Abstract of the Disclosure

The invention relates to railing assemblies, railing assembly components, methods of assembling railings, and/or apparatus used to assist in assembling railings.
RAILING ASSEMBLIES AND RELATED METHODS AND APPARATUS

Detailed Description of the Invention

DESCRIPTION OF THE INVENTION

[0001] Field of the invention

[0002] The invention relates to railing assemblies, railing assembly components, methods of assembling railings, and/or apparatus used to assist in assembling railings.

[0003] Background of the invention

[0004] Decks and porches typically include a frame, a main surface, and a railing assembly composed of a variety of railing components. The railing assembly may include mounting posts either affixed to the main surface or the frame or secured in a hole in the ground. The railing assembly may also include railings running horizontally and/or diagonally between the mounting posts at any vertical level of the post. The railings may be affixed to the top and/or side portion of the mounting posts, and may be affixed either directly to the mounting post or to the mounting post via a mounting bracket. Balusters and/or spindles may run substantially vertically between the railings and may be affixed directly to the railings.

[0005] There are problems, however, associated with prior known methods and apparatus for assembling railings. For example, proper and consistent spacing and alignment of the various components of the railing assembly is preferable. For example, if the spacing or alignment of the railings is inconsistent, it may be difficult to properly align the railing components. One method of spacing and aligning relies upon manually measuring the desired distances and determining the desired alignments by sight. The alignment and spacing of the railing assembly components is generally imprecise, and often takes a substantial time. Moreover, manual measuring requires training the work crew, which can be costly and time consuming, especially when work crews often have high and rapid turnover rates. Accordingly, an improved method and/or apparatus is desired.

SUMMARY OF THE INVENTION

[0006] An embodiment of the invention may include a railing assembly. The railing assembly may include a railing post, a railing affixed to the railing post, and a railing part configured to be placed between the railing post and the railing. The railing part may be configured to improve an aesthetic appearance of the railing assembly.

[0007] In various embodiments, the invention may include one or more of the following aspects: a top portion of the railing part may be configured to coincide with a top surface of the railing; a side portion of the railing part may be configured to coincide with a side surface of the railing; an outer portion of the railing part may be configured to coincide with an exterior surface of the railing visible to the user; the railing part may substantially fill a gap between the railing and railing post; the railing part may include polyvinyl chloride; at least a portion of the railing part may be deformable; a mounting bracket may be connected to the railing and the railing part; the railing part may be configured to be disposed around at least a portion of a mounting bracket; the railing part may have a substantially U-shaped configuration; a top portion of the railing part may have a greater thickness than another portion of the railing part; the railing part may be substantially disposed in a plane that is perpendicular to a longitudinal axis of the railing; the railing part may be disposed in a plane that is not perpendicular to a longitudinal axis of the railing; a portion of railing part may be configured to extend at an angle relative to another portion of the railing part; and the railing part may be configured to resist being removed from between the railing and the railing post.

[0008] Another embodiment of the invention may include a railing assembly. The railing assembly may include a railing post, a railing affixed to the railing post, and a railing part connected to the railing. The railing part may be configured to accommodate at least one of a baluster and a panel.

[0009] In various embodiments, the invention may include one or more of the following aspects: the railing part may be configured to grip the railing; the railing part may be configured to form a snap-fit with the railing; one of the railing parts and the railing may include two tongues and another of the railing part and the railing may include two grooves; the two tongues may be configured to be placed in the two grooves; the two tongues may be configured to grip the two grooves; the railing part may be configured to form a snap fit with the at least one of the baluster and the panel; the railing part may be configured to accommodate at least one of the baluster and the panel; and at least a portion of the panel may be substantially transparent.

[0010] A further embodiment of the invention includes a method for assembling a railing assembly. The method may include providing a railing post, a railing, and a railing part, connecting the railing to the railing post, and placing a railing part between the railing post and the railing. The railing part may be configured to improve an aesthetic appearance of the railing assembly.

[0011] In various embodiments, the invention may include one or more of the following aspects: aligning a top portion of the railing part with a top surface of the railing; aligning a side portion of the railing part with a side surface of the railing; aligning an outer portion of the railing part with an exterior surface of the railing; deforming at least a portion of the railing part; providing a mounting bracket; connecting the mounting bracket to the railing post; connecting the railing to the mounting bracket; placing the railing part at least partially around the mounting bracket; placing the railing part in a plane that is perpendicular to a longitudinal axis of the railing; placing the railing part in a plane that is not perpendicular to a longitudinal axis of the railing; and the railing part may be configured to resist being removed from between the railing and the railing post.

[0012] Yet another embodiment of the invention may include a method for assembling a railing assembly. The method may include providing a railing post, a railing, and a railing part, connecting the railing to the railing post, connecting a railing part to the railing, and connecting at least one of a baluster and a panel to the railing part.

[0013] In various embodiments, the invention may include one or more of the following aspects: gripping the railing via the railing part; snap-fitting the railing part to the railing;
placing two tongues on one of the railing part and the railing
into two grooves of another of the railing part and the railing
includes two tongues; gripping the two grooves via the two
tongues; snap-fitting at least one of the baluster and the panel
to the railing part; adjusting an angle of the at least one of
the baluster and the panel relative to the railing part; and at
least a portion of the panel may be substantially transparent.
[0014] A yet further embodiment of the invention may
include a railing part for a railing assembly. The railing
assembly may include a railing post and a railing configured
to be affixed to the railing post. The railing part may be
configured to be placed between the railing post and the
railing. The railing part may be configured to improve an
aesthetic appearance of the railing assembly.
[0015] In various embodiments, the invention may include
one or more of the following aspects: a top portion of the
railing part may be configured to coincide with a top surface
of the railing; a side portion of the railing part may be
configured to coincide with a side surface of the railing; an
outer portion the railing part may be configured to coincide
with an exterior surface of the railing visible to the user; the
railing part may substantially fill a gap between the railing
and railing post; the railing part may include polystyrene
chloride; at least a portion of the railing part may be
deformable; the railing assembly may further comprise a
mounting bracket connected to the railing and the railing
post; the railing part may be configured to be disposed
around at least a portion of a mounting bracket; the railing
part may have a substantially U-shaped configuration; a top
portion of the railing part may have a greater thickness than
another portion of the railing part; the railing part may be
configured to be substantially disposed in a plane that is
perpendicular to a longitudinal axis of the railing; the railing
part may be configured to be disposed in a plane that is not
perpendicular to a longitudinal axis of the railing; a portion
of railing part may be configured to extend at an angle
relative to another portion of the railing part; and the railing
part may be configured to resist being removed from
between the railing and the railing post.
[0016] Still another embodiment of the invention may
include a railing part for a railing assembly. The railing
assembly may include a railing post and a railing configured
to be affixed to the railing post. The railing part may be
configured to be connected to the railing. The railing part
may be configured to accommodate at least one of a baluster
and a panel.
[0017] In various embodiments, the invention may include
one or more of the following aspects: the railing part may be
configured to grip the railing; the railing part may be
configured to form a snap-fit with the railing; one of the
railing part and the railing may include two tongues and
another of the railing part and the railing may include two
grooves; the two tongues may be configured to be placed in
the two grooves; the two tongues may be configured to grip
the two grooves; the railing part may be configured to form
a snap fit with the at least one of the baluster and the panel;
the railing part may be configured to accommodate the at
least one of the baluster and the panel at a plurality of angles;
and at least a portion of the panel may be substantially
transparent.
[0018] Additional objects and advantages of the invention
will be set forth in part in the description which follows, and
in part will be obvious from the description, or may be
learned by practice of the invention. The objects and advan
tages of the invention will be realized and attained by means
of the elements and combinations particularly pointed out in
the appended claims.
[0019] It is to be understood that both the foregoing
general description and the following detailed description
are exemplary and explanatory only and are not restrictive
of the invention, as claimed.
[0020] The accompanying drawings, which are incorpo
rated in and constitute a part of this specification, illustrate
one (several) embodiment(s) of the invention and together
with the description, serve to explain the principles of the
invention.

BRIEF DESCRIPTION OF THE DRAWINGS
[0021] Fig. 1 is a perspective view of an railing assembly
according to an exemplary embodiment of the invention.
[0022] Fig. 2A is a perspective view of a post sleeve
according to an exemplary embodiment of the invention.
[0023] Fig. 2B is a cross-sectional view of the post sleeve
of Fig. 2A along line II-II.
[0024] Fig. 3 is a perspective view of a post skirt accord
ing to an exemplary embodiment of the invention.
[0025] Figs. 4A and 4B are schematic views of gaskets
according to an exemplary embodiment of the invention.
[0026] Figs. 4C and 4D are side schematic views of the
alignment parts of Figs. 4A and 4B, respectively.
[0027] Fig. 5A is a perspective view of an alignment part
according to an exemplary embodiment of the invention.
[0028] Fig. 5B is a cross-sectional view of the alignment
part of Fig. 5A along line V-V.
[0029] Fig. 6A is a perspective view of an upper railing
according to an exemplary embodiment of the invention.
[0030] Fig. 6B is a cross-sectional view of the upper
railing of Fig. 6A along line VI-VI.
[0031] Fig. 7A is a perspective view of a lower railing
according to an exemplary embodiment of the invention.
[0032] Fig. 7B is a cross-sectional view of the lower
railing of Fig. 7A along line VII-VII.
[0033] Figs. 8A, 8B and 8C are various schematic views
of railing assembly tools according to various exemplary
embodiments of the invention.
[0034] Fig. 9 is a perspective view of a railing assembly
according to an exemplary embodiment of the invention.
[0035] Fig. 10A is a schematic view of a panel holder
according to an exemplary embodiment of the invention.
[0036] Figs. 10B and 10C are schematic views of the
panel holder of Fig. 10A including a panel.

DESCRIPTION OF THE EMBODIMENTS
[0037] Reference will now be made in detail to embodi
ment exemplary embodiments of the invention, examples of
which are illustrated in the accompanying drawings. Wher-
ever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts. [0038] Embodiments of the invention relate to methods and/or apparatuses for installing a deck or porch having a railing assembly with various railing components. Any portion of the deck or porch, including the railing components, may be made out of any suitable material, for example, fiberglass, wood, plastic, wood-plastic composites, and/or any other suitable materials, and may have any suitable shape and/or dimensions. The deck or porch portion may be manufactured by any known deck, porch, or similar structural material manufacturer including, without limitations: Trex, AERI, Louisiana Pacific, Tamko Roofing Products, Epoch Composite Products, Certainteed, Crane Plastics, Fiber Composites, Composite Research Tech., CPI Plastics, Kadant Composites, Mastermark Plastics, Universal Forest Products, Composite Building Products, Correct Building Products, U.S. Plastic Lumber, Timbertech, Andersen Corporation, and/or any other manufacturer of suitable materials. The subject matter disclosed in U.S. Patent Nos. 5,746,958, 5,851,469, 6,527,532, and co-pending U.S. Patent Application Nos. 10/898,555, 10/862,448, and/or 11/094,795, which relate to the manufacture of wood-plastic composites that may be used in and with the railing components set forth herein, are incorporated herein by reference, as if fully set forth herein.

[0039] Fig. 1 shows an exemplary embodiment of a railing assembly 100. Railing assembly 100 may include one or more of each of a post 101, a post sleeve 200, a post skirt 300, a post cap 400, 401, an alignment part 500, an upper railing 600, a lower railing 700, a baluster 103, a mounting bracket 104, a deck frame 105, and a screw 106.

[0040] Post 101 may be made out of any material suitable for decking and/or railing assemblies, and may have any suitable shape, dimensions, and/or configuration. For example, post 101 may be made out of wood having a substantially square cross-sectional profile with one or more sides that measure about 3.5 inches by about 3.5 inches, and may have a height equal to a height of post sleeve 200 (e.g., about 39 inches) plus a suitable amount to attach post 101 to deck frame 105. Post 101 may be made out of any suitable material, for example, a metal such as steel. Post 101 may be substantially free of defects, and may confirm to one or more standard as reflected by the markings: UC4A, C5, No. 2, ACQ, KDAT, KD19, and/or KDBT. The markings may correspond to designations of the American Softwood Lumber Standard (PS 20-94) as determined by the American Lumber Standard Committee, and listed, for example, in the Forest Products Society’s 1999 Wood Handbook. The markings may correspond to one or more of Register of Trademark, Grade of Lumber, Moisture Content, Mill identification number, and heat treatment for pest pasteurization. Examples of these any other markings may be found at http://www.spib.org/grademarks.shtml#lumberservices.

[0041] Baluster 103 may be made out of any material suitable for decking and/or railing assemblies, and may have any suitable shape, dimensions, and/or configuration. For example, baluster 103 may be made out of FIBREX material licensed by ANDERSEN CORPORATION and/or rigid PVC cap stock, may have a substantially square cross-section, and a height of about 30.375 inches. In another example, baluster 103 may be made out one or more of wood(s), polymer(s), and glass(es).

[0042] Mounting bracket 104 may be any mounting bracket suitable for use in decking and/or railing assemblies. An example of a suitable mounting bracket 104 is disclosed in U.S. Patent Application No. 10/814,586, entitled “Method and Apparatuses for Assembling Railings,” filed April 1, 2004, the entirety of which is incorporated herein by reference.

[0043] Deck frame 105 may be any suitable deck frame of a type known in the art.

[0044] Any fastener 106 (e.g., a screw, a rivet, a weld, an adhesive, and/or any other fastener 106 known in the art) may be used to attach any of the various portions of railing assembly 100 to other portions of railing assembly 100. For example, one or more #8-2.5 inch drive screws may be used to attach mounting bracket 104 to post sleeve 200. In another example, one or more #12-1.5 inch self-drilling screws may be used to attach upper railing 600 and/or lower railing 700 to mounting bracket 104 and/or post sleeve 200. In a further example, one or more #8-1.625 inch bugle head gray screws may be used to attach post skirt 300 to post sleeve 200, for example, at end 204, 205.

[0045] Figs. 2A-2B show an exemplary embodiment of a post sleeve 200. Post sleeve 200 may have any suitable shape and/or configuration. For example, post sleeve 200 may have a substantially elongate shape with a substantially square cross-section (e.g., 5.5 inches by 5.5 inches). Post sleeve 200 may include an outer portion 203 and ends 204, 205.

[0046] Post sleeve 200 may include one or more inner portions 201 (e.g., inner walls) connected to outer portion 203 (e.g., outer walls). For example, inner portion 201 and outer portion 203 may be integrally connected and/or manufactured. Ribs 206 may be disposed between inner portion 201 and outer portion 203, and may provide structural support to inner portion 201. A combination of outer portion 203, inner portion 201, and ribs 206 may define one or more hollow spaces 209, and may be configured to assist in retaining screws on post sleeve 200. For example, a screw placed through only outer portion 203 may move relative to and/or fall out of outer portion 203 due to repeated stressing, fatigue, and/or movement of the screw about outer portion 203. A screw placed through both outer portion 203 and inner portion 201 (e.g., past inner surface 208) may be more likely to stay securely lodged in post sleeve 200 despite outside stresses and/or fatigue, and may inhibit movement of the screw about outer portion 203.

[0047] An inner surface 208 of post sleeve 200 may be configured to accommodate a surface of a post, for example, post 101. For example, inner surfaces 208 of one or more hollow portions 201 may be configured to coordinate and/or accommodate post 101 therethrough (e.g., through a space defined by inner surfaces 208) such that each inner surface 208 contacts an outer surface of post 101. In some embodiments, inner surfaces 208 may form a slight press-fit with the outer surfaces of post 101, with ribs 206 providing support to assist in preventing inner portion 201 from collapsing due to pressures on inner surface 208 in the direction of outer surface 203, for example, from post 101. For example, for a six inch by six inch post sleeve 200, inner portion 201 may extend about one inch into post sleeve 200 such that inner surfaces 208 may accommodate a four inch by four inch post 101 therebetween. Post sleeve 200, inner
portions 201, and post 101 may have any combination of dimensions such that post sleeve 200 is disposed over any portion of and/or substantially covers post 101.

[0048] Post sleeve 200 may include a mounting portion 202. For example, mounting portion 202 may be disposed in one or more corners of post sleeve 200, and may be configured to accommodate and/or retain a screw therethrough, for example, a screw introduced into mounting portion 202 from an end 204, 205 of post sleeve 200. Mounting portion 202 may be substantially solid and/or include a hole 202a extending at least partially along the length of post sleeve 200. Hole 202a may be configured to accommodate, receive, and/or retain the screw therethrough, for example, by having a cross-sectional area less than a cross-sectional area of the screw. Mounting portion 202 may be configured to assist in placing and/or retaining a post skirt on post sleeve 200, for example, post skirt 300.

[0049] Post sleeve 200 may be made out of FIBREX material licensed by ANDERSEN CORPORATION and/or rigid PVC cap stock. Alternatively, post sleeve 200 may be made out of any suitable material, for example, any suitable combination of fibers, wood fibers, and polymers. Post sleeve 200 may be co-extruded with some or all of its features, for example, inner portion 201, screw (mount 202), outer portion 203, and/or ribs 206). Post sleeve 200 may be manufactured using any suitable method.

[0050] Fig. 3 shows an exemplary embodiment of a post skirt 300. Post skirt 300 may have any suitable shape and/or configuration. For example, post skirt 300 may have a substantially square shape that corresponds to a cross-sectional shape of post sleeve 200. Post skirt 300 may include a main body 301 having a maximum cross-sectional area at one end (e.g., about six inches by six inches at its bottom end) that tapers inward toward cap interface portion 302. Cap interface portion 302 may be configured to accommodate and/or retain post cap 102. For example, cap interface portion 302 may be configured such that an outer surface 302a of cap interface portion 302 is configured to form an interference fit and/or press-fit with an inner surface of post cap 102 (e.g., post cap 102 may be snapped onto cap interface portion 302).

[0051] Post skirt 300 may include one or more mounting portions 303. Mounting portion 303 may include a mounting hole 304. Mounting portion 303 may be configured to attached post skirt 300 to another assembly portion, for example, a post sleeve 300. Mounting hole 304 may be substantially aligned with hole 202a of mounting portion 202 such that a screw placed through mounting hole 304 may also be screwed into hole 202a of mounting portion 202. Mounting portion 303 may be configured to be selectively removed from post skirt 300, for example, by including a thinner portion at its interface with the rest of post skirt 300 such that mounting portion 303 may be easily snapped off of post skirt 300 without substantially altering the outside aesthetic appearance of post skirt 300. When mounting portion 303 is removed from post skirt 303, any remnants may be of the amount and/or configured so as to not impede the placement of post skirt 303 on other objects, for example, around post 101.

[0052] Figs. 4A-4B show exemplary embodiments of an intermediate portion, for example, gaskets 400, 401. Gaskets 400, 401 may be made of any suitable material, for example, a compressible material such as rubber, caulking, and soft polymers and/or a rigid materials such as rigid polyvinyl chloride (PVC). At least an outer edge 412, 413 of gaskets 400, 401 may be substantially the same color as other portions of railing assembly 100, for example, post 101, post sleeve 200, and/or railings 600, 700. Gaskets 400, 401 may be configured to be placed between a railing 600, 700, a post sleeve 200, and/or a post 101. Gasket 400 may be configured to be used with lower railing 700, and gasket 401 may be configured to be used with upper railing 600. At least a portion of gaskets 400, 401 may have an outer shape substantially similar to an outer cross-section of railing 600, 700 and/or configured to be placed around at least a portion of a mounting bracket. For example, gaskets 400, 401 may have a substantially horseshoe-shaped and/or U-shaped configuration.

[0053] At least a portion of gaskets 400, 401 may have a shape, outer edge, and/or outer dimensions that substantially correspond to a cross-sectional shape, outer edge, and/or outer dimensions of an end of railing 600, 700, taking into account the angle of cut of the end of railing 600, 700. For example, railings 600, 700 may be configured so as to be placed at a horizontal angle (e.g., a diagonal railing) and/or a vertical angle (e.g., for stairs) between post sleeves 200. In such a configuration, railings 600, 700 may have end cut at an angle such that the ends of railings 600, 700 will be substantially flush with outer portion 203 of post sleeve 200 (e.g., the ends of railings 600, 700 may not be disposed in plane perpendicular to a longitudinal axis of railings 600, 700). For these cases, at least a portion gaskets 400, 401 may have a corresponding shape, outer edge, and/or outer dimensions that correspond to the angle cuts of the ends of railings 600, 700. Thus, gaskets 400, 401 corresponding to railings 600, 700 having an angle cut (e.g., 22.5 degrees, 37.5 degrees, 45 degrees, or any other angle in any horizontal and/or vertical between about 0 degrees and about 90 degrees) may have a surface area greater (e.g., longer) than gaskets 400, 401 corresponding to railings 600, 700 having a substantially straight cut, for example, when railings 600, 700 are to be placed substantially perpendicular to post sleeves 200. Each gasket 400, 401 may be specifically manufactured to correspond to a specific angular cut of railing 600, 700. Alternatively, gasket 400, 401 may have an outer edge that has dimensions different from an end cut of railing 600, 700. For example, differing portions of gasket 400, 401 may be wider and/or narrower than the outer dimensions of the corresponding portions of the end of railing 600, 700.

[0054] Gaskets 400, 401 may include side portions 402, 403 and a top portion 404, 405 having substantially the same thickness. Side portions 402, 403 and/or top portion 404, 405 may include a thicker portion 406, 407. Thicker portion 406, 407 may be configured, for example, to fill in any gap between post sleeve 200 and an end portion of railings 600, 700 so as to disguise the presence of such a gap to a casual observer.

[0055] Side portions 402, 403 and/or top portion 404, 405 may include fingers 408, 409. Fingers 408, 409 may be configured to be cut out of portions 410, 411 of side portions 402, 403, and/or top portion 404, 405, and may be configured to extend at an angle relative to the plane that generally includes the rest of side portions 402, 403, and/or top portion 404, 405. Fingers 408, 409 may be manufactured using any
suitable method. For example, fingers 408, 409 may be cut from gaskets 400, 401 and may be bent relative to other portions of gaskets 400, 401 to the desired angle, for example, between about 30° and 45°, or any other angle which may allow gaskets 400, 401 to be easily placed between railings 600, 700 and post sleeve 200, but substantially more difficult to remove without removing railings 600, 700 from post sleeve 200. Fingers 408, 409 and/or the rest of gaskets 400, 401 may be configured to retain this angle, for example, in an unloaded configuration. Fingers 408, 409 may be configured to assist in retaining gaskets 400, 401 between railings 600, 700 and post sleeve 200, for example, by portions of fingers 408, 409 placing pressure on at least one of outer portion 203 of post sleeve 200 and/or ends of railings 600, 700. Gaskets 400, 401 (e.g., due to fingers 408, 409) may be configured to be easily placed between railings 600, 700 and post sleeve 200, but substantially more difficult to remove without removing railings 600, 700 from post sleeve 200.

Gaskets 400, 401 may be configured to allow play between railings 600, 700 and post sleeve 200. For example, without the use of gaskets 400, 401, railings 600, 700 must be cut more precisely such that the length of railings 600, 700 substantially corresponds with the distance between post sleeves 200. If railings 600, 700 are cut too long, railings 600, 700 will not fit between post sleeves 200, and will thus need to be recut. If railings 600, 700 are cut too short, an undesirable gap may exist between the ends of railings 600, 700 and outer portion 203 of post sleeve 200, which may be aesthetically displeasing. By using gaskets 400, 401, especially if the outer contour of gaskets 400, 401 correspond to the cross section of the end of railings, 600, 700, railings 600, 700 may be cut to a length such that they will fit between post sleeves 200, and the noticeability of any gap may be greatly reduced. Moreover, gaskets 400, 401 may ensure a more snug fit of railings 600, 700 between post sleeves 200, and/or possibly reduce the amount of potentially corrosive materials (e.g., water and/or dirt) from reaching mounting bracket 104 and/or screws used to mount mounting brackets 104 and/or railings 600, 700 to post sleeve 200.

Figs. 6A-6B and 7A-7B depict exemplary embodiments of railings 600, 700. Railing 600 may be an upper railing and railing 700 may be a lower railing. Railings 600, 700 may be made out of FIBREX material licensed by ANDERSEN CORPORATION and/or rigid PVC cap stock. Railings 600, 700 may be made out of any suitable material, for example, any suitable combination of fibers, wood fibers, and/or polymers. Railings 600, 700 may be co-extruded with some or all of its features (e.g., upper portion 601, lower side portions 602, and/or double wall 603 for upper railing 600). Railings 600, 700 may be manufactured using any suitable method, for example, screw extrusion. Railings 600, 700 may have any suitable cross-sectional shape, for example, any shape of any upper or lower railing for a dock, stair, or other similar structure.

Upper railing 600 may include an upper portion 601, lower side portions 602, and/or a double wall 603. Upper portion 601 and/or a portion of double wall 603 may define a hollow space therein, and an upper surface 601a of upper portion 601 may include a crown, for example, to assist in preventing water from pooling and/or remaining on upper surface 601a.

Double wall 603 may be configured to assist in accommodating and/or retaining a screw therethrough, for example, in a manner similar to how outer portion 203 and inner portion 201 assist in accommodating and/or retaining a screw therethrough. The screw may be used to attach mounting bracket 104 to railings 600, 700. Double wall 603 may additionally include a protrusion 604 also configured to assist in accommodating and/or retaining a screw therethrough, for example, by providing additional material to assist in retaining the screw and preventing its movement relative to other portions of railing 600, 700. In some embodiments, double wall 603 may have a substantially constant thickness and not have protrusion 604.

Lower side portions 602 may include a feature interface portion 605 and an aligning portion 606. Feature interface portion 605 may be disposed on upper railing 600 such that feature interface portion 605 is not substantially visible by a casual observer (e.g., from above and/or the side of upper railing 600) when upper railing 600 is installed as a part of a railing assembly. Feature interface portion 605 may be configured to accommodate and/or retain other portions of railing assembly 100, for example, an alignment part 500 and/or a panel holder 1000. For example, feature interface portion 605 may include protrusions 607, 609 and a groove 610 therebetweenth. Protrusions 607, 609 and/or groove 610 may be configured to cooperate so as to accommodate and/or retain an interface portion of a feature that may, for example, include its own protrusions and grooves (e.g., interface portions 1003, an extension portion 1003a, a gripping portion 1003b, and/or end portions 1004 of panel holder 1000). For example, gripping portion 1003b may be placed in groove 610, while protrusions 607 may be placed in a groove between interface portion 1003 and connector 1012 of panel holder 1000. Because the feature may include two protrusions that are placed in grooves 610 of both lower side portions 602 (e.g., such as gripping portions 1003b of panel holder 1000), the protrusions of the features may grip protrusions 607 and/or grooves 610 so as to form a press-fit, an interference fit, and/or a snap-fit. Protrusions 607 may further include a secondary protrusion 611 to assist in retaining the protrusions of the feature in grooves 610, for example, by substantially preventing the fingers of the feature from move down and/or away from grooves 610 (e.g., as is shown in Fig. 10B with respect to gripping portions 1003b).

Aligning portion 606 may extend away from the main body of lower side portion 602 to which it is attached and/or generally inward toward double wall 603 and/or a center of upper railing 600. Aligning portion 606 may be thinner than other portions of upper railing 600. Aligning portions 606 may be configured to accommodate a baluster 103 therewith such that baluster 103 will be substantially centered in a direction running between corresponding points on aligning portions 606 (e.g., in a plane perpendicular to a longitudinal axis of railing 600, an example of which is shown as Fig. 6A). Accordingly, aligning portions 606 may help center one or more balusters 103 relative to upper railing 600.

Lower railing 700 may include side portions 702 and/or a double wall 703. Double wall 703 may be configured to assist in accommodating and/or retaining a screw therethrough, for example, in a manner similar to how outer portion 203 and inner portion 201 assist in accommodating
and/or retaining a screw therethrough. Such a screw may be used to attach mounting bracket 104 to railings 600, 700. Lower railing 700 may include one or more drainage holes extending through double wall 703, for example, to allow water disposed between side portions 702, double walls 703, and/or interface portions 705 to drain so as to assist in preventing molding and/or mildewing of lower railing 700 and other portions of railing assembly 100.

[0063] Each side portion 702 may define a hollow space. Side portions 702 may include a feature interface portion 705 and an aligning portion 706. Feature interface portion 705 may be disposed on lower railing 700 such that feature interface portion 705 is not substantially visible by a casual observer (e.g., from the side of lower railing 700) when lower railing 700 is installed as a part of railing assembly 100. Feature interface portion 705 may be configured to accommodate and/or retain other portions of the railing assembly, for example, an alignment part 500 and/or panel holder 1000. For example, feature interface portion 705 may include protrusions 707, 709 and a groove 710 therebetween. Protrusions 707, 709 and/or groove 710 may be configured to cooperate so as to accommodate and/or retain an interface portion of a feature that may, for example, include its own protrusions and grooves (e.g., interface portion 1003, extension portion 1003a, gripping portion 1003b, and/or end portions 1004 of panel holder 1000). For example, gripping portions 1003b may be placed in groove 710, while protrusions 707 may be placed in a groove between interface portion 1003 and connector 1012 of panel holder 1000. Because the feature may include two protrusions that are placed in grooves 710 of both side portions 702 (e.g., gripping portions 503b of alignment part 500), the protrusions of the features may grip protrusions 707 and/or grooves 710 so as to form a press-fit, an interference fit, and/or a snap-fit. Protrusions 707 may further include a secondary protrusion 711 to assist in retaining the protrusions of the feature in grooves 710, for example, by substantially preventing the fingers of the feature from moving down and/or away from grooves 710 (e.g., as shown in Fig. 10C with respect to gripping portions 1003b).

[0064] Aligning portion 706 may extend away from the main body of side portion 702 to which it is attached and/or generally inward toward double wall 703 and/or a center of lower railing 700. Aligning portion 706 may be thinner than other portions of lower railing 700. Aligning portions 706 may be configured to accommodate a baluster 103 therebetween such that baluster 103 will be substantially centered in a direction running between corresponding points on aligning portions 706 (e.g., in a plane perpendicular to a longitudinal axis of railing 700, an example of which is shown as Fig. 6B). Accordingly, aligning portions 706 may make it easier to align (e.g., center) one or more balusters 103 relative to lower railing 700.

[0065] A space 711 defined by side portions 702 and a bottom wall of double wall 703 may be configured to accommodate a railing support therein, for example, by press-fitting and/or interference fitting a railing support therein.

[0066] Figs. 5A and 5B show an exemplary embodiment of an item, for example, an alignment part 500 that may be used, for example, with railings 600, 700. Part 500 may include a main body 501 having a substantially elongate shape and may include a plurality of alignment portions 502 (e.g., feature accommodation portion and/or holes). Part 500 may be made out of FIBREX material licensed by ANDERSEN CORPORATION and/or rigid PVC cap stock. Part 500 may be made out of any suitable material, for example, any suitable combination of fibers, wood fibers, and/or polymers. Part 500 may be co-extruded, or alternatively, part 500 may be manufactured using any suitable method.

[0067] Alignment portions 502 may have any suitable shape, and may be disposed on main body 501 in any suitable configuration. For example, alignment portions 502 may be regularly spaced along a longitudinal direction of main body 501 such that they substantially correspond to desired locations of balusters 103 on an installed railing assembly 100. Alignment portions 502 may have a shape corresponding to a cross-sectional shape of baluster 103 to be placed through alignment portion 502, for example, a square. In some embodiments, alignment portions 502 may have a shape that is longer than the cross-sectional shape of baluster 103 in the longitudinal direction of main body 501. For example, if baluster 103 has a substantially square cross-sectional shape, then alignment portion 502 may have a substantially rectangular shape where the narrower sides of the rectangle have substantially the same or slightly longer dimensions than a side of the substantially square baluster 103. The longer side of the rectangle, alternatively, may be longer than a side of the substantially square baluster 103, for example, so that baluster 103 may be introduced into and/or retained in alignment portion 502 at a non-right angle relative to main body 501 (e.g., a longitudinal axis of main body 501 and/or a plane including main body 501).

[0068] Part 500 may include one or more interface portions 503 (e.g., railing attachment portion). Interface portions 503 may be configured to attach part 500 to another portion of the railing assembly, for example, features interface portions 605, 705 of railings 600, 700. Interface portions 503 may extend from a surface of main body 501. Interface portions 503 may include an extension portion 503a and a gripping portion 503b. Gripping portions 503b on opposing interface portions 503 may be generally directed toward each other. Gripping portions 503b may be configured to be disposed in grooves 610, 710 of railings 600, 700. Extension portions 503a may be configured to be in contact with protrusions 607, 707. A combination of the various aspects of interface portions 503 and features interface portions 605, 705 may be configured to form a press-fit, an interference fit, and/or a snap-fit, and may make it difficult to dislocate part 500 from railings 600, 700 via normal external forces for railing structures (e.g., wind, rain, people stepping on part 500, etc.)

[0069] Part 500 may include end portions 504. End portions 504 may extend in a direction generally away from main body 501, for example, in a direction substantially perpendicular to a plane including main body 501. End portions 504 may be configured to contact a portion of the railing assembly, for example, protrusions 609, 709 on railings 600, 700. End portions 504 and/or protrusions 609, 709 may be configured to prevent water, dirt, or other contaminants from entering railings 600, 700, for example, grooves 610, 710. End portions 504 may be configured to be flexible so as to allow interface portion 503 to be suitable placed relative to features interface portions 605, 705 of railings 600, 700 so as to securely attached part 500 to...
railings 600, 700. End portions 504 may enhance the aesthetic appearance of the combined tool and railings 600, 700, for example, by covering features interface portions 605, 705, flippers 606, 706, protrusions 607, 707, and/or grooves 610, 710.

[0070] Fig. 9 shows an exemplary embodiment of a panel molding assembly 900. Panel molding assembly 900 may include post sleeves 200, railings 600, 700, and/or panel holders 1000. Panel 901 may be any suitable panel used in railing or other assemblies, may have any suitable shape and/or configuration (e.g., may be solid or may have holes), and may be made out of any suitable material (e.g., fiberglass, glass, and/or plastic). Panel holders 1000 may be used instead of alignment part 700, and panel 901 may be used instead of balusters 105.

[0071] Fig. 10A shows an exemplary embodiment of an item, for example, a panel holder 1000. Figs. 10B and 10C show exemplary embodiments of panel holder 1000 installed on upper railing 600 and lower railing 700, respectively. Panel holder 1000 may include interface portions 1005 (e.g., a railing attachment portion), an extension portion 1003a, a gripping portion 1003b, and end portions 1004 that are substantially similar to interface portions 505, an extension portion 503a, a gripping portion 503b, and end portions 504 of alignment part 500, respectively.

[0072] Panel holder 1000 may be made out of rigid PVC cap stock. Panel holder 1000 may be made out of any suitable material, for example, any suitable combination of fibers, wood fibers, and/or polymers. Panel holder 1000 may be extruded. Panel holder 1000 may be manufactured using any suitable method.

[0073] Panel holder 1000 may include a holder assembly 1005 (e.g., a feature accommodation portion) configured (e.g., have a suitable shape, rigidity, and/or material composition) to accommodate and/or retain at least a portion of a side and/or end of panel 901. Holder assembly 1005 may include a retaining portion 1006 including an end portion 1011 and arms 1009 extending from end portion 1011. Ends of arms 1009 may include gripping portions 1010. Portions of holder assembly 1005 may have a thickness greater than the rest of panel holder 1000, for example, to provide more structural support for accommodating and/or retaining panel 901. Retaining portion 1006 may have a generally U-shaped configuration configured to be disposed around an end of panel 901. Gripping portion 1010 may be configured to contact opposing sides of panel 901 such that panel 901 is press-fit between gripping portions 1010 of arms 1009. Accordingly, any combination of end portion 1006, arms 1009, and gripping portions 101 may be configured to have sufficient rigidity so as to prevent, or at least impede, an end of panel 901 from inadvertently exiting retaining portion 1006 during normal use.

[0074] Retaining portion 1006 may be connected to other portions of panel holder 1000 via connectors 1012. Connectors 1012 may include a protrusion 1012 configured to assist in both retaining panel 901 in retaining portion 1006, and keep interface portions 1003 engaged with interface portions 605, 705 of railings 600, 700. For example, when panel 901 is placed in retaining portion 1006, panel 901 may exert outward pressure on gripping portions 1010 such that the force and/or pressure from the placement of panel 901 in holder assembly 1005 is transferred to protrusions 1013 via arms 1009 and connectors 1012. Thus, protrusions 1013 may exert pressure on protrusions 607, 707 on railings 600, 700, which may in turn exert pressure on extensions 1003a and gripping portions 1003b to form a tighter press-fit, interference-fit, and/or snap-fit between panel holder 1000 and railings 600, 700. Also or alternatively, gripping portions 1003b and/or protrusions 607, 707 may be manufactured and/or configured to exert inward pressure on protrusions 1013, which may exert inward pressure on gripping portions 1010 via arms 1009 and connectors 1012 so as to cause gripping portions 1010 to exert greater pressure on panel 901, further impeding panel 901 from becoming dislodged from retaining portion 1006.

[0075] Panel holder 1000 may include alignment portions 1007. Alignment portions 1007 may extend from other portions of panel holder 1000, and may be configured, for example, to cooperate with retaining portion 1006 so as to substantially align and/or center panel 901 relative to panel holder 1000 and/or railings 600, 700. Alignment portions 1007 may include a gap 1008 that may have substantially the same or greater distance than a width of panel 901, for example, so that panel 901 may form a slight interference fit with alignment portions 1007 and/or may slide through gap 1008 without substantial interference from alignment portions 1007.

[0076] An embodiment of the invention includes a railing assembly tool. Figs. 8, 8A, 8B, and 8C depict various exemplary embodiments of other railing assembly tools 800 that may be used in the invention. Railing assembly tool 800 is a thin, elongate member that may be manufactured out of any suitable material using any method. For example, railing assembly tool 800 may be injection molded, vacuum formed, extruded out of a plastic or other materials, cut, formed, or otherwise fabricated.

[0077] The railing assembly tool may be configured to assist in one or more steps and/or phases of assembling a deck and/or railing, for example, any step set forth herein or in U.S. Patent Application No. 10/814,586, entitled “Method and Apparatus for Assembling Railings,” filed April 1, 2004, the entirety of which is incorporated herein by reference. It should be understood, however, that one of ordinary skill in the art will recognize that there are a myriad of other steps and/or phases in assembling decks and/or railings, and that the railing assembly tool may be configured and/or adapted to assist in implementing any of those phases and/or steps. Furthermore, it should be understood that one of ordinary skill in the art will recognize that there are a myriad of types of decks and/or deck configurations, and that the railing assembly tool may be configured to assist in implementing assembly steps and/or phases on any deck and/or deck configuration. An example of a suitable railing assembly tool is disclosed in U.S. Patent Application No. 10/814,586, entitled “Method and Apparatus for Assembling Railings,” filed April 1, 2004, the entirety of which is incorporated herein by reference.

[0078] Railing assembly tool 800 may include a main body portion 801 with side portions (not shown) extending from the main body portion 801. The side portions may be disposed on multiple sides of the main body portion 801 and each of the side portions may extend in substantially the same direction. The side portions may be flexible such that the combination of main body portion 801 and the side
portions may engage outer portion 203 of post sleeve 200 with desired dimensions. Thus, when a surface of main body portion 801 is substantially aligned and/or flush against outer portion 203 of post sleeve 200, the side portions of railing assembly tool 800 may hold railing assembly tool 800 substantially centered relative to post sleeve 200 and/or hold railing assembly tool 800 on post sleeve 200 while the user is otherwise engaged.

[0079] Railing assembly tool 800 may include portions configured to align various portions of a deck and/or railing assembly 100. For example, main body portion 801 may have an aligning portion 802 (e.g., hole) with a flexible feature 803. Aligning portion 802 and flexible feature 803 may be configured and/or adapted to receive, accommodate, and retain a mounting bracket (e.g., mounting bracket 104), for example, by having a configuration substantially similar to a cross-section of mounting bracket 104. One of ordinary skill in the art will realize that aligning portion 802 and flexible feature 803 may be configured to receive, accommodate, and retain any other suitable deck and/or railing assembly portion. Aligning portion 802 and flexible feature 803 may be configured to retain mounting bracket 104 while railing assembly tool 800 is being handled and/or transported, but prior to affixing mounting bracket 104 to post sleeve 200. Flexible feature 803 may be configured to allow mounting bracket 104 to be placed in and removed from aligning portion 802.

[0080] Aligning portions 802 and flexible features 803 may be disposed on railing assembly tool 800 so as to place mounting brackets 104 at the desirable height on post sleeve 200. For example, aligning portion 802 and flexible features 803 may be disposed on railing assembly tool 800 such that one set of alignment portions 802 and flexible features 803 is distanced from an end of main body portion 801 corresponding to a desirable placement height of mounting bracket 104 on post sleeve 200 (e.g., for upper railing 600 and/or lower railing 700). In another example, aligning portion 802 and flexible features 803 may be disposed on railing assembly tool 800 such that one set of alignment portions 802 and flexible features 803 is distanced from another set of alignment portions 802 and flexible features 803 corresponding to a desirable placement height and/or distance of a first mounting bracket 104 relative to a second mounting bracket 104 on post sleeve 200 (e.g., for upper railing 600 and/or lower railing 700).

[0081] Aligning portions 802 and flexible features 803 may be configured and/or adapted to receive, accommodate, and/or retain a mounting bracket 104 in any suitable position. For example, as shown in Figs. 8A, 8B, and 8C, one or more of aligning portions 802 and/or flexible features 803 may be disposed on slidable portions 804. Slidable portion 804 may be movable relative to the rest of tool 800, for example, relative to markers 805 corresponding to any suitable angles (e.g., about 45 degrees, about 22.5 degrees, and/or about 0 degrees in both directions). Depending on the position of slidable portion 804, mounting bracket 104 may be disposed on tool 800 such that it may be placed on post 101 and/or post sleeve 200 at a desired position corresponding to the angle (e.g., horizontal) of railing 600, 700 relative to post 101 and/or post sleeve 200. For example, if a center of slidable portion 804 is placed such that it is aligned with markers 805 corresponding to 45 degrees, then mounting bracket 104, when placed on post 101 and/or post sleeve 200, would be positioned such that it would properly accommodate a railing 600, 700 whose longitudinal axis is placed at 45 degrees relative to the surface of post 101 and/or post sleeve 200 to which mounting bracket 104 is mounted (e.g., closer to one edge and/or side of post 101 and/or post sleeve 200 than another). In otherwords, mounting bracket 104 would intentionally not be centered in a horizontal direction relative to the side of post 101 and/or post sleeve 200 to which it is mounted, so as to more suitably accommodate the end portion of railing 600, 700, which may have an angle corresponding to the position at which mounting bracket 104 was placed on post 101 and/or post sleeve 200 (e.g., if mounting bracket 104 was placed at a position corresponding to 22.5 degrees, than the end portion of railing 600, 700 may have been cut at angle of about 22.5 degrees in the horizontal direction relative to the longitudinal axis of railing 600, 700).

[0082] Railing assembly tool 800 may be configured to assist in affixing a deck and/or railing assembly portion to another deck and/or railing assembly portion in a desired orientation. For example, railing assembly tool 800, and specifically aligning portion 802 and flexible feature 803, may be configured to assist in affixing mounting bracket 104 to outer portions 203 of post sleeve 200 in a specific orientation, for example, because aligning portion 802 and flexible feature 803 are symmetrical along a longitudinal direction of railing assembly tool 800, but may not be symmetrical along another orientation of the railing assembly tool 800. Mounting bracket 104 may be placed in aligning portion 802 such that mounting bracket 104 protrudes from either side of main body portion 801. For example, when railing assembly tool 800 is placed such that the side portions grip post sleeve 200, mounting bracket 104 may protrude away from main body portion 801 in a first direction. However, when railing assembly tool 800 is placed against post sleeve 200 where the side portions are not configured to grip post sleeve 200 (e.g., because a side of post sleeve 200 is wider than the distance between the side portions), a side of main body portion 801 opposite the side portions may be placed against post sleeve 200, and mounting bracket 104 may be disposed on railing assembly tool 800 so as to protrude away from main body portion 801 in a second direction different (e.g., opposite) the first direction.

[0083] Railing assembly tool 800 may have a plurality of aligning portions 802 and a plurality of flexible features 803. As shown in Fig. 8, one aligning portion 802a and flexible feature 803a may be configured to orient mounting bracket 104 for placement on post sleeve 200 in a first orientation, while another aligning portion 802b and flexible feature 803b may be configured to orient mounting bracket 104 for placement on post sleeve 200 in a second orientation different (e.g., opposite) the first orientation. As also shown in Fig. 8, a first set of aligning portion 802a and flexible feature 803a (e.g., two aligning portions 802a and flexible features 803a, one of each disposed one opposite ends of main body portion 801) may be configured to orient mounting brackets 104 in the same direction, while a second set of aligning portion 802 and flexible feature 803 (e.g., aligning portion 802b, flexible feature 803b, aligning portion 802c, and/or flexible feature 803c) different from the first set may be configured to orient mounting brackets 104 in different (e.g., opposite) directions. For example, the first set may be used to place mounting brackets 104 on post sleeve 200 so as to
mount railings 600, 700 in a substantially horizontal configuration. In another example, the second set may be used to place mounting brackets 104 on post sleeve 200 so as to mount railings 600, 700 at an angled configuration (e.g., railings 600, 700 may form a 22.5, 45, and/or 90 degree vertical angle with respect to post sleeve 200). An angled configuration may be desired, for example, when placing railings 600, 700 on stairs. Flexible features 803 may be a stress-release material configured such that it may disintend so that 800 lining profile (e.g., mounting bracket 104) can be placed and retained in aligning portion 802.

[0084] Embodiments of the invention include a method for assembling a railing assembly 100. For example, one or more railing assembly components may be provided at a deck assembly site. Deck frame 105 may be assembled to include a joist, and then one or more posts 101 may be mounted to deck frame 105, for example, at a joist. Prior or subsequent to mounting post 101 to deck frame 105, post 101 may be cut to the length of post sleeve 200 plus a length necessary to mount post 101 to deck frame 105. For example, post sleeve 200 may be about 39 inches, thus post 101 may be cut to a length of about 39 inches plus an amount sufficient to mount post 101 to deck frame 105. In addition or in the alternative, post 101 may be mounted in the ground, thus post 101 should have a length of post sleeve 200 plus a length sufficient to stably mount post 101 in the ground.

[0085] Post skirt 300 may then be provided. Mounting portions 202 may be broken off of post skirt 300, and then post skirt 300 may be placed around post 101 (e.g., via a hole defined by main body 301 such that cap interface portion 302 faces toward the ground and/or deck frame 105. Post skirt 300 may then be advanced down post 101 until cap interface portion 302 comes into contact with another portion of the deck, for example, deck planks and/or deck frame 105.

[0086] Post sleeve 200 may then be placed on post 101. An end 205 of post sleeve 200 may be placed over a top end of post 101 such that the outer surfaces of post 101 are disposed substantially in between inner surfaces 208 of inner portions 201 of post sleeve 200. Post sleeve 200 may then be continuously slid over post 101 until end 205 of post sleeve 200 contacts main body 301 of post skirt 300 (e.g., on the side of post skirt 300 opposite cap interface portion 302). When completed, end 204 of post sleeve 200 may be substantially even with the top end of post 101.

[0087] Another post skirt 300 may then be provided. Post skirt 300 may be placed over end 204 of post sleeve 200 such that mounting holes 304 are aligned with hole 202a of post sleeve 200. Screws 106 may then be used to connect post skirt 300 to post sleeve 200. Post cap 102 may then be placed and/or attached to outer surface 302a of cap interface portion 302, for example, to form a snap-fit. One or more posts 101, post sleeves 200, and/or post skirts 300 may be installed in such a manner.

[0088] Once two or more post sleeves 200 have been installed, mounting brackets 104 may be provided. Mounting brackets 104 may be configured connect railings 600, 700 between two post sleeves 200. Mounting brackets 104 may be placed, accommodated, and/or retained in aligning portions 802 via flexible features 803 of railing assembly tool 800. Mounting brackets 104 may be placed in tool 800 in the appropriate sets of aligning portions 802 and/or flexible features 803 in the appropriate orientation. For example, mounting brackets 104 may be placed in aligning portions 102 that correspond to the desired height and/or orientations of railings 600, 700 on post sleeve 200. Tool 800 may then be placed against outer surface 203 of post sleeve 200, with an end of tool 800 aligned with, for example, a top of a deck plank, deck frame 105, and/or post skirt 300 disposed below end 205 of post sleeve 200. Tool 800 may also be centered horizontally on post sleeve 200. Mounting brackets 104 may then be mounted on post sleeve 200, for example, using 2.5 inch drive screws.

[0089] For configurations where railings 600, 700 may be placed horizontally between two post sleeves 200, aligning portions 802 and/or flexible features 803 on each end of tool 800 that are larger than the other aligning portions 802 and/or flexible features 803 may be used (e.g., aligning portions 802a, 802b and flexible features 803a, 803b). End 801a of tool 800 may be configured to be placed down (e.g., against a top of post skirt 300) when installing mounting brackets 104. Aligning portions 802a, 802b and/or flexible features 803a, 803b may be configured to accommodate mounting bracket 104 in opposing configurations. For example, a flat side of mounting bracket 104 may be configured to be placed down in aligning portion 802b and/or away from flexible feature 803b, and a flat side of mounting bracket 104 may be configured to be placed in aligning portion 802a and/or away from flexible feature 803a. An angle side of mounting bracket 104 may be toward flexible features 802a, 803a.

[0090] Railings 600, 700 then may be configured to have a desired length. Railings 600, 700 may be cut to a length of a center to center distance of post sleeves 200 installed on posts 101, minus a width of post sleeve 200 in the direction railings 600, 700 are to be mounted between post sleeves 200, plus 0.5 inches. For example, centers of post sleeves 200 installed on posts 101 may have a center to center distance of about 72 inches. Post sleeves 200 may have a width of about 6 inches. Thus, railings 600, 700 may be configured to have a length of about 66.5 inches.

[0091] Railing supports may be placed into space 711 of railing 700. Railing 700 may then be attached to post sleeve 200 via mounting brackets 104, for example, by placing a downward facing flat surface of mounting bracket 104 against upward facing top surface 703a of double wall 703.

[0092] One or more gaskets 400 may be placed between one or more ends 700a, 700b of railing 700 and outer portion 203 of post sleeve 200. Mounting bracket 104 may be disposed in space 414. Outer edges 412 of gasket 400 may be substantially adjacent to and/or in line with at least a portion of outer surface 700c of railing 700 and/or a top surface 501a of alignment part 500. End portions of fingers 408 may be pressed one of an end 700a, 700b of railings 700 and/or outer portion 203 of post sleeve 200 adjacent to where mounting bracket 104 is affixed. A top edge of thicker portion 406 may be configured to be aligned with a top surface 501a of alignment part 500.

[0093] A 1.5 inch, #12 screw 106 may then be placed through double wall 703 and/or mounting bracket 104 to affix railing 700 to mounting bracket 104. Screw protectors may then be placed over portions of screw 106 protruding from one of double wall 703 and/or mounting bracket 104. Railing 700 may be attached to mounting brackets 104 that
are mounted to post sleeve 200 at a lower height relative to other mounting brackets 104 on post sleeve 200.

[0094] Alignment part 500 may be configured (e.g., cut) to have a length substantially the same as railings 600, 700. Alignment part 500 may then be affixed to railing 700, for example, by placing interface portion 503 into an interlocking position with interface portion 705. This may be done by placing gripping portion 503b in contact with groove 710 disposed below protrusions 712. End portion 504 may be disposed adjacent and/or slightly above protrusion 709, for example, to prevent a casual observer from viewing any portion of interface portion 705. Thus, alignment part 500 may form a snap-fit with railing 700.

[0095] Another alignment part 500 may then be placed on top of alignment part 500 affixed to railing 700 in an opposite orientation (e.g., interface portion 503 and/or end portion 504 of another alignment part 500 may face in a direction away from railing 700). Ends 501a, 501b and alignment portions 502 of alignment parts 500 may be aligned relative to each other.

[0096] Balusters 103 may be configured (e.g., cut) to have a desired length, for example, a length equal to a distance between top surface 703a of railing 700 and 603a of railing 600 in an installed configuration, minus about 0.125 inches. For example, if a distance between top surface 703a of railing 700 and 603a of railing 600 in an installed configuration is 30.5 inches, then balusters 103 may be configured to have a length of about 30.375 inches.

[0097] An end of one or more balusters 103 may be placed in each of one or more alignment portions 502 of one or more alignment parts 500. End of baluster 103 may be placed in alignment portion 502 until the end contacts top surface 703a of double wall 703. Baluster 103 may be centered relative to railing 700 by aligning portions 706 (e.g., in a direction perpendicular to a longitudinal axis of railing 700 and/or parallel to a plane including top surface 703a). A baluster 103 may be placed in each of one or more alignment portions of one or more alignment parts 500.

[0098] Railing 600 may then be placed on mounting brackets 104 mounted higher relative to other mounting brackets 104, for example, to which railing 700 is attached. For example, a downward facing bottom surface 603a of double wall 600 may be placed on an upward facing flat surface of mounting brackets 104. An upper end of balusters 103 may be placed between aligning portions 606 so as to center balusters 103 in railing 600, for example, in a direction perpendicular to a longitudinal axis of railing 600 and/or parallel to a plane including bottom surface 603a.

[0099] One or more gaskets 401 may be placed between one or more ends 600a, 600b of railing 600 and outer portion 203 of post sleeve 200. Mounting bracket 104 may be disposed in space 415. Outer edges 413 of gasket 401 may be substantially adjacent to and/or in line with at least a portion of outer surface 600c of railing 600. End portions of fingers 400 may be pressed one of an end 600a, 600b of railings 600 and/or outer portion 203 of post sleeve 200 adjacent to where mounting bracket 104 is affixed. A top edge of thicker portion 407 may be configured to be aligned with an outer surface 600c and/or a top surface 601a of railing 600.

[0100] Another alignment part 500 placed on top of alignment part 500 snapped into railing 700 may then be brought approximately halfway up a length of baluster 103, for example, to align balusters 103 relative to each other (e.g., space balusters 103 equally far apart). 1.5 inch, #12 self-drilling screws 106 may be used to affix railings 600 to mounting brackets 104, for example, by placing screw 106 through a bottom of mounting bracket 104, double wall 603, and/or protrusion 604.

[0101] Another alignment part 500 may then be affixed to railing 600, for example, by placing interface portion 503 into an interlocking position with interface portion 605. This may be done by placing gripping portion 503b in contact with groove 610 disposed above protrusions 611. End portion 504 may be disposed adjacent and/or slightly below protrusion 609, for example, to prevent a casual observer from viewing any portion of interface portion 605. Thus, alignment part 500 may form a snap-fit with railing 600.

[0102] Instead of installing alignment parts 500 and/or balusters 103 on railings 600, 700, however, panel holder 1000 may be installed on railings 600, 700, for example, via interface portions 605, 705. As shown in Figs. 10B and 10C, gripping portions 1003b may be placed in grooves 610, 710 so as to form a snap-fit between panel holder 1000 and railings 600, 700. End portions 1004 may be in contact with and/or disposed inward from protrusions 609, 709. Protrusions 1013 may be in contact with and/or disposed inward from protrusions 607, 707.

[0103] Panel 901 may be made out of any suitable material. For example, panel 901 may be made out of glass, plastic, fiberglass, wood, and/or any other suitable transparent, translucent, or opaque material. Panel 901 may have any suitable shape (e.g., a rectangle), may have any suitable design (e.g., desired shapes or other items may be cut out of and/or around panel 901), and may have any suitable length (e.g., about a length of panel holders 1000 and/or railings 600, 700).

[0104] Panel 901 may be placed in retaining portion 1006 such that an end of panel 901 is in contact with and/or adjacent to end portion 1011. Panel 901 may be disposed between and/or have pressure placed on it by gripping portion 1010. Panel 901 may be disposed in gap 1008 between alignment portions 1007. A combination of protrusions 1013, connectors 1012, retaining portion 1006, and/or alignments portions 1007 may be configured to align, accommodate, and/or retain panel 901.

[0105] Railing 700 may be affixed to post sleeves 200 and/or mounting brackets 104 via screws 106 as set forth above. Panel holder 1000, after having been configured (e.g., cut) to have the appropriate length (e.g., same as railings 600, 700), may be affixed to railings 700, for example, by interface portion 1003 forming a snap-fit with interface portion 705. An end of panel 901 may then be placed between arms 1009, gripping portions 1010, and/or alignment portions 1007. In the alternative, end of panel 901 may be placed between arms 1009, gripping portions 1010, and/or alignment portions 1007 prior to forming a snap-fit between interface portion 1003 and interface portion 705, for example, to allow protrusions 1013 to assist gripping portions 1010 in applying force to panel 901 as panel holder 1000 is snap-fit with railing 700.

[0106] Another panel holder 1000 may then be affixed to an end of panel 901 opposite the end affixed to panel holder
1000 associated with railing 700. Railing 600 may then be affixed to another panel holder 1000 in a manner similar to how panel holder 1000 is affixed to railing 700 as set forth herein. Railing 600 may then be attached to post sleeve 200 via mounting brackets 104 and screws 106 as set forth herein. Accordingly, a panel assembly 900 as set forth in Fig. 9 may result.

[0107] Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with a true scope and spirit of the invention being indicated by the following claims.

What is Claimed is:

1. A railing assembly, comprising: a railing post; a railing member configured to be fixed to the railing post; and a member configured to be placed between the railing post and the railing, wherein the member is configured to improve an aesthetic appearance of the railing assembly.

2. The railing assembly of claim 1, wherein a top portion of the member is configured to cooperate with a top surface of the railing to form a substantially continuous surface.

3. The railing assembly of claim 1, wherein a side portion of the member is configured to cooperate with a side surface of the railing to form a substantially continuous surface.

4. The railing assembly of claim 1, wherein an outer portion of the member is configured to cooperate with an exterior surface of the railing visible to the user to form a substantially continuous surface.

5. The railing assembly of claim 1, wherein the member substantially fills a gap between the railing and railing post.

6. The railing assembly of claim 1, wherein the member includes polyvinyl chloride.

7. The railing assembly of claim 1, wherein at least a portion of the member is deformable.

8. The railing assembly of claim 1, further comprising a mounting bracket connected to the railing and the railing post, wherein the member is configured to be disposed around at least a portion of a mounting bracket.

9. The railing assembly of claim 1, wherein the member has a substantially U-shaped configuration.

10. The railing assembly of claim 1, wherein a top portion of the member has a greater thickness than another portion of the member.

11. The railing assembly of claim 1, wherein the member is substantially disposed in a plane that is perpendicular to a longitudinal axis of the railing.

12. The railing assembly of claim 1, wherein the member is disposed in a plane that is not perpendicular to a longitudinal axis of the railing.

13. The railing assembly of claim 1, wherein a portion of member is configured to extend at an angle relative to another portion of the member.

14. The railing assembly of claim 1, wherein the member is configured to resist being removed from between the railing and the railing post.

15. A railing assembly, comprising: a railing post; a railing member affixed to the railing post; and a member configured to cooperate with the railing, wherein the member is configured to accommodate at least one of a baluster and a panel.

16. The railing assembly of claim 15, wherein the member is configured to grip the railing.

17. The railing assembly of claim 15, wherein the member is configured to form a snap-fit with the railing.

18. The railing assembly of claim 15, wherein one of the member and the railing includes two tongues and another of the member and the railing includes two grooves, wherein the two tongues are configured to be placed in the two grooves.

19. The railing assembly of claim 18, wherein the two tongues are configured to grip the two grooves.

20. The railing assembly of claim 15, wherein the member is configured to form a snap fit with the at least one of the baluster and the panel.

21. The railing assembly of claim 15, wherein the member is configured to accommodate the at least one of the baluster and the panel at a plurality of angles.

22. The railing assembly of claim 15, wherein at least a portion of the panel is substantially transparent.

23. A method for assembling a railing assembly, comprising: providing a railing post, a railing, and a member; connecting the railing to the railing post; and placing the member between the railing post and the railing, wherein the member is configured to improve an aesthetic appearance of the railing assembly.

24. The method of claim 23, further comprising aligning a top portion of the member with a top surface of the railing.

25. The method of claim 23, further comprising aligning a side portion of the member with a side surface of the railing.

26. The method of claim 23, further comprising aligning an outer portion of the member with an exterior surface of the railing.

27. The method of claim 23, further comprising deforming at least a portion of the member.

28. The method of claim 23, providing a mounting bracket; connecting the mounting bracket to the railing post; connecting the railing to the mounting bracket; and placing the member at least partially around the mounting bracket.

29. The method of claim 23, further comprising placing the member in a plane that is not perpendicular to a longitudinal axis of the railing.

30. The method of claim 23, further comprising placing the member in a plane that is perpendicular to a longitudinal axis of the railing.

31. The method of claim 23, wherein the member is configured to resist being removed from between the railing and the railing post.

32. A method for assembling a railing assembly, comprising: providing a railing post, a railing, and a member; connecting the railing to the railing post; connecting the member to the railing; and connecting at least one of a baluster and a panel to the railing part.

33. The method of claim 32, further comprising gripping the railing via the member.

34. The method of claim 32, further comprising snap-fitting the member to the railing.

35. The method of claim 32, further comprising placing two tongues on one of the member and the railing into two grooves of another of the member and the railing includes two grooves.

36. The method of claim 35, further comprising gripping the two grooves via the two tongues.

37. The method of claim 32, further comprising snap-fitting at least one of the baluster and the panel to the member.
38. The method of claim 32, further comprising adjusting an angle of the at least one of the baluster and the panel relative to the member.

39. The method of claim 32, wherein at least a portion of the panel is substantially transparent.

40. A member for a railing assembly, the railing assembly including a railing post and a railing configured to be affixed to the railing post, the member comprising: wherein the member is configured to be placed between the railing post and the railing, wherein the member is configured to improve an aesthetic appearance of the railing assembly.

41. The member of claim 40, wherein a top portion of the railing part is configured to cooperate with a top surface of the railing to form a substantially continuous surface.

42. The member of claim 40, wherein a side portion of the member is configured to cooperate with a side surface of the railing to form a substantially continuous surface.

43. The member of claim 40, wherein an outer portion the member is configured to cooperate with an exterior surface of the railing visible to the user to form a substantially continuous surface.

44. The member of claim 40, wherein the member substantially fills a gap between the railing and railing post.

45. The member of claim 40, wherein the member includes polyvinyl chloride.

46. The member of claim 40, wherein at least a portion of the member is deformable.

47. The member of claim 40, wherein the railing assembly further comprises a mounting bracket connected to the railing and the railing post, wherein the member is configured to be disposed around at least a portion of a mounting bracket.

48. The member of claim 40, wherein the member has a substantially U-shaped configuration.

49. The member of claim 40, wherein a top portion of the member has a greater thickness than another portion of the member.

50. The member of claim 40, wherein the member is configured to be substantially disposed in a plane that is perpendicular to a longitudinal axis of the railing.

51. The member of claim 40, wherein the member is configured to be disposed in a plane that is not perpendicular to a longitudinal axis of the railing.

52. The member of claim 40, wherein a portion of member is configured to extend at an angle relative to another portion of the member.

53. The member of claim 40, wherein the member is configured to resist being removed from between the railing and the railing post.

54. A member for a railing assembly, the railing assembly including a railing post and a railing configured to be affixed to the railing post, the member comprising: wherein the member is configured to be connected to the railing, wherein the member is configured to accommodate at least one of a baluster and a panel.

55. The member of claim 54, wherein the member is configured to grip the railing.

56. The member of claim 54, wherein the member is configured to form a snap-fit with the railing.

57. The member of claim 54, wherein one of the member and the railing includes two tongues and another of the member and the railing includes two grooves, wherein the two tongues are configured to be placed in the two grooves.

58. The member of claim 57, wherein the two tongues are configured to grip the two grooves.

59. The member of claim 54, wherein the two tongues are configured to form a snap fit with the at least one of the baluster and the panel.

60. The member of claim 54, wherein the member is configured to accommodate the at least one of the baluster and the panel at a plurality of angles.

61. The member of claim 54, wherein at least a portion of the panel is substantially transparent.

62. A railing assembly kit for connection to a railing post, comprising: a first railing portion; and a second railing portion, wherein at least one of the first railing portion and the second railing portion is configured to be connected to the railing post, wherein the first railing portion and the second railing portion are configured to be connected to each other, wherein at least one of the first railing portion and the second railing portion is configured to accommodate a baluster, wherein at least one of the first railing portion and the second railing portion is configured to be connected to the baluster.

63. The railing assembly of claim 62, wherein the first railing portion is configured to cover the second railing portion.

64. The railing assembly of claim 62, wherein the second railing portion is configured to substantially surround an end of the baluster.

65. The railing assembly of claim 62, wherein the second railing portion includes a plurality of tongues configured to be placed on opposite sides of an end of the baluster, wherein the plurality of tongues run substantially along the entire length of the second railing portion.

66. A deck, comprising: a railing post; a first railing portion; a second railing portion connected to the first railing portion; and a plurality of balusters connected to at least one of the first railing portion and the second railing portion, wherein at least one of the first railing portion and the second railing portion is connected to the railing post.

67. The deck of claim 66, wherein the first railing portion is configured to cover the second railing portion.

68. The deck of claim 66, wherein the second railing portion is configured to substantially surround ends of the plurality of balusters.

69. The deck of claim 66, wherein the second railing portion includes a plurality of tongues configured to be placed on opposite sides of ends of the plurality of balusters, wherein the plurality of tongues run substantially along the entire length of the second railing portion.

70. The deck of claim 66, further comprising a post sleeve disposed over substantially an entire length of the railing post.

71. The deck of claim 70, further comprising a post skirt disposed over an end of the post sleeve and the railing post.

72. The deck of claim 66, wherein the first railing portion and the second railing portion form one of an upper railing and a lower railing.

73. The deck of claim 72, further comprising a third railing portion; and a fourth railing portion connected to the third railing portion to form one of an upper railing and a lower railing different from the first railing portion and second railing portion; and wherein the plurality of balusters are connected to at least one of the third railing portion and
the fourth railing portion, wherein at least one of the third railing portion and the fourth railing portion is connected to the railing post.

74. The deck of claim 70, further comprising a post cap disposed on an end of the post sleeve.

75. A method for assembling at least a portion of a deck, comprising: providing a railing post, a first railing portion, and a second railing portion; connecting at least one of the first railing portion and the second railing portion to the railing post; connecting the first railing portion to the second railing portion; and connecting a baluster to at least one of the first railing portion and the second railing portion.

76. The method of claim 75, further comprising covering the second railing portion with the first railing portion.

77. The method of claim 75, further comprising surrounding an end of the baluster with the second railing portion.

78. The method of claim 75, wherein the second railing portion includes a plurality of tongues, the method further comprising placing the plurality of tongues on opposite sides of an end of the baluster.

79, 80. The method of claim 75, further comprising placing a post sleeve over substantially an entire length of the railing post.

80, 81. The method of claim 80, further comprising placing a post skirt over an end of the post sleeve and the railing post.

81, 82. The method of claim 75, wherein the first railing portion and the second railing portion form one an upper railing and a lower railing.

82, 83. The method of claim 82, further comprising providing a third railing portion and a fourth railing portion configured to be connected to the third railing portion to form one of an upper railing and a lower railing different from the first railing portion and the second railing portion; connecting the baluster to at least one of the third railing portion and the fourth railing portion; and connecting at least one of the third railing portion and the fourth railing portion to the railing post.

83, 84. The method of claim 80, further comprising placing a post cap on an end of the post sleeve.

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