A post configured for use as a vertical member in a railing system comprising a post member for mounting to a base surface. The post member defines an elongated opening configured to receive a panel therein.
FIG. 3
FIG. 7
FENCING AND RAILING POST

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 61/864,052, filed Aug. 9, 2013 which is incorporated herein by reference in its entirety.

BACKGROUND

[0002] Fencing and railing are typically used for outdoors around decks, patios, pools and property boundaries for aesthetics, safety and/or privacy. They are typically constructed from posts, rails and pickets attached together using fasteners such as nails and screws. The posts provide both structural support and aesthetics for the fencing or railing. Historically, posts have been constructed from wood. In recent years, posts have been constructed or covered with alternative materials such as metal, plastics or composites for aesthetics and to simplify installation.

BRIEF SUMMARY

[0003] According to an embodiment of the invention, a post configured for use as a vertical member in a railing system comprises a post member for mounting to a base surface. The post member defines an elongated opening on at least one side of the post member and has at least one retainer positioned adjacent the elongated opening. The at least one opening and retainer are configured to slidably receive and position a panel in register with the at least one opening.

[0004] The post may have elongated opening on two sides of the post, and at least one retainer positioned adjacent each of the elongated openings. The elongated opening on at least one side of the post may comprise an elongated opening on opposite sides of the post, and at least one retainer positioned adjacent each of the elongated openings. The post may further comprise a panel member slidably received into each elongated opening of the post and a base member adapted to be mounted to a base surface and to interconnect the post to the base surface. The post member may be an extruded article and may define a vertically contiguous central channel. The color of the post can be changed by changing out a first panel for a second panel of a different color.

[0005] According to one embodiment, the post member comprises a pair of juxtaposed channel members interconnected by at least one web of material. Each channel member comprises a first tab at each end, a second tab spaced inwardly from each end, and a positioning tab located between the first and second tabs. The positioning tab is smaller in lateral size than the first and second tab and the space between the juxtaposed channel members defines the elongated opening on each side of the post.

[0006] According to another embodiment, the post member is formed from a pair of juxtaposed channel members. Each channel member comprises a generally C-shaped member may have a first end, a second end, each of the first and second ends of each C-shaped member comprises a laterally, inwardly extending portion having a distally-extending retainer thereon. The post member may further comprise at least one panel having a pair of retainer slots on a rearward portion thereof. The retainer slots are sized to receive the distally-extending retainer on the corresponding first or second ends of the pair of juxtaposed channel members of the post member, whereby, the post is formed by a pair of the juxtaposed channel members with oppositely-disposed panels on opposite sides thereof.

[0007] According to another embodiment, the post member comprises a pair of juxtaposed channel members. Each channel member comprises a first end and a second end. Each of the first end and the second end of the channel member comprises an inwardly-extending tab. The retainer comprises a pair of retainers extending inwardly from each channel member spaced centrally from the first and second ends of each channel member. The pair of retainers each comprises a slotted socket on a distal end. The post member may further comprise a retainer panel with a bulbous edge on each end thereof. One of the pair of channel members can be interconnected to the other of the pair of channel members by receiving the bulbous edge of the retainer panel within a corresponding slotted socket on each of the juxtaposed channel members.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] In the drawings:

[0009] FIG. 1 is a perspective view of a post in a railing system according to an embodiment of the invention;

[0010] FIG. 2 is a perspective of a portion of the post of FIG. 1 according to an embodiment of the invention;

[0011] FIG. 3 is a top view of the post of FIG. 1 with the panels removed according to another embodiment of the invention;

[0012] FIG. 4 is perspective of a post base according to an embodiment of the invention;

[0013] FIGS. 5A-5C are perspective views of panels being inserted into the post member according to an embodiment of the invention;

[0014] FIG. 6 is a top view of a post according to another embodiment of the invention;

[0015] FIG. 7 is a top view of a post according to another embodiment of the invention; and

[0016] FIG. 8 is a top view of a post member according to another embodiment of the invention.

DETAILED DESCRIPTION

[0017] Turning to the drawings and to FIG. 1 in particular, there is shown a perspective view of a railing system 10 according to an embodiment of the invention. The railing system 10 comprises at least one vertically extending post 20, an upper rail 30 and lower rail 40 extending from the post 20 perpendicularly, and pickets 50 extending vertically between the rails 30, 40. It will be understood that the at least one post 20 and the corresponding upper and lower rails 30, 40 can take any desired configuration and can be positioned on a level surface, as well as inclined, such as to travel up and down stairs, for example.

[0018] The post 20 comprises a structural post member 22, a base member 24 and at least one panel 26. The post member 22 defines an elongated opening (best seen in FIG. 2) and comprises at least one retainer 32 positioned adjacent to the elongated opening configured to slidably receive and position the at least one panel 26 in register with the at least one opening.

[0019] The post member 22 is mounted to the base member 24 which in turn is mounted to a base surface to secure the post 20 in a vertical position. The post member 22 may be mounted to the base member 24 in a variety of ways including
by not limited to welding, brackets, bolts, screws, nails or the like. The upper a lower rails 30, 40 having the pickets 50 mounted vertically therebetween are mounted to the post member 22. The upper and lower rails 30, 40 may be mounted to the post member 22 in a variety of ways including but not limited to bolts, screws, nails, brackets or the like. It will be understood that the rails 30, 40 are mounted between two posts 20 and that multiple posts 20, rails 30, 40 and pickets 50 may be used to create a fence or rail of any length.

As seen in FIG. 2, the post member 22 comprises a pair of jointed channel members 22a, 22b defined by one interconnecting web 38 wherein the space between the channel members 22a, 22b define the elongated opening. The channel members 22a, 22b further define a first panel elongated opening 29a, a second panel elongated opening 29b and a central elongated opening 44 or vertically contiguous channel. Each channel member 22a, 22b comprises a first tab 32a, 32b, 32c, 32d at each end extending inwardly and a second tab 42a, 42b spaced inwardly from and parallel to the first tabs 32a, 32b, 32c, 32d. The channel members 22a, 22b further comprise positioning tabs 36a, 36b, 36c, 36d located between the first tabs 32a, 32b and the interconnecting web 38 at one end of the channel members 22a, 22b and between the first tabs 32b, 32d and the second tabs 42a, 42b at the other end of the channel members 22a, 22b.

The space between the channel members 22a, 22b, the first tabs 32a, 32b, 32c, 32d and the interconnecting web 38 define the first panel elongated opening 29a. The space between the channel members 22a, 22b, the first tabs 32b, 32d and the second tabs 42a, 42b define the second panel elongated opening 29b. The space between the channel members 22a, 22b, the interconnecting web 38 and the second tabs 42a, 42b define the central elongated opening 44.

The first and second panel elongated openings 29a, 29b are configured to slidably receive a first and second panel members 26, 28 such that they are retained within the elongated openings 29a, 29b by the first tabs 32a, 32b, 32c, 32d, the interconnecting web 38 and/or the second tabs 42a, 42b. The positioning tabs 36a, 36b, 36c, 36d are smaller in lateral size than the first tabs 32a, 32b, 32c, 32d such that they act to center the first and second panels 26, 28 within the elongated openings 29a, 29b. It will be understood that the defining parameters of the first and second panel elongated openings 29a, 29b act as the retainers for the first and second panel members 26, 28 of the post 20.

In another embodiment, the space between the channel members 22a, 22b, the first tabs 32a, 32b, 32c, 32d and the positioning tabs 36a, 36b, 36c, 36d define the first and second panel elongated opening 29a, 29b.

FIG. 3 shows a top view of the post member 22 with the panels removed. The length of the first and second channels 22a, 22b and the interconnecting web 38 are configured to achieve a desired length A of the post member 22 and width B of the post member 22 respectively. The lateral length of the positioning tabs 36a, 36b, 36c, 36d are configured such that the width B minus the lateral length of the positioning tabs 36a, 36b, 36c, 36d corresponds to a desired elongated opening width C and such that the elongated opening width C is centered with respect to the width B. The positioning tabs 36a, 36b, 36c, 36d are configured to be positioned inwardly of the first tabs 32a, 32b, 32c, 32d and to have a position tab depth D. The lateral length of the first tabs 32a, 32b, 32c, 32d and second tabs 42a, 42b are configured to have a tab length E that is greater than the lateral length of the positioning tabs 36a, 36b, 36c, 36d. The interconnecting web 38 is spaced inwardly from the first tabs 32a, 32c of one end of the channel members 22a, 22b at a first elongated opening depth G. The second tabs 42a, 42b are spaced inwardly from the first tabs 32b, 32d of the other end of the channel members 22a, 22b at a second elongated opening depth F.

In one example embodiment, the length A and width B are in the range of 4”. The lateral length of the positioning tabs 36a, 36b, 36c, 36d are configured such that the elongated opening width C is in the range of 3/8” the position tab depth D is the range of 3/32”, the tab length E is configured to be in the range of 1/8” and the first and second elongated opening depth G, F are configured to be in the range of 1/32”. At these dimensions ranges, the elongated openings 29a, 29b are configured to receive a 1”x4” panel wherein the actual dimensions of such a panel are in the range of ¾”x3/8” as well as to take into account clearances and tolerances. Furthermore, the position tab depth D in the range of 3/32” is configured such that a panel having a thickness of around 1/16” and a length between 3/32” and 4” may be inserted into the elongated openings 29a, 29b and be retained by the position tabs 36a, 36b, 36c, 36d and the first tabs 32a, 32b, 32c, 32d.

The post member 22 may be made from a variety of materials including but not limited to plastic, composite, steel, iron, aluminum, wood, fiberglass, other metals or some combination of these materials. The post member 22 may be made by extruding the material having the profile shown in FIG. 3 and then cutting the extrusion to the desired height.

FIG. 4 illustrates the base member 24 used to mount the post member 22 to a base surface. The base member 24 has a generally rectangular shape having a length H and a width I corresponding to the length A and width B of the post member 22 shown in FIG. 3. The base member 24 comprise four mounting holes 49a, 49b, 49c, 49d each disposed in a separate quadrants with respect the rectangular shape of the base member 24, which are used for mounting the base member 24 to a base surface. A central aperture 48 is also formed in the base member to allow for wiring or the like to pass through the base member 24 into the elongated openings of the post. While one example of the base member 24 is shown as a rectangular plate with mounting holes 49a, 49b, 49c, 49d, other configurations of the base member 24 can be used to mount the post member 22 to a base surface without departing from the scope of this invention.

In one example embodiment, the length H and width I are in the range of 4” and the base member 24 has a thickness in the range of ¾”. The four mounting holes 49a, 49b, 49c, 49d have a diameter in the range of 1/4”.

The base member 24 may be made from a variety of materials including but not limited to plastic, composite, steel, iron, aluminum, wood, fiberglass, other metals or some combination of these materials. The base member 24 may be made by extruding the material at the desired thickness and length H, drilling the mounting holes 49a, 49b, 49c, 49d and central aperture 48 and then cutting the extrusion to the desired width I.

Referring now to FIGS. 5A-5C, the post 20 may be assembled by first attaching the base member 24 to the bottom of the post member 22 as described above. The base member 24 and post member 22 may then be secured to a base surface such as a deck or patio by secure bolts, anchors or the like through the mounting holes 49a, 49b, 49c, 49d and into the base surface. Once the post member 22 and base member 24
are secured to a base surface, the upper and lower rails 30, 40 may be attached to the post member 22 as described above and illustrated in FIG. 5A. Lastly the first and second panels 26, 28 may be inserted into the first and second panel elongated openings 29a, 29b as illustrated in FIGS. 5I-5C and indicated by arrows 50. The panels 26, 28 may then be removed from the elongated openings 29a, 29b at any time to gain access to the central elongated opening 44 or to replace the panels 26, 28 with like panels or panels of a different color, material or design.

[0031] Referring now to FIG. 6, there is shown a top view of a post 100 according to another embodiment of the invention. The post 100 comprises a post member having a pair of juxtaposed channel members 102a, 102b, a first panel 108, a second panel 110 and a base mount (not shown). Each channel member 102a, 102b comprises a generally C-shaped member having a first end and a second end each having a laterally and inwardly extending portion or tab 104a, 104b, 104c, 104d and a distally-extending retainer 106a, 106b, 106c, 106d mounted to the ends of the tabs 104a, 104b, 104c, 104d.

[0032] A first and second panel 108, 110 each comprise a pair of elongated retainer slots on the rearward portion thereof that are configured to receive the distally-extending retainers 106a, 106b, 106c, 106d on the corresponding tabs 104a, 104b, 104c, 104d of the pair of juxtaposed channel members 102a, 102b of the post 100. The space between the channel members 102a, 102b comprises a central elongated opening 112 or vertically contiguous channel.

[0033] The channel members 102a, 102b and panels 108, 110 may be made from a variety of materials including but not limited to plastic, composite, steel, iron, aluminum, wood, fiberglass, other metals or some combination of these materials. The channel members 102a, 102b may be made by extruding the material having the profile of one of channel members 102a, 102b and then cutting the extrusion to the desired height, wherein two cut extrusions would form the pair of channel members 102a, 102b. The elongated slots in the panels 108, 110 may be routed or the panels 108, 110 may be extruded with the elongated slots formed during extrusion.

[0034] To assemble the post 100, the first and second channel members 102a, 102b may be mounted to a base member such as the base member 24 shown in FIG. 4 and subsequently mounted to a base surface as described above. Once the channel members 102a, 102b and base member are secured to a base surface, upper and lower rails may be attached to the channel members 102a, 102b. Lastly the retainer slots of the first and second panels 108, 110 may be inserted over the distally-extending retainers 106a, 106b, 106c, 106d to secure the first and second panels 108, 110 to the first and second channel members 102a, 102b.

[0035] Referring now to FIG. 7, there is shown a top view of a post 200 according to another embodiment of the invention. The post 200 comprises a post member having pair of juxtaposed channel members 202a, 202b, a retainer panel 208, a first and second panel 210, 212 and a base mount (not shown). The channel members 202a, 202b further define a first panel elongated opening 216a, a second panel elongated opening 216b and a central elongated opening 214 or vertically contiguous channel. Each channel member 202a, 202b comprises a first and a second end having an inwardly extending tab 204a, 204b, 204c, 204d at either end. The channel members 202a, 202b further comprise a pair of retainers 205a, 205b, 205c, 205d extending inwardly from each channel members 202a, 202b and spaced centrally from the first and second ends of each channel member 202a, 202b. The retainers 205a, 205b, 205c, 205d each comprise a slotted socket 206a, 206b, 206c, 206d on a distal end thereof. The retainer panel 208 comprises a bulbous edge 209, 209b on each end thereof which is configured to be received by the slotted sockets 206a, 206b, 206c, 206d of the retainers 205a, 205b, 205c, 205d to interconnect the channel members 202a, 202b. The post 200 may use one retainer plate 208 as illustrated, or two retainer plates 208 to interconnect the channel members 202a, 202b.

[0036] The space between the channel members 202a, 202b, inwardly extending tab 204a, 204b, 204c, 204d and retainers 205a, 205b, 205c, 205d define the elongated openings 216a, 216b. The space between the channel members 202a, 202b and retainers 205a, 205b, 205c, 205d define the central elongated opening 214. The panels 208, 210 are received in elongated openings 216a, 216b such that they are retained by the retainers 205a, 205b, 205c, 205d and inwardly extending tabs 204a, 204b, 204c, 204d. The slotted sockets 206a, 206b, 206c, 206d of the retainers 205a, 205b, 205c, 205d may impose and outwardly biasing force on the panels 208, 210 so as to bias them towards the inwardly extending tabs 204a, 204b, 204c, 204d.

[0037] The channel members 202a, 202b, retainer plate 208 and panels 210, 212 may be made from a variety of materials including but not limited to plastic, composite, steel, iron, aluminum, wood, fiberglass, other metals or some combination of these materials. The channel members 202a, 202b and retainer plate 208 may be made by extruding the material having the profile of one of channel member 102a, 102b and retainer plate 28, respectively, then cutting the extrusions to the desired height, wherein two cut extrusions of the channel member extrusion would form the pair of channel members 102a, 102b.

[0038] To assemble the post 200, the first and second channel members 202a, 202b may be mounted to a base member such as the base member 24 shown in FIG. 4 or the like and subsequently mounted to a base surface as described above. In one embodiment, the lower portion of the slotted sockets 206a, 206b, 206c, 206d near the base mount may be tapped and the base mount may comprise a series of through holes corresponding to the location of the slotted sockets 206a, 206b, 206c, 206d such that a bolt may pass through the base mount and be received by the slotted sockets 206a, 206b, 206c, 206d to secure the base mount to the channel members 202a, 202b. The base member and channel members 202a, 202b may then be secured to a base surface. Once the channel members 202a, 202b and base member are secured to a base surface, upper and lower rails may be attached to the channel members 202a, 202b. The retainer plate 208 or plates may then be inserted into the slotted sockets 206a, 206b, 206c, 206d to secure the channel members 202a, 202b together. In one embodiment, the retainer plate 208 may also be used to attach a rail to the post 200 when a corner connection is necessary. Lastly, the panels 210, 212 may be inserted into the elongated openings 216a, 216b.

[0039] Referring now to FIG. 8, there is shown a top view of a post member 300 where like elements from the embodiment shown in FIG. 3 are identified with the same reference numerals and include a prime (’) symbol. The post member 300 is similar to the post member 22 shown in FIG. 3 in that the post member 300 comprises a pair of juxtaposed channel members 22a’, 22b’ interconnected by at least one interconnecting web.
38 wherein the space between the channel members 22a', 22b' define a first panel elongated opening 29a', a second panel elongated opening 29b' and a central elongated opening 44 vertically contiguous channel. The post member 300 further comprises base mount slotted sockets 302a, 302b, 302c, 302d disposed in the four corners defining the central elongated opening 44. Two of the base mount slotted sockets 302a, 302c are disposed at the intersection of the channel members 22a', 22b' and the interconnecting web 38. Two of the base mount slotted sockets 302b, 302d are disposed at the intersection of the channel members 22a', 22b' and second tabs 42a', 42b'. The base mount slotted sockets 302a, 302b, 302c, 302d may be configured to receive bolts (or other suitable fasteners) in order to mount the post member 300 to the base mount.

[0040] The embodiments of the invention provide for a number of benefits including that it allows for simple and versatile post for using in fencing or railing systems. The elongated openings allow for easy access to the interior of the post such that mounting to a base surface and mounting of railings are simplified. The vertically contiguous central channel allows for a convenient channel to run wiring such as a low voltage power supply or speaker wire. Furthermore, the post allows for enhanced aesthetic appeal and flexibility by allowing panels of multiple sizes, colors, textures and materials to be easily inserted and removed from the post member. This allows a user to customize the look of the post to match the surroundings. Furthermore, the extricable components of the post allow for efficient manufacturing to both reduce manufacturing costs and enable high volume production.

[0041] While the invention has been specifically described in connection with certain specific embodiments thereof, it is to be understood that this is by way of illustration and not of limitation. Reasonable variation and modification are possible with the scope of the foregoing disclosure and drawings without departing from the spirit of the invention which is defined in the appended claims. Hence, specific dimensions and other physical characteristics relating to the embodiments disclosed herein are not to be considered as limiting, unless the claims expressly state otherwise.

What is claimed is:

1. A post configured for use as a vertical member in a railing system comprising a post member for mounting to a base surface, the post member defining an elongated opening on at least one side of the post, the post having at least one retainer positioned adjacent the elongated opening, configured to slidably receive and position a panel in register with the at least one opening.

2. The post of claim 1 wherein the post has an elongated opening on two sides of the post, and at least one retainer positioned adjacent each of the elongated openings.

3. The post of claim 1 wherein the elongated opening on at least one side of the post comprises an elongated opening on opposite sides of the post, and at least one retainer positioned adjacent each of the elongated openings.

4. The post of claim 1 wherein the post member comprises a pair of juxtaposed channel members interconnected by at least one web of material, each channel member comprises a first tab at each end, a second tab spaced inwardly from each end, and a positioning tab located between the first and second tabs, wherein the positioning tab is smaller in lateral size than the first and second tab, the space between the juxtaposed channel members defines the elongated opening on each side of the post.

5. The post of claim 1 and further comprising a panel member slidably received into each elongated opening of the post.

6. The post of claim 1 and further comprising a base member adapted to be mounted to a base surface and to interconnect the post to the base surface.

7. The post of claim 1 wherein the post member is formed from a pair of juxtaposed channel members, each channel member comprising a generally C-shaped member having a first end, a second end, each of the first and second ends of each C-shaped member comprises a laterally inwardly extending portion having a distally-extending retainer thereon.

8. The post of claim 7 and further comprising at least one panel having a pair of retainer slots on a rearward portion thereof, the retainer slots sized to receive the distally-extending retainer on the corresponding first or second end of the pair of juxtaposed channel members of the post member, whereby, the post is formed by a pair of the juxtaposed channel members with oppositely-disposed panels on opposite sides thereof.

9. The post of claim 1 wherein the post member comprises a pair of juxtaposed channel members, each channel member comprising a first end and a second end, each of the first end and the second end of the channel member comprising an inwardly-extending tab, and the retainer comprises a pair of retainers extending inwardly from each channel member spaced centrally from the first and second ends of each channel member.

10. The post of claim 9 wherein the pair of retainers each comprise a slotted socket on a distal end thereof.

11. The post of claim 10 and further comprising a retainer panel with a bulbous edge on each end thereof, wherein one of the pair of channel members can be interconnected to the other of the pair of channel members by receiving the bulbous edge of the retainer panel within a corresponding slotted socket on each of the juxtaposed channel members.

12. The post of claim 1 wherein the post member is an extruded article.

13. The post of claim 1 wherein the color of the post can be changed by changing out a first panel for a second panel of different color.

14. The post of claim 1 wherein the post member defines a vertically contiguous central channel.