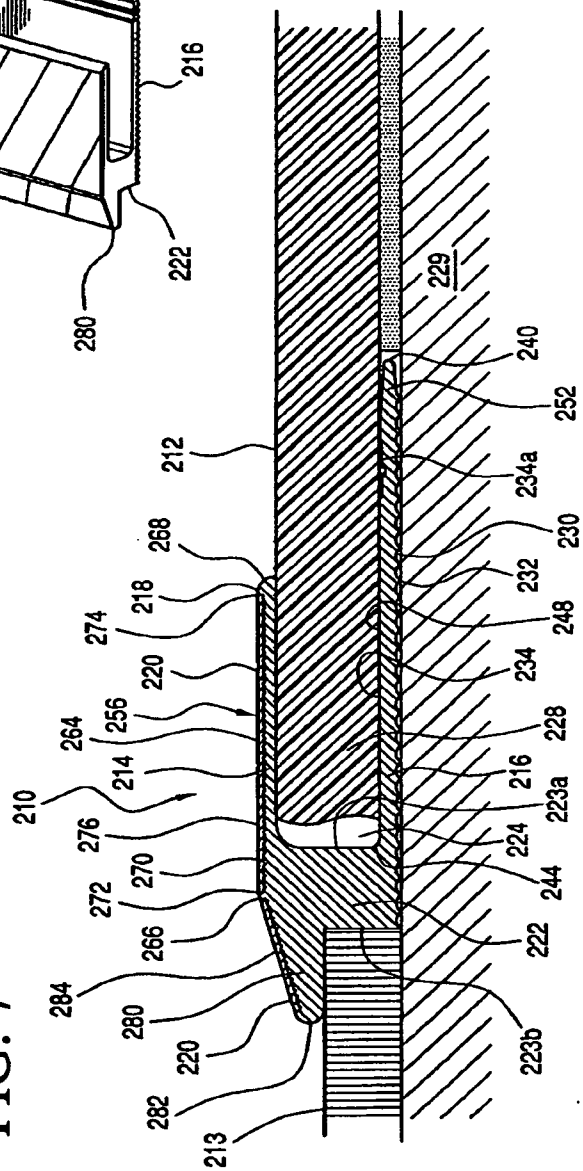


FIG. 8

FIG. 7



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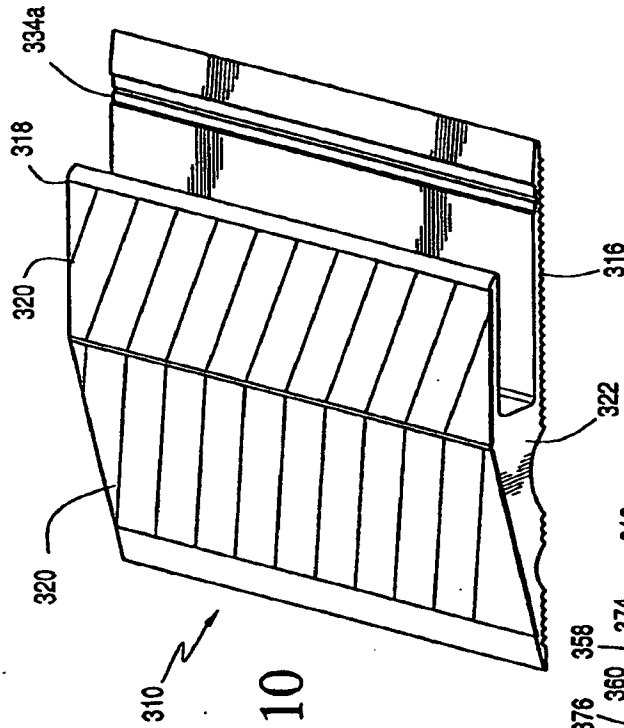
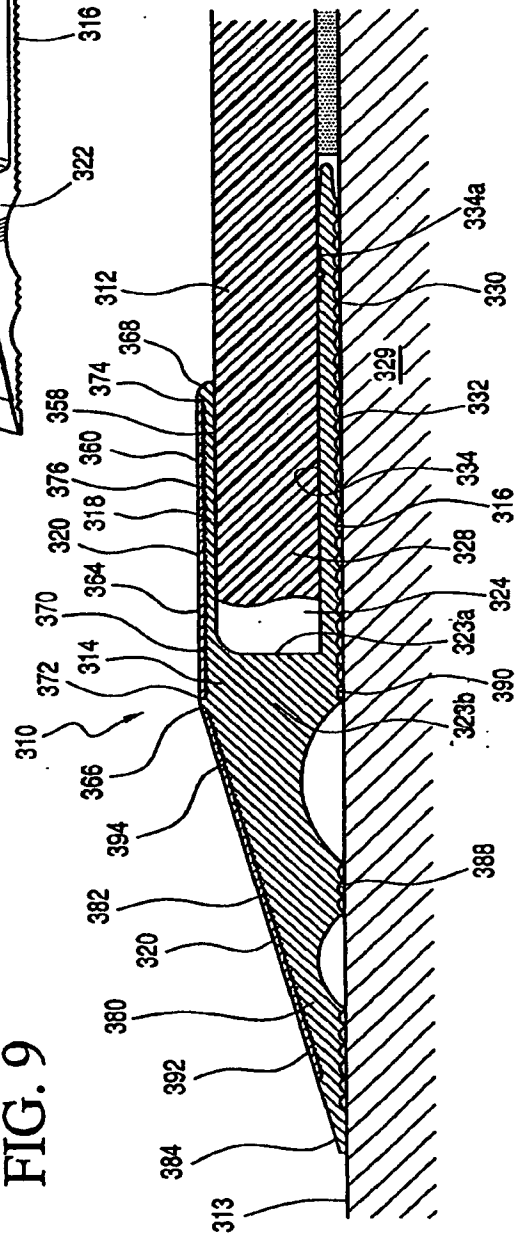


FIG. 10

FIG. 9



INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/010127

A. CLASSIFICATION OF SUBJECT MATTER
INV. E04F19/06 B32B1/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E04F B32B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 772 887 A (ROBERT RENKER KELLER) 17 April 1957 (1957-04-17) page 1, line 23 - line 43 page 1, line 69 - page 2, line 21 page 2, line 55 - line 85 page 3, line 68 - line 131 page 4, line 2 - line 11 claims 1,15-17	1-26
X	EP 0 856 620 A (PREMARK RWP HOLDINGS INC [US]) 5 August 1998 (1998-08-05) page 2, column 1, line 15 - line 36 page 2, column 2, line 17 - page 3, column 3, line 2 claim 1	1-26

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

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Date of the actual completion of the international search

4 October 2007

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/010127

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	US 2005/249923 A1 (REICHWEIN DAVID P [US] ET AL) 10 November 2005 (2005-11-10) paragraphs [0001], [0023] claim 1 -----	1-26

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/010127

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