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(54) **PICKET FOR A RAILING SYSTEM**

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(57) **ABSTRACT**

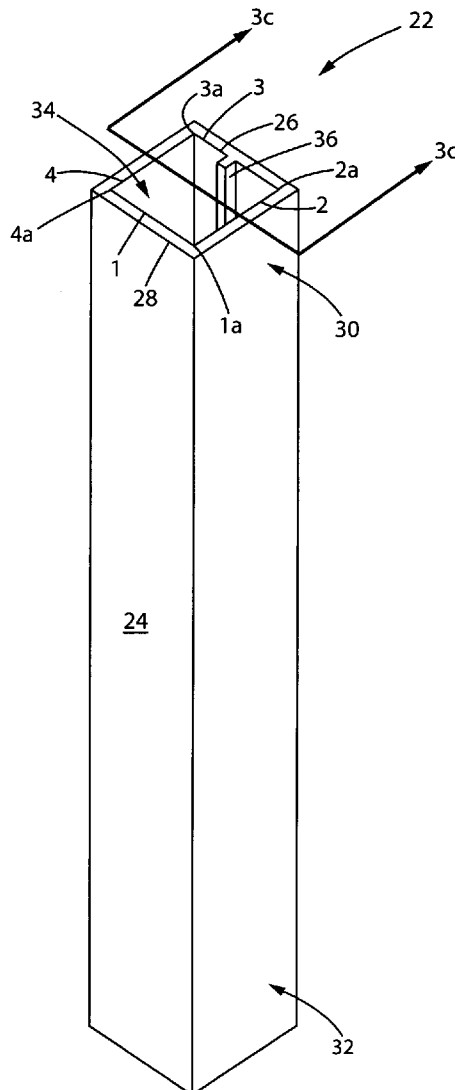
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A picket for a railing system having a top rail and a bottom rail, the picket including an elongated tubular body having inner and outer walls and first and second ends for engaging the top and bottom rails, respectively. The inner wall defines a longitudinal bore through the elongated tubular body from the first end to the second end. The picket includes a reinforcing member connected to and extending away from the inner wall of the elongated tubular body.



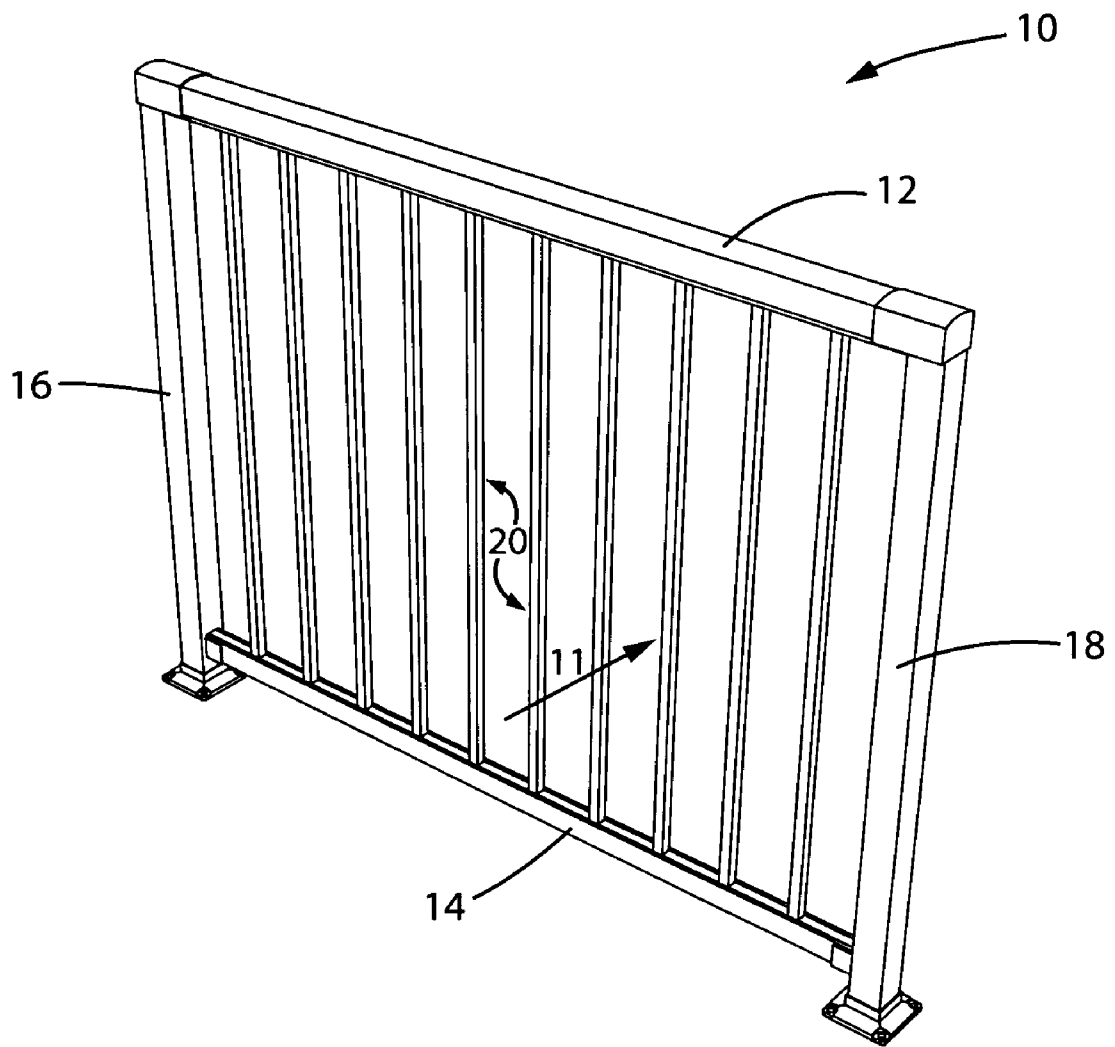


Fig. 1

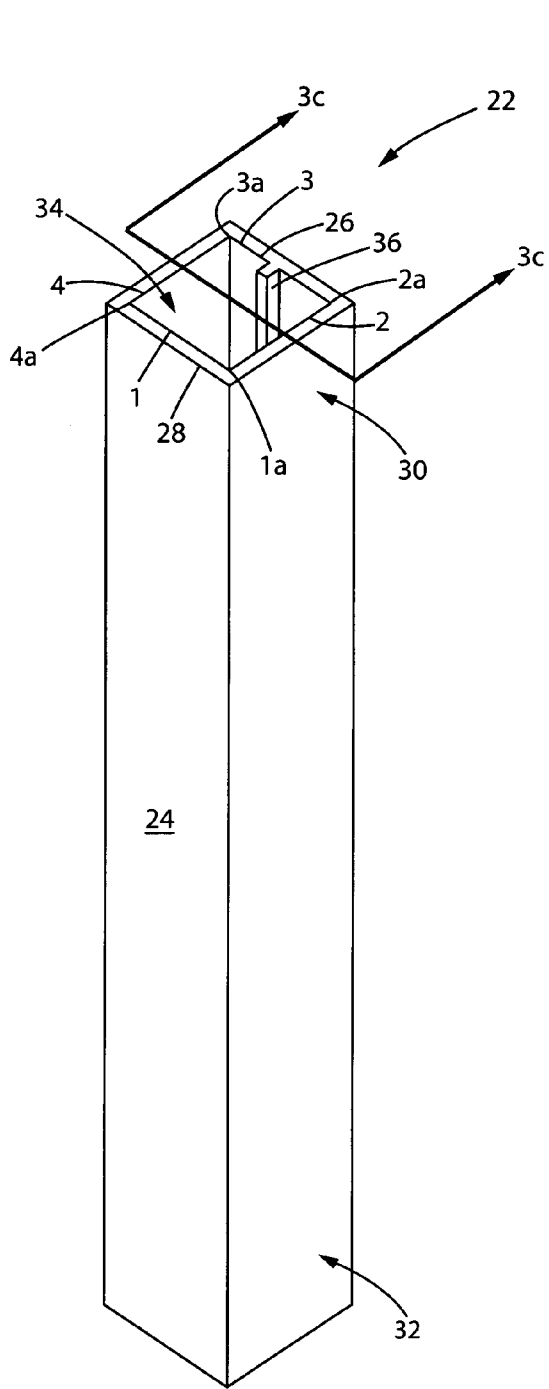


Fig. 2

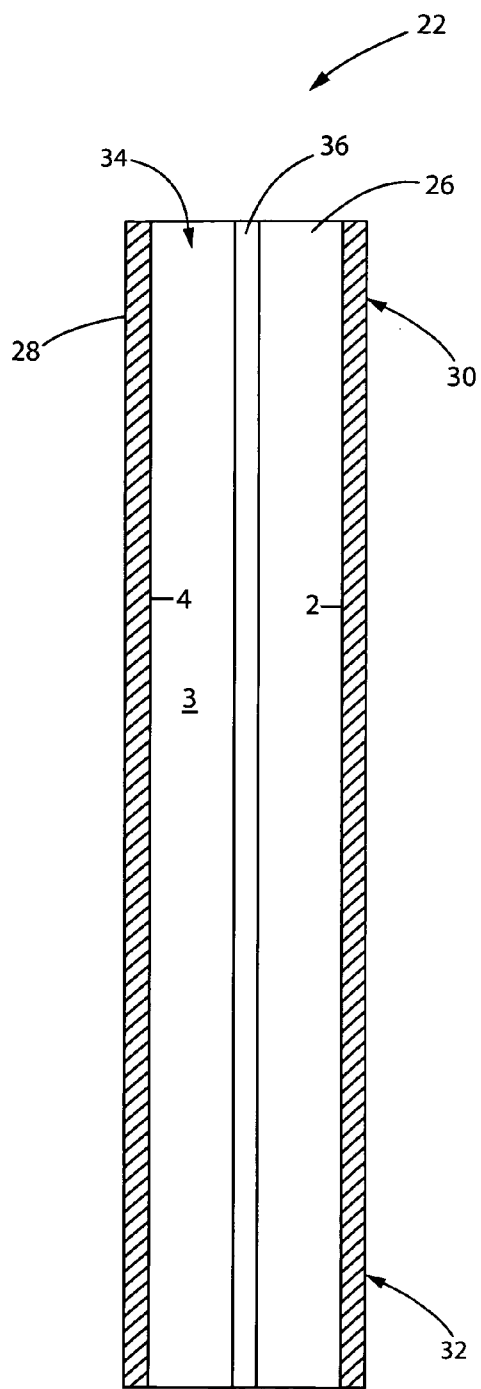


Fig. 3

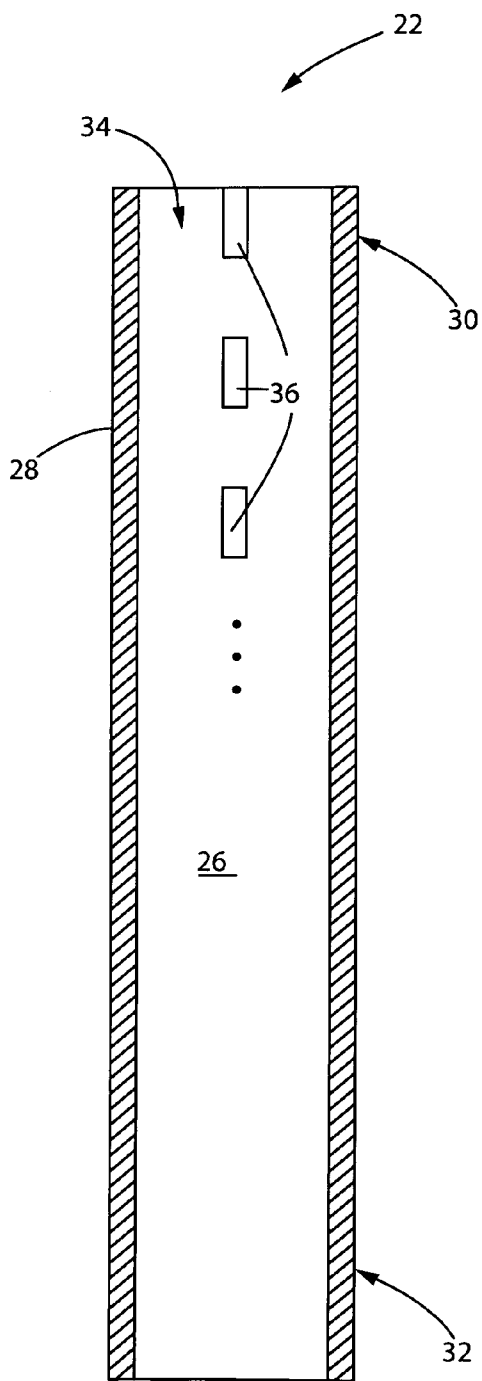


Fig. 4

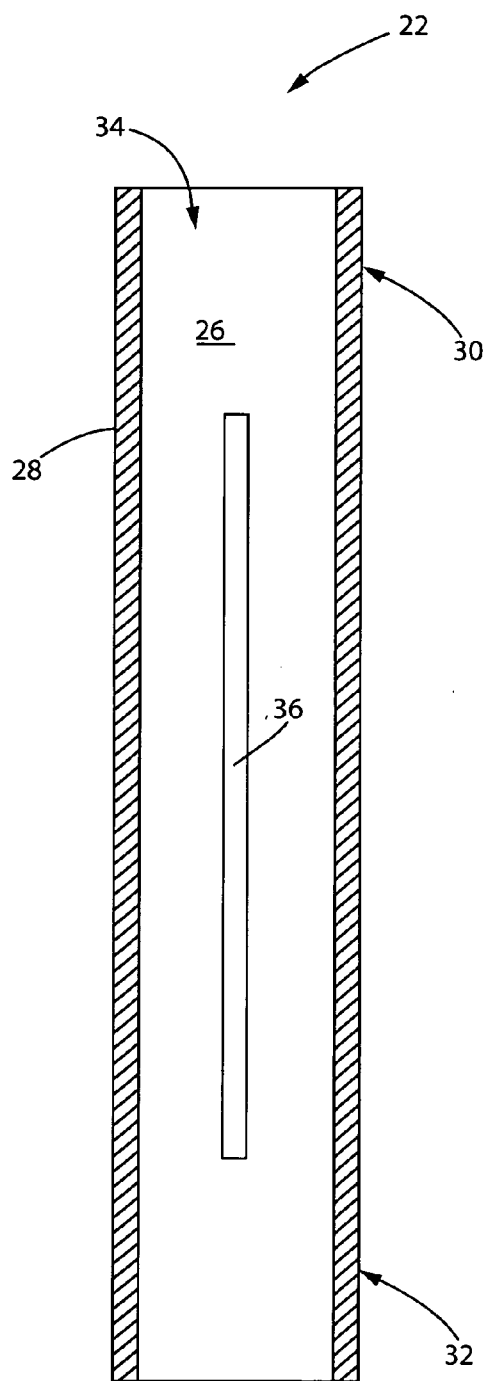


Fig. 5

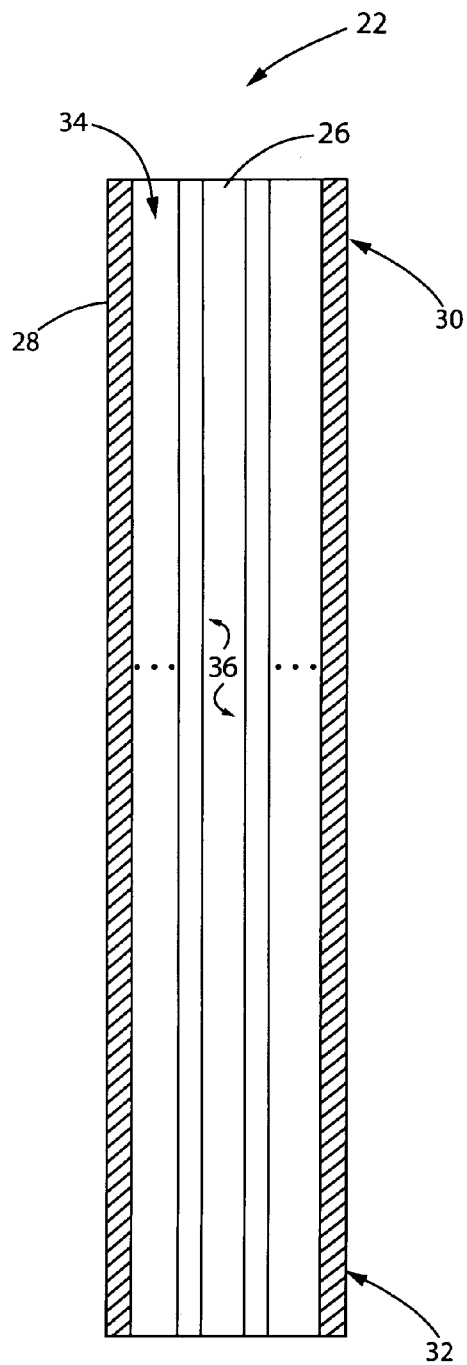


Fig. 6

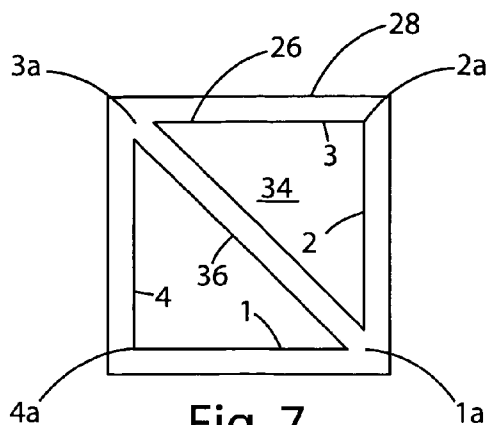


Fig. 7

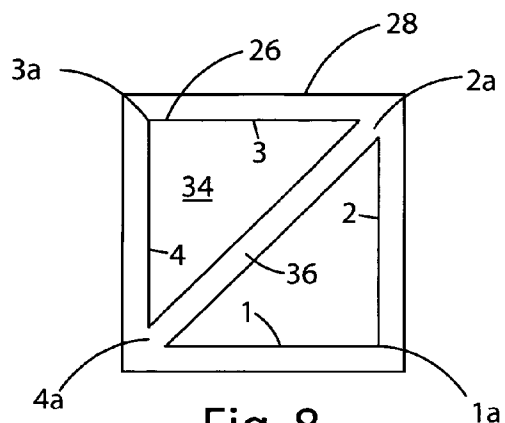


Fig. 8

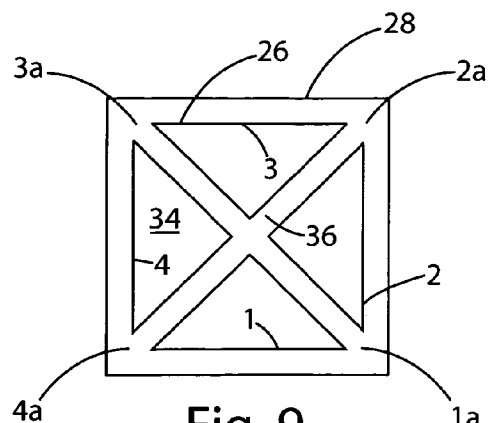


Fig. 9

PICKET FOR A RAILING SYSTEM

FIELD OF THE INVENTION

[0001] The invention relates to the field of railings and in particular to a picket for a railing system.

BACKGROUND OF THE INVENTION

[0002] Railing systems for any number of outdoor applications are well known. For example, residential decks, pool decks, playgrounds, etc., all utilize any number of conventional railing systems. Such railing systems are typically made of pressure treated lumber or aluminum particularly suited for outdoor use.

[0003] Typically, railing systems utilize pickets which engage a top and bottom rail. To save material, pickets are generally tubular in shape with a bore extending from one end of the picket to the other.

[0004] Building codes have been implemented in various jurisdictions throughout the world. Typically, in order to safeguard the public, these codes set minimum performance requirements. One such requirement relates to railing in-fills i.e. pickets. Here, pickets are required to meet certain horizontal load requirements.

[0005] In the past, when such load requirements are applied to traditional pickets, the pickets have been known to fail by either deflecting more than what is allowable under code or by simply disengaging from the top or bottom rails. Consequently, such pickets are undesirable, particularly in the residential railing industry where homeowners frequently install or build their own railing systems.

[0006] Accordingly, a need exists for an improved picket for a railing system which overcomes the deficiencies noted above.

SUMMARY OF THE INVENTION

[0007] According to one aspect of the present invention there is provided a picket for a railing system having a top rail and a bottom rail. The picket may include an elongated tubular body having inner and outer walls and first and second ends for engaging the top and bottom rails, respectively. The inner wall may define a longitudinal bore through the elongated tubular body from the first end to the second end. A reinforcing member may be connected to and extend away from the inner wall of the elongated tubular body.

[0008] The inner wall of the tubular body may include a first, a second, a third and a fourth wall arranged at right angles to one-another to form a first corner, a second corner, a third corner, and a fourth corner.

[0009] The reinforcing member may run longitudinally from the first end of the tubular body to the second end and may span the bore defined by the inner wall. The reinforcing member may extend from the first corner to the third corner, the second corner to the fourth corner, or from the first corner to the third corner and from the second corner to the fourth corner.

[0010] The elongated tubular body or reinforcing member may be comprised of aluminum.

[0011] According to another aspect of the present invention there is provided a picket for a railing system having a

top rail and a bottom rail. The picket may include an elongated tubular body having inner and outer walls and first and second ends for engaging the top and bottom rails, respectively. The inner wall may define a bore through the elongated tubular body from the first end to the second end. A reinforcing member may be connected to and extend away from the inner wall and across the bore defined by the inner wall of the elongated tubular body.

[0012] According to yet another aspect of the present invention there is provided a picket for a railing system having a top rail and a bottom rail. The picket may include an elongated tubular body having inner and outer walls and first and second ends for engaging the top and bottom rails, respectively. The inner wall may define a bore through the elongated tubular body from the first end to the second end. A plurality of reinforcing members may be connected to and extend away from the inner wall of the elongated tubular body. Each of the reinforcing members may run longitudinally from the first end of the tubular body to the second end.

[0013] Other aspects of the invention will be appreciated by reference to the detailed description of the preferred embodiment and to the claims that follow.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The preferred embodiment of the invention will be described by reference to the drawings thereof in which:

[0015] FIG. 1 is a perspective view of a railing system incorporating a picket in accordance with a first embodiment of the present invention;

[0016] FIG. 2 is a perspective view of a representative picket of the railing system of FIG. 1;

[0017] FIG. 3 is a cross sectional view along lines 3c-3c of FIG. 2;

[0018] FIG. 4 is a cross sectional view along lines 3c-3c of FIG. 2 depicting a second embodiment of the picket of FIG. 2;

[0019] FIG. 5 is a cross sectional view along lines 3c-3c of FIG. 2 depicting a third embodiment of the picket of FIG. 2;

[0020] FIG. 6 is a cross sectional view along lines 3c-3c of FIG. 2 depicting a fourth embodiment of the picket of FIG. 2;

[0021] FIG. 7 is a top plan view of a fifth embodiment of the picket of FIG. 2;

[0022] FIG. 8 is a top plan view of a sixth embodiment of the picket of FIG. 2; and

[0023] FIG. 9 is a top plan view of a seventh embodiment of the picket of FIG. 2

DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

[0024] Reference will now be made in detail to the presently preferred embodiments of the invention, one or more examples of which are illustrated in the drawings. Each example is provided by way of explanation of the invention, and not meant as a limitation of the invention. For example, features illustrated or described as part of one embodiment can be used on another embodiment to yield still a third

embodiment. It is intended that the present invention include such modifications and variations as come within the scope and spirit of the present invention.

[0025] Referring to FIG. 1, a railing system 10 is generally shown including top and bottom rails 12 and 14 and end posts 16 and 18. The railing system 10 includes pickets 20. To determine whether an infill or picket will meet local building code requirements, a horizontal load along line 11 is generally applied to the infill.

[0026] FIG. 2 illustrates a representative picket 22. Picket 22 comprises an elongated tubular body 24 having inner 26 and outer 28 walls and first 30 and second 32 ends for engaging the top and bottom rails 12 and 14, respectively.

[0027] In this embodiment, inner wall 26 is comprised of a first 1, a second 2, a third 3 and a fourth 4 wall arranged at right angles to one-another. First 1 and second 2 walls form a first corner 1a, second and third walls form a second corner 2a, third 3 and fourth 4 walls form a third corner 3a, and fourth 4 and first 1 wall form a fourth corner 4a. As those skilled in the art will appreciate the cross-sectional shape of the picket as viewed from an end may be a circle, oval or any other particular shape suitable for a picket.

[0028] Referring to FIGS. 2 and 3 the inner wall 26 defines a longitudinal bore 34 running through the length of elongated tubular body 24 from the first end 30 to said second end 32.

[0029] To meet certain building code requirements a reinforcing member 36 is connected to and extends away from the inner wall 26 of the elongated tubular body 24. Reinforcing member 36 may be connected to the inner wall 26 via welding. Preferably, reinforcing member 36 is integrally formed with elongated tubular body 24 via extrusion for instance or by other means known in the art. As shown in FIG. 3, reinforcing member 36 may run the entire length of elongated tubular body 24 from the first end 30 to the second end 32 of the tubular body.

[0030] Depending upon local building code horizontal load requirements, several reinforcing members 36 may be applied along inner wall 26 at various strategic positions. For example, as shown in FIG. 4, when a picket is expected to withstand a low horizontal load requirement, a reinforcing member running the length of the picket may not be required. To save material while still meeting horizontal load requirements, it may be advantageous to utilize multiple reinforcing members 36 placed in a staggered linear fashion along inner wall 26. Alternatively, as illustrated in FIG. 5, a reinforcing member 36 may simply be connected to the middle region of the picket 22 where bending forces may be more pronounced.

[0031] On the other hand, as illustrated in FIG. 6, when local building codes require a picket to meet a high horizontal load requirement, multiple parallel reinforcing members 36 may be used along inner wall 26. Depending on local building code requirements, as those skilled in the art will appreciate, any combination or length of reinforcing members may be used.

[0032] When additional reinforcement of a picket is required, reinforcing member 36 may span the bore 34. For example, as illustrated in FIGS. 7 and 8, respectively, reinforcing member 36 may extend from the first corner 1a

to the third corner 3a or from the second corner 2a to the fourth corner 4a. For even greater internal support, as illustrated in FIG. 9, reinforcing member 36 may extend from the first corner 1a to the third corner 3a and from the second corner 2a to the fourth corner 4a to form an X pattern.

[0033] It should be appreciated by those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope or spirit of the invention. It is intended that the present invention include such modifications and variations as come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A picket for a railing system having a top rail and a bottom rail, the picket comprising:

an elongated tubular body having inner and outer walls and first and second ends for engaging the top and bottom rails, respectively, said inner wall defining a longitudinal bore through said elongated tubular body from said first end to said second end; and

a reinforcing member connected to and extending away from said inner wall of said elongated tubular body.

2. The picket of claim 1 wherein said reinforcing member runs longitudinally from said first end of said tubular body to said second end.

3. The picket of claim 1 wherein said reinforcing member spans said bore defined by said inner wall.

4. The picket of claim 1 wherein said inner wall of said tubular body comprises a first, a second, a third and a fourth wall arranged at right angles to one-another, said first and second wall forming a first corner, said second and third wall forming a second corner, said third and fourth wall forming a third corner, and said fourth and first wall forming a fourth corner.

5. The picket of claim 4 wherein said reinforcing member extends from said first corner to said third corner.

6. The picket of claim 4 wherein said reinforcing member extends from said second corner to said fourth corner.

7. The picket of claim 4 wherein said reinforcing member extends from said first corner to said third corner and from said second corner to said fourth corner.

8. The picket of claim 1 wherein said elongated tubular body is comprised of aluminum.

9. The picket of claim 1 wherein said reinforcing member is comprised of aluminum.

10. A picket for a railing system having a top rail and a bottom rail, the picket comprising:

an elongated tubular body having inner and outer walls and first and second ends for engaging the top and bottom rails, respectively, said inner wall defining a bore through said elongated tubular body from said first end to said second end; and

a reinforcing member connected to and extending away from said inner wall and across said bore defined by said inner wall of said elongated tubular body.

11. The picket of claim 10 wherein said reinforcing member runs longitudinally from said first end of said tubular body to said second end.

12. The picket of claim 10 wherein said inner wall of said tubular body comprises a first, a second, a third and a fourth wall arranged at right angles to one-another, said first and

second wall forming a first corner, said second and third wall forming a second corner, said third and fourth wall forming a third corner, and said fourth and first wall forming a fourth corner.

13. The picket of claim 11 wherein said reinforcing member extends from said first corner to said third corner.

14. The picket of claim 11 wherein said reinforcing member extends from said second corner to said fourth corner.

15. The picket of claim 11 wherein said reinforcing member extends from said first corner to said third corner and from said second corner to said fourth corner.

16. The picket of claim 10 wherein said elongated tubular body is comprised of aluminum.

17. The picket of claim 10 wherein said reinforcing member is comprised of aluminum.

18. A picket for a railing system having a top rail and a bottom rail, the picket comprising:

an elongated tubular body having inner and outer walls and first and second ends for engaging the top and

bottom rails, respectively, said inner wall defining a bore through said elongated tubular body from said first end to said second end; and

a plurality of reinforcing members connected to and extending away from said inner wall of said elongated tubular body, each of said reinforcing members running longitudinally from said first end of said tubular body to said second end.

19. The picket of claim 18 wherein each of said plurality of reinforcing members span said bore defined by said inner wall.

20. The picket of claim 18 wherein said elongated tubular body is comprised of aluminum.

21. The picket of claim 18 wherein each of said plurality of reinforcing members is comprised of aluminum.

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