United States Patent [19]

Mann

[11] **3,892,387**

[45] **July 1, 1975**

[54] **FENCE STRUCTURE**

[76] Inventor: **William C. Mann**, P.O. Box 263, Broken Arrow, Okla. 74012

[22] Filed: **Dec. 29, 1972**

[21] Appl. No.: **319,216**

[52] **U.S. Cl.** **256/24**; 256/19

[51] **Int. Cl.** **E04h 17/14**

[58] **Field of Search** 256/24, 21, 22, 25, 26, 256/19

[56] **References Cited**

UNITED STATES PATENTS

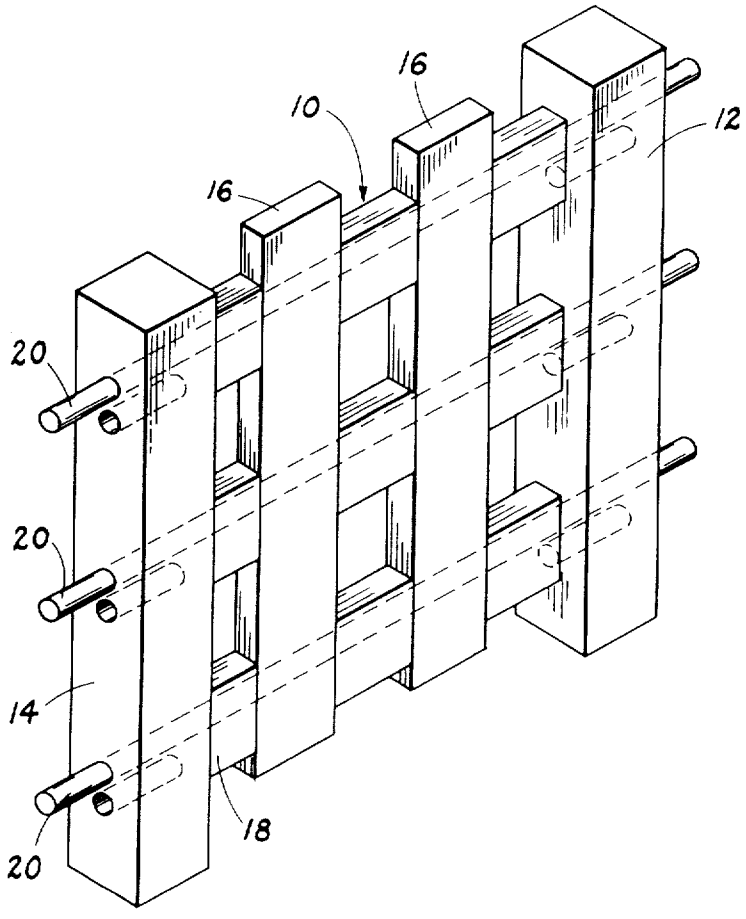
328,392	10/1885	Dudley	256/21 UX
2,662,739	12/1953	Fisher et al.	256/22 UX
2,721,727	10/1955	Eddy	256/19 X
3,700,213	10/1972	Blease	256/59 X

Primary Examiner—Dennis L. Taylor
Attorney, Agent, or Firm—William S. Dorman

[57] **ABSTRACT**

A board-type fence which is of a substantially identical appearance on both sides and which eliminates the need for nails in the construction thereof. The fence comprises a plurality of fence sections having end posts with a plurality of slats or picket members interposed therebetween and secured together by means of elongated rod members extending between the posts and transversely through the intermediate slats. Each fence section is secured to adjacent fence sections in side by side, or end to end relation to provide a fence structure of the desired length without the use of nails for holding the fence elements in place.

1 Claim, 9 Drawing Figures



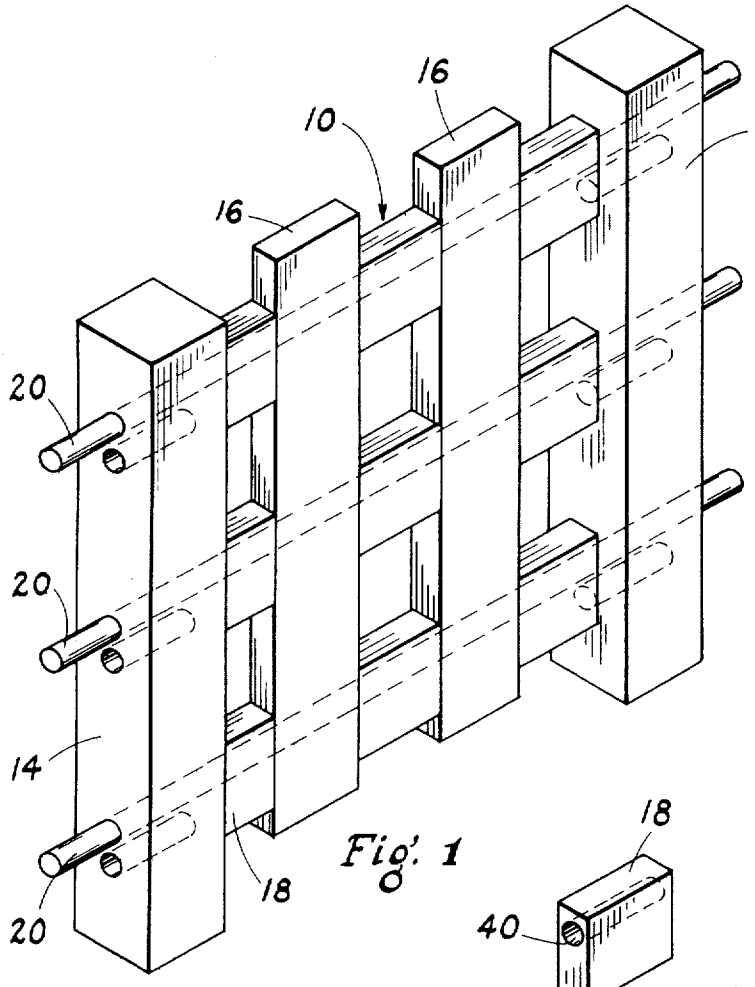


Fig. 1

Fig. 2

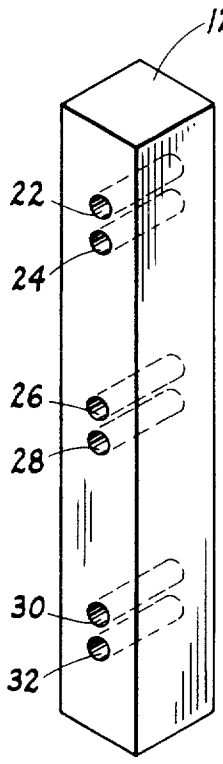


Fig. 3

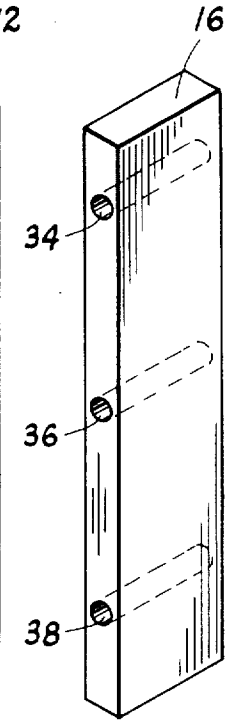


Fig. 4

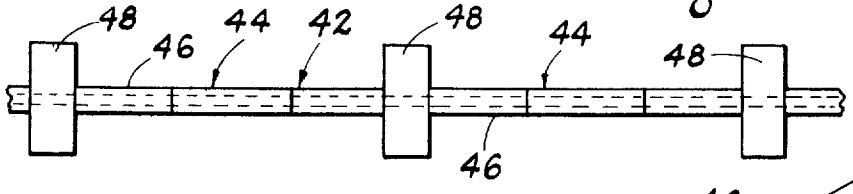


Fig. 6

Fig. 5

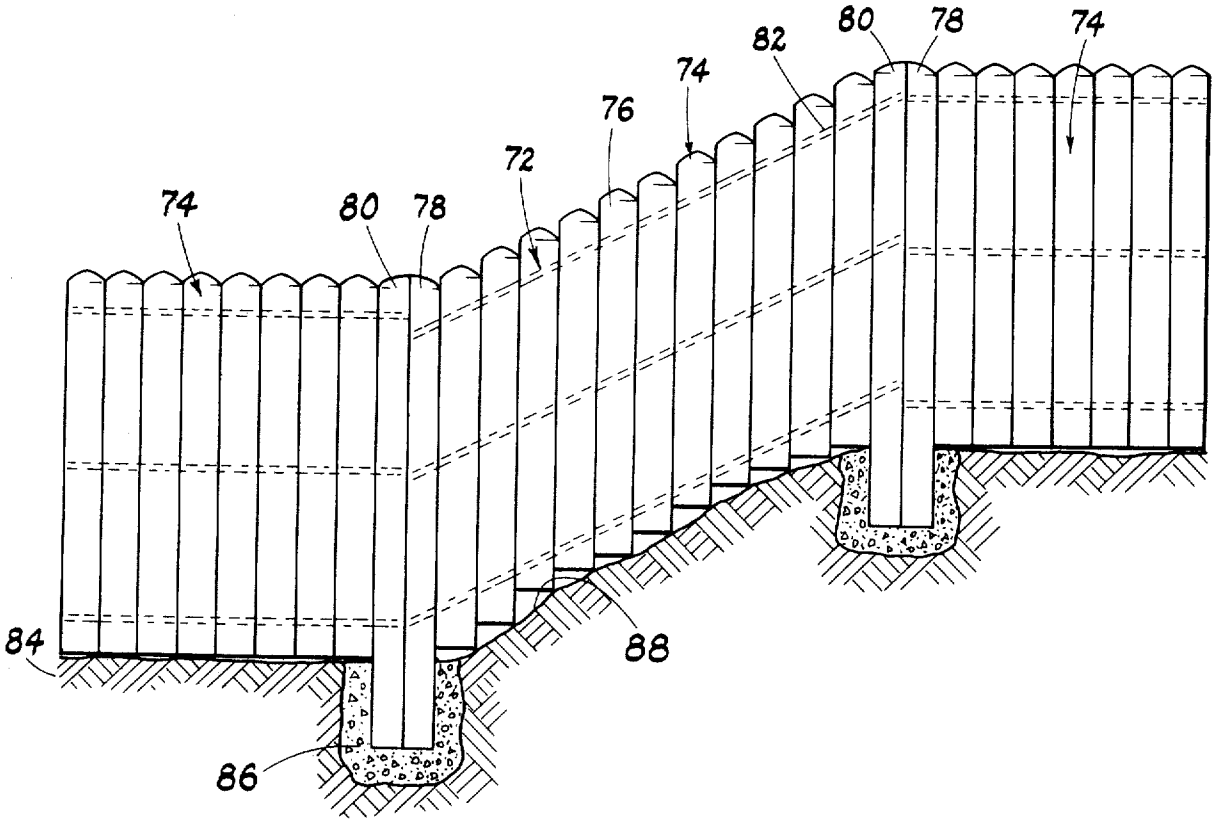


Fig. 8

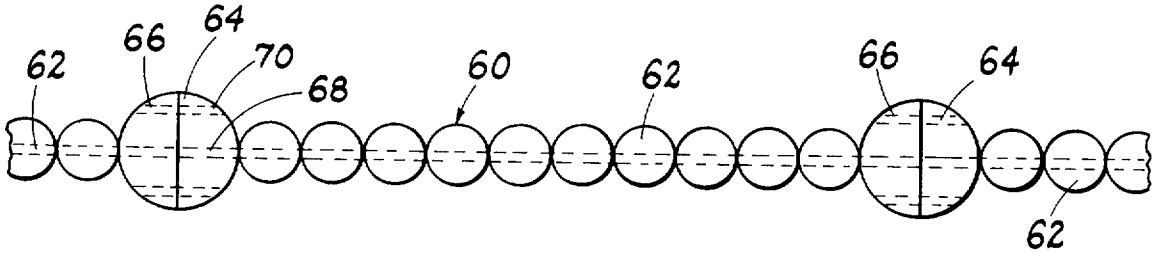


Fig. 7

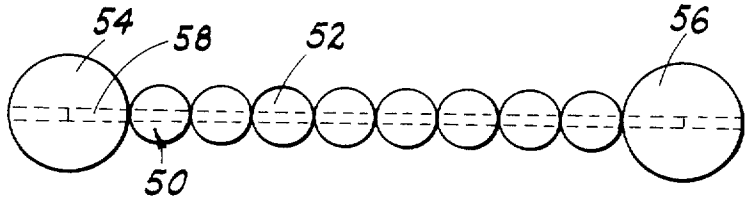


Fig. 9

FENCE STRUCTURE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to improvements in fence structures and more particularly, but not by way of limitation, to a nailess fence structure of a substantially identical appearance on both sides thereof.

2. Description of the Prior Art

Wood or board fences are in widespread use today, and usually comprises a plurality of vertically spaced horizontally extending boards secured to one face or side of the fence for securing the usual upright fence slats or pickets together. As a result, one side of the fence is substantially unencumbered, and of a relatively attractive appearance whereas the other face or side is unsightly. The upright fence elements or slats are usually secured to the horizontally extending boards by nails, or the like, and normally weathering causes the nails to rust, and the rust or corrosion of the nails frequently stains or otherwise mars the appearance of the said attractive side. In addition, the horizontally extending boards provide a "ladder" type structure on one side of the fence which small children may climb, which not only enables them to scale the fence, but also frequently results in mishaps which cause personal injury to the child.

SUMMARY OF THE INVENTION

The present invention contemplates a novel fence structure particularly designed and constructed for overcoming the foregoing disadvantages. The novel fence is of a substantially identical attractive appearance on both sides, and is assembled or secured together in a manner which compeltely eliminates the need for nails, and the like. The fence structure comprises a plurality of fence sections secured together in a side by side or end to end relationship for providing a fence of substantially any desired length and for substantially any surface contour of the area being fenced. Each fence section comprises a pair of end posts having a plurality of fence elements, slats or pickets interposed therebetween, with all of the elements and posts being secured together by elongated rod members which extend transversely through the fence elements and which are encased therein, thus reducing or substantially eliminating any staining or other marring of the attractive faces of the fence structure. Furthermore, the connecting rod means eliminates the need for horizontally extending board members as used in present day fences of this type, and thus eliminates the "ladder" type construction and the inherent disadvantages thereof. The novel fence structure is of a simple and economical construction.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a fence section embodying the invention, with portions depicted in dotted lines for purposes of illustration.

FIG. 2 is a perspective view of a fence element utilized in the fence section shown in FIG. 1.

FIG. 3 is a perspective view of a fence end post as used in the fence section shown in FIG. 1.

FIG. 4 is a perspective view of a fence slat utilized in the fence structure shown in FIG. 1.

FIG. 5 is a broken perspective view of a fence structure assembled from modified fence sections embodying the invention.

FIG. 6 is a top view of the fence structure shown in FIG. 5.

FIG. 7 is a top view of a modified fence structure.

FIG. 8 is a front view of a modified fence structure erected on a contoured surface.

FIG. 9 is a top view of still further modified fence structure.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings in detail, and particularly FIGS. 1 through 4, reference character 10 generally indicates a fence section comprising a pair of spaced substantially indentical end post members 12 and 14 having a plurality of upright slat or picket members 16 interposed therebetween and spaced apart by a plurality of spacer blocks 18. Of course, it will be apparent that substantially any desired number of the pickets 16 may be interposed between the posts 12 and 14. However, for purposes of illustration, two of the pickets 16 are shown in FIG. 1. In addition, substantially any desired number of the spacer blocks 18 may by longitudinally spaced between adjacent pairs of the pickets 16 and between the pickets 16 and the respective end posts 12 and 14, but for purposes of illustration, three longitudinally spaced blocks 18 are interposed between the adjacent pickets 16 in FIG. 1. The pickets 16 and block member 18 are secured between the posts 12 and 14 by a plurality of rod members 20 in a manner as will be hereinafter set forth.

Each post 12 and 14 is substantially identical and only one of the posts will be described in detail herein. The post 12 is provided with a first bore 22 extending transversely therethrough, and a second bore 24 spaced slightly from the first bore 22 and extending transversely through the post 12 in substantially parallel relation to the bore 22. A second similar pair of bores 26 and 28 are spaced from the first pair of bores 22 and 24, and are preferably disposed substantially in the center of the post 12, as particularly shown in FIG. 3. The bores 26 and 28 extend transversely through the post 12 in substantially mutually parallel relationship with each other and with the bores 22 and 24. A third pair of bores 30 and 32 are spaced from the bores 26 and 28 and extend through the post 12 substantially parallel with respect to the bores 26 and 28. The spacing between the complementary pair of bores 22 and 24 is substantially identical with the spacing between the complementary pair of bores 26 and 28, and between the complementary pair of bores 30 and 32. Thus, the interval or spacing between the bores 22, 26 and 30 is substantially identical with the spacing between the bores 24, 28 and 32, for a purpose as will be hereinafter set forth.

Each picket 16 as shown herein is provided with a plurality of longitudinally spaced bores 34, 36 and 38 extending transversely therethrough as particularly shown in FIG. 4. The spacing between the bores 34, 36 and 38 is substantially identical with the spacing between the bores 22, 26 and 38, or between the bores 34, 38 and 32, whereby the pickets 16 may be selectively aligned with the posts 12 and 14 in such a manner that the group of bores of the pickets are in substantial axial alignment with either the group of bores 22, 26

and 30, or with the group of bores 24, 28 and 32, for a purpose as will be hereinafter set forth.

Each block 18 is provided with a bore 40 extending transversely therethrough, as particularly shown in FIG. 2. The blocks 18 may be interposed between adjacent pickets 16, or between a picket 16 and the respective post 12 or 14 in such a manner that the bore 40 of the block 18 is in alignment with a preselected bore 34, 36 or 38 of the picket, for a purpose as will be hereinafter set forth.

In order to assemble the posts 12 and 14 with the desired number of pickets 16 and blocks 18 to provide a fence section 10, a rod member 20 is inserted in one of the group of bores of one of the posts, for example in the bores 22, 26 and 30 of the post 12. A block 18 may then be disposed on each rod 20 by inserting each rod 20 through the bore 40 of the respective block 18, and the blocks 18 may be moved along the rods 20 into a position adjacent the post 12. A picket 16 may then be disposed on the rods 20 by inserting the rods through a group of the bores, such as the bores 22, 26 and 30 of the picket 16. The picket 16 may then be moved along the rods 20 for disposition against the blocks 18 previously disposed on the rods. The operation may be continued until the desired number of pickets 16 and blocks 18 have been disposed on the rods 20, and the post 14 may be disposed on the rods 20 in a manner similar to the post 12, and moved to a position adjacent the outermost blocks 18, as shown in FIG. 1. In this manner, a fence section 10 may be assembled, and as many of these sections may be similarly assembled as required to construct or erect a fence. The opposite ends of the rods 20 project or extend beyond the outer faces of the posts 12 and 14 for facilitating the assembly of adjacent fence sections 10 for the construction or erection of a complete fence structure.

For facilitating the erecting of a complete fence structure, it is preferable that alternate fence sections 10 be assembled in such a manner that the rods 20 are inserted or extend through the alternate group of bores with respect to the adjacent fence sections 10. For example, the rods 20 of one fence section 10 are preferably disposed through the bores 22, 26 and 30 of the posts 12 and 14, and the rods 20 of the adjacent fence sections are preferably disposed through the bores 24, 28 and 32 of the posts 12 and 14. Thus, in order to assemble one fence section 10 in a side by side or end to end relation with an adjacent fence section 10, the end rods 20 of one section 10 which protrude from the posts 12 and 14 thereof may be inserted into the non-occupied or empty bores of the posts 12 and 14 of the adjacent fence section. For example, the outer ends of the rods 20 of one section 10 may be inserted into the bores 22, 26 and 30 of the adjacent post 12 or 14 while the outer ends of the rods 20 of the second fence section 10 may be inserted into the bores 22, 26 and 30 of the adjacent post 12 or 14 while the outer ends of the rods 20 of the second fence section may be inserted into the bores 24, 28 and 32 of the post 12 or 14 of the first fence section 10.

Of course, it will also be apparent that each fence section 10 may be assembled with only one fence post, such as the post 12, provided thereon, with opposite end of the fence section 10 being provided with suitable locking means (not shown) for temporarily securing the pickets 16 and blocks 18 in the assembled position with the post 12. The post 12 of the next adjacent fence section 10 may then be secured to the outermost blocks 18 by removing the said locking means and inserting the rods 20 into the respective bores of the post 12 as hereinbefore set forth. In this manner, a fence structure may be erected of substantially any desired length with only a single post between each of the fence sections 10. When a single post is used between the fence sections it may be desirable to insert dowell pins or the like (not shown) into the post between the corresponding rods and perpendicular with respect thereto for wedging the rods securely in the posts.

When it is desired to provide a corner or turning point for the fence, a corner post (not shown) generally similar to the posts 12 and 14 may be provided, but having bores extending therethrough in mutually perpendicularly arranged disposition for receiving the rods of adjacent fence sections therein in a manner wherein one fence section may be disposed at an angle of approximately ninety degrees with respect to the other fence section. Alternately, of course, two substantially identical posts, such as the posts 12 and 14, may be disposed in side by side relation with the bores of one post being disposed substantially perpendicularly with respect to the bores of the other post. In this manner, two adjacent fence sections 10 may be erected in substantially mutually perpendicular relationship.

It will be readily apparent that a fence of substantially any length for surrounding an area of substantially any contour may be quickly and easily erected by assembling the required fence sections 10 in the manner as hereinbefore set forth. No nails are required for the construction of the fence, and the connecting rod members are embedded within the fence elements, thus substantially eliminating staining or otherwise marring the beauty of the fence structure from rust or other corrosion. In addition, both sides of the completed fence are substantially identical in appearance, thus providing a fence having attractive sides on both faces thereof. Of course, it is preferable that the rods 20 be constructed from 3/16 inch diameter galvanized material, but any suitable material and size may be used for the rods 20.

Referring now to FIGS. 5 and 6, a modified fence structure generally indicated at 42 is shown which may be assembled or constructed from a plurality of fence sections 44. The fence sections 44 are substantially identical and each comprises a plurality of picket members 46 interposed between a pair of post members 48. The picket members 46 may be in the form of flat boards, preferably that commonly known as a 1 inch × 4 inches, but not limited thereto. The post members 48 may be similar flat board members disposed at substantially right angles with respect to the picket members 46. The posts 48 are provided with bores (not shown) similar to the bores provided in the posts 12 and 14, and the pickets 46 are provided with bores (not shown) similar to the picket member 16. The pickets 46 may be assembled with the posts 48 and secured therewith by rod members (not shown) similar to the rods 20, and in a manner similar to that hereinbefore set forth.

Referring now to FIG. 9, still another modified fence section generally indicated at 50 is shown which may be assembled in end to end or side by side relation to provide a complete fence structure. The section 50 comprises a plurality of logs 52, or the like, disposed adjacent one another in tangential relation and interposed between a pair of spaced relatively large logs or

poles 54 and 56. The poles 54 and 56 are provided with bores (not shown) extending transversely therethrough similar to the bores of the posts 12 and 14. Each of the logs 52 is provided with transversely extending bores (not shown) similar to the bores of the pickets 16. Rods 58 extend through the aligned bores of the poles 54 and 56 and logs 52 interposed therebetween in the same manner as will be hereinafter set forth. Of course, it will be apparent that the ends of the rods 58 may extend only substantially half the distance through the poles 54 and 56, if desired, with the rod 58 of the next adjacent fence section 50 extending into the pole from the opposite direction, thus securing adjacent fence section to a single pole.

A still further modified fence section 60 is shown in FIG. 7. The fence section 60 is generally similar to the fence section 50, and comprises a plurality of log members 62 disposed side by side in tangential relation and interposed between a pair of substantially identical half-poles 64 and 66. The poles 64 and 66 are provided with transversely extending bores (not shown) generally similar to the bores of the posts 12 and 14, and the logs 62 are provided with transversely extending poles (not shown) similar to the pickets 16, whereby rods 68 may be inserted through aligned sets of the bores for securing the logs 62 and half-poles 64 and 66 together in the manner as hereinbefore set forth. The half-pole 66 of an adjacent fence section 60 may be disposed against the half-pole 64 of one fence section, and dowell pins 70, or the like, may be secured between the half-poles 64 and 66 together. Of course, suitable bolts (not shown) may be utilized in lieu of the dowell pins 70, if desired.

Referring now to FIG. 8, a fence structure 72 is shown which illustrates one type of surface contour which may be encountered in the erection or construction of a fence embodying the invention. The fence 72 as shown herein is assembled or erected from a plurality of fence sections 74 each comprising a plurality of pickets 76 interposed between a pair of spaced end post members 78 and 80, and secured together by connecting rods 82 in the manner as hereinafter set forth. In the fence structure shown in FIG. 8, the pickets 76 are flat boards, such as 1 inch by 4 inches, and are provided with pointed top edges 82, which are common and well known in this type of fence. The posts 78 and 80 may be "set" in the ground 84 in any well known manner, such as by embedding in suitable concrete forms 86, or the like.

Of course, when the contour of the ground 84 is substantially straight, or even, the fence sections 74 may be constructed or assembled in the manner as hereinbefore set forth. However, in the event the contour of the ground 84 is at an angle, as shown at 88, the bores of the pickets 76 and associated posts 78 and 80 may be disposed at an angle with respect to the horizontal, with the angle being selected complementary to the contour 88 whereby the fence section 72 will substantially conform to the contour of the ground. Of course, alternately, the bores of the pickets 76 may remain horizontally disposed, if desired, but may be "stair-stepped" in order to assemble the pickets 76 in a manner corresponding to or complementary with the contour 88.

The novel fence construction showh herein results in fence sections cannot sag. The tie rods or connecting rods secure the fence elements together in such a manner that the undivided elements function as a unit for supporting each other. In other words, a fence section constructed in the manner of the invention takes on the characteristics of a unitary board, or the like. Furthermore, it has been found that the individual pickets or fence elements will not warp when secured together in the manner as hereinbefore set forth. The bores in the fence elements are of a diameter substantially equal to the outer diameter substantially equal to the outer diameter of the rods, which appears to be the reason the fence sections will not sag or warp.

From the foregoing it will be apparent that the present invention provides a novel fence and method of erection thereof wherein a privacy fence, or substantially any desired type fence may be quickly and easily erected, and which is equally attractive on both sides thereof. The novel fence structure is erected from a plurality of substantially identical fence sections comprising fence elements secured together by means of connecting rods wherein the fence structure may be completed without the use of nails. The novel fence structure and method of making same is simple and efficient in operation and economical and durable in construction.

Whereas, the present invention has been described in particular relation to the drawings attached hereto, it should be understood that other and further modifications, apart from those shown or suggested herein, may be made within the spirit and scope of this invention.

What is claimed is:

1. A fence structure comprising a plurality of substantially identical fence sections secured in end to end relation, each fence section comprising a plurality of picket members interposed between a pair of spaced post members, each picket member being provided with a plurality of transversely extending bores, each post member being provided with a first plurality of transversely extending bores, a plurality of connecting rod means extending through the transversely extending bores in the picket members and through the first plurality of bores in said post members and beyond said post members for engagement with the post members of the adjacent fence sections, each post member being provided with a second plurality of transversely extending bores offset from said first plurality of bores of said fence section for receiving the ends of connecting rod means from an adjacent fence section.

* * * * *