A modular fence system that eliminates the pervasive problem of a sagging bottom rail due to the cumulative weight of the pickets bearing downwardly thereon and that does so without additional labor or material costs. A double tongue and groove structure along the vertical edges of each of the fence pickets facilitates interlocking engagement between adjoining pickets that prevents sliding vertical movement therebetween. Thus, the weight of a panel of joined together vertical fence pickets bears only at the ends of the bottom rail, into which the panel of pickets is positioned, at its two points of attachment to adjacent posts.
PICKETS FOR USE IN MODULAR FENCE SYSTEMS

REFERENCE TO RELATED APPLICATION

[0001] This application is related to the subject matter of a design application entitled FENCE PICKET filed on the same date by the same inventor, the subject matter of which is incorporated herein by reference.

BACKGROUND AND SUMMARY OF THE INVENTION

[0002] This invention relates generally to modular fence systems utilizing extruded plastic resin members and, more particularly, to a plank or picket member arranged to interlockably engage adjacent other ones of such picket members to form a solid panel portion of the fence system.

[0003] Modular fence systems utilizing various types of extruded plastic components have enjoyed significant increases in popularity among homeowners and businesses during the past several years. These fences have generally been favorably accepted by users as being more attractive and weather resistant than traditional wood fencing.

[0004] Representative of such prior art plastic fence systems is that described in U.S. Pat. No. 6,202,987 to Forbes, which utilizes spaced apart posts, top and bottom rail members horizontally supported parallel to each other between a pair of adjacent posts, and a plurality of fence planks or pickets vertically positioned against one another within open channels of the top and bottom rail members to thereby form a solid privacy panel between each pair of fence posts.

[0005] A significant disadvantage associated with this and other prior art plastic fence systems is the inescapable eventual sagging of the bottom rail which supports the entire weight of the vertically positioned pickets that form the privacy panel between adjacent posts. Attempts at solving this unsightly problem, which also adversely affects the structural integrity of the fence, have taken different forms. Some attempted solutions utilize a metal insert positioned in the open channel of the bottom rail to help support the weight of the pickets. The Forbes reference cited above teaches the use of plank projections protruding outwardly near the ends of each plank or picket to engage channel projections formed in the open channels of the upper and lower fence rails in an attempt to more evenly distribute the weight of the pickets between the top and bottom rails. Without exception, all of the prior art attempts at solving the sagging rail problem are cumbersome and require additional costly materials and labor in their implementation.

[0006] It would therefore be advantageous to provide a modular fence system that eliminates the pervasive problem in the prior art of a sagging bottom rail due to the collective weight of the pickets bearing downwardly thereon and that does so without additional labor or material costs.

[0007] In accordance with the illustrated preferred embodiment of the present invention, the weight of a panel of joined together vertical fence pickets bears only at the ends of the bottom rail at its two points of attachment to adjacent posts. This is accomplished by providing double tongue and groove structures along the left and right edges of each of the fence pickets to facilitate interlocking engagement between adjoining pickets that prevents sliding vertical movement therebetween.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is a top end plan view of a fence picket constructed in accordance with the present invention.

[0009] FIG. 2 is a bottom end plan view of the fence picket of FIG. 1.

[0010] FIG. 3 is a pictorial diagram of portions of two of the fence pickets of FIGS. 1 and 2, illustrating their positions prior to being moved into side-by-side interlocking engagement with each other.

[0011] FIG. 4 is a pictorial diagram illustrating the interlocked positions of the two fence pickets of FIG. 3.

[0012] FIG. 5 illustrates the details of the interlocking connection of the two fence pickets of FIG. 4.

DETAILED DESCRIPTION OF THE INVENTION

[0013] Referring now to FIGS. 1 and 2, there are shown top and bottom end views, respectively of a fence picket 10, in accordance with the present invention. Fence picket 10, of chosen length, may be fabricated from any of the many commercially available plastic resin materials using extrusion molding processes well known in the plastics industry. Fence picket 10 has a first face wall 12, an opposing second face wall 14, and a generally hollow interior therebetween.

A plurality of internal web walls 16 are disposed between face walls 12, 14 to provide structural support thereof in accordance with accepted plastic molding techniques. Like indentations or grooves 18 in face walls 12, 14 that extend the entire length of the picket 10 are provided at the midway point in the width thereof to enhance the aesthetic appearance of fence picket 10. Picket 10 has preferred cross-sectional dimensions of one inch by eight inches, but, observed from a distance, the indentations 18 produce the appearance of two four-inch wide pickets.

[0014] Referring additionally to FIGS. 3-5, it may be seen that the left edge of picket 10 is formed to include a pair of elongate hollow protrusions or tongues 30, 32 that extend the entire length of picket 10. Tongue 30 is formed proximate face wall 12, while tongue 32 is formed proximate face wall 14. Tongues 30, 32 are arc-shaped at their distal ends. An internal web wall 33 spans each of the tongues 30, 32 at inner ends thereof in order to provide structural support therefor. The elongate space between tongues 30, 32 forms a central groove 34 midway between face walls 12, 14. An arcuate wall 35 serves to terminate groove 34 at its inner end. It may also be seen that the right edge of picket 10 is formed to include a single elongate, hollow protrusion or tongue 40 that also extends the entire length of picket 10 and is positioned midway between face walls 12, 14. Tongue 40 is arc-shaped at its distal end, which extends beyond the right edges of face walls 12, 14. An internal web wall 41 spans tongue 40 at an inner end thereof for purposes of structural support. The elongate spaces on either side of tongue 40 form a pair of grooves 42, 44 proximate face walls 12, 14, respectively. Arcuate walls 46, 48 serve as the inner termini of grooves 42, 44, respectively.
In order to assemble a plurality of fence pickets to form a solid privacy panel for use in a fence system utilizing top and bottom rails supported between two posts, they are first aligned as illustrated in FIG. 3. Adjacent ones of fence pickets are then brought together such that tongue 40 of the left one of the pickets is inserted into groove 34 of the right one of the pickets, as illustrated in FIGS. 4 and 5. The frictional engagement between tongues 30, 32, 40, and grooves 34, 42, 44 serves to securely retain adjacent ones of the fence pickets in the joined, interlocked position shown in FIG. 4. In contrast to the single tongue and groove arrangement of prior art fence pickets, the double tongue and groove structure of the fence pickets constructed in accordance with the present invention results in a considerable increase in the surface area of frictional contact between the joined fence pickets. This results in a much more secure connection that prevents longitudinal sliding movement between any of the joined fence pickets. As previously stated, the resulting panel formed by a plurality of joined fence pickets bears only at the points of attachment to posts of a conventional bottom rail into which the panel is inserted. Undesirable sagging of the bottom rail, as routinely occurs in prior art fence systems, is thus prevented.

It is to be understood that the structural arrangements described herein are only illustrative of the application of the principles of the present invention. Numerous modifications and alternative arrangements may be devised by those skilled in the art without departing from the spirit and scope of the present invention. The appended claims are intended to cover such modifications and alternative arrangements.

1 claim:

1. A fence picket having a desired length, the fence picket comprising:
   a front face wall;
   an opposing rear face wall spaced a desired distance behind said front face wall and parallel thereto;
   a left edge of said fence picket, between said front and rear face walls, being formed to provide a pair of elongate outwardly projecting tongues extending the entire length of said fence picket, a space between said pair of tongues forming a single central groove midway between said front and rear face walls; and
   a right edge of said fence picket, between said front and rear face walls, being formed to include a single elongate outwardly projecting tongue midway between said front and rear face walls and extending the entire length of said fence picket, elongate spaces on either side of said single tongue forming a pair of grooves, one of which is proximate said front face wall and the other of which is proximate said rear face wall.

2. A fence picket as in claims 1, wherein the space between said front and rear face walls is substantially void.

3. A fence picket as in claim 1, further comprising a plurality of internal web walls between said front and rear face walls.

4. A fence picket as in claim 1, wherein said front and rear face walls include an elongate groove formed therein, said groove extending lengthwise along said fence picket.

5. A fence picket as in claim 1, wherein each of said pair of tongues formed in said left edge of said fence picket is arc-shaped at a distal end thereof.

6. A fence picket as in claim 5, further comprising an arcuate wall forming an inner terminus of said central groove between said pair of tongues.

7. A fence picket as in claim 1, wherein said single tongue formed in said right edge of said fence picket is arc-shaped at a distal end thereof.

8. A fence picket as in claim 7, further comprising an arcuate wall forming an inner terminus of each of said pair of grooves on either side of said single tongue.

9. A method for assembling a plurality of fence pickets in side by side relationship to form a fence panel, comprising:

   providing a plurality of pickets of desired length, each of the pickets having a front face wall and an opposing rear face wall spaced a desired distance behind said front face wall and parallel thereto, a left edge of each of said fence pickets, between said front and rear face walls, being formed to provide a pair of elongate outwardly projecting tongues extending the entire length of said picket, a space between said pair of tongues forming a single central groove midway between said front and rear face walls, a right edge of each of said fence pickets, between said front and rear face walls, being formed to include a single elongate outwardly projecting tongue midway between said front and rear face walls and extending the entire length of said fence picket, elongate spaces on either side of said single tongue forming a pair of grooves, one of which is proximate said front face wall and the other of which is proximate said rear face wall;

   aligning said plurality of fence pickets in side by side relationship, with said right edge of one of said plurality of fence pickets abutting said left edge of an adjacent one of said plurality of fence pickets; and

   inserting said single tongue on said right edge of said one of said plurality of fence pickets into said single groove between said pair of grooves on said left side of said adjacent one of said plurality of fence pickets to thereby effect interlocking engagement of said single tongue and said pair of grooves on said right edge of said one of said plurality of fence pickets with said single groove and said pair of tongues on said left side of said adjacent one of said plurality of fence pickets.

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