Feb. 17, 1953

J. P. RHOME ET AL

2,628,823

TOY FENCE

Filed Aug. 10, 1950

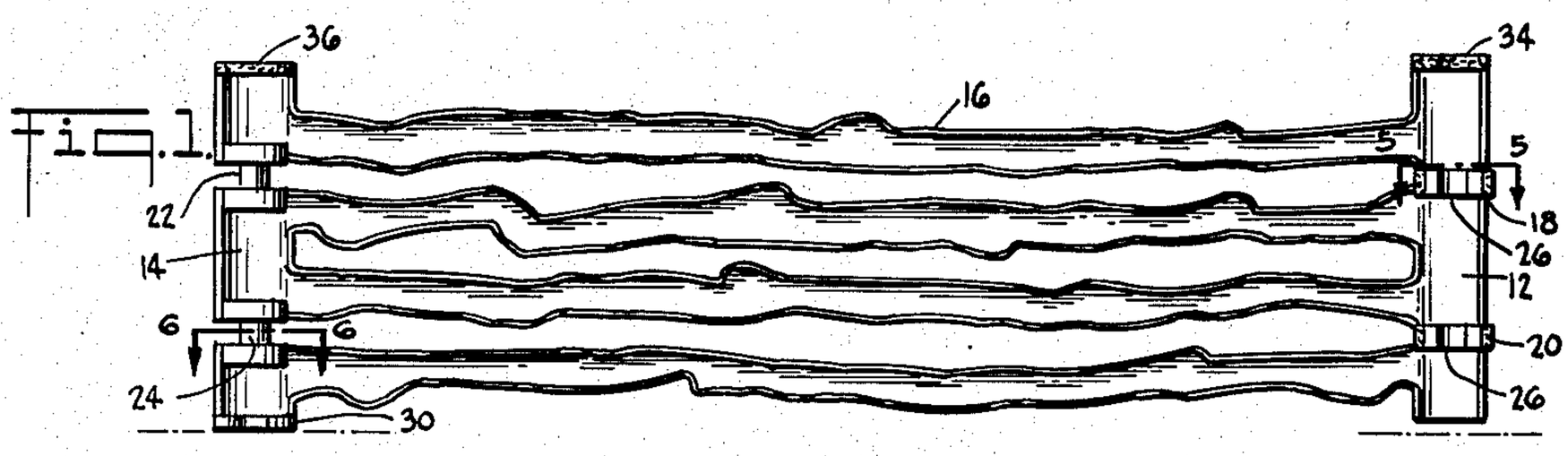

Fig. 1.

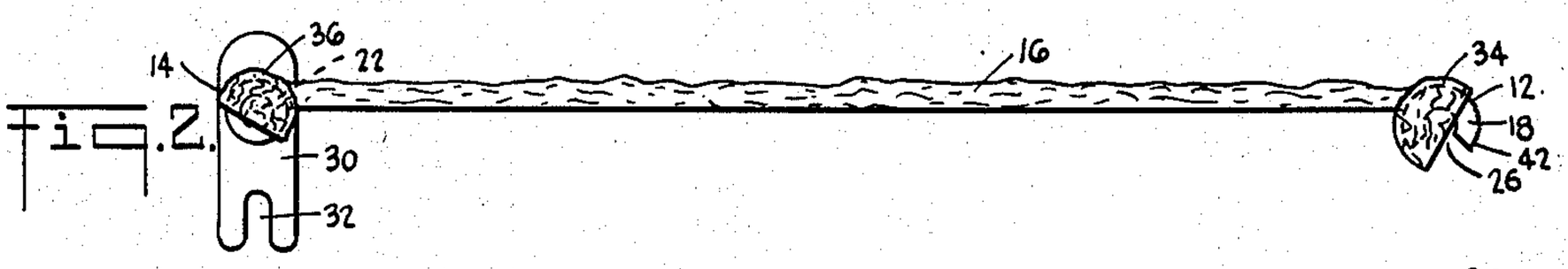

Fig. 2.

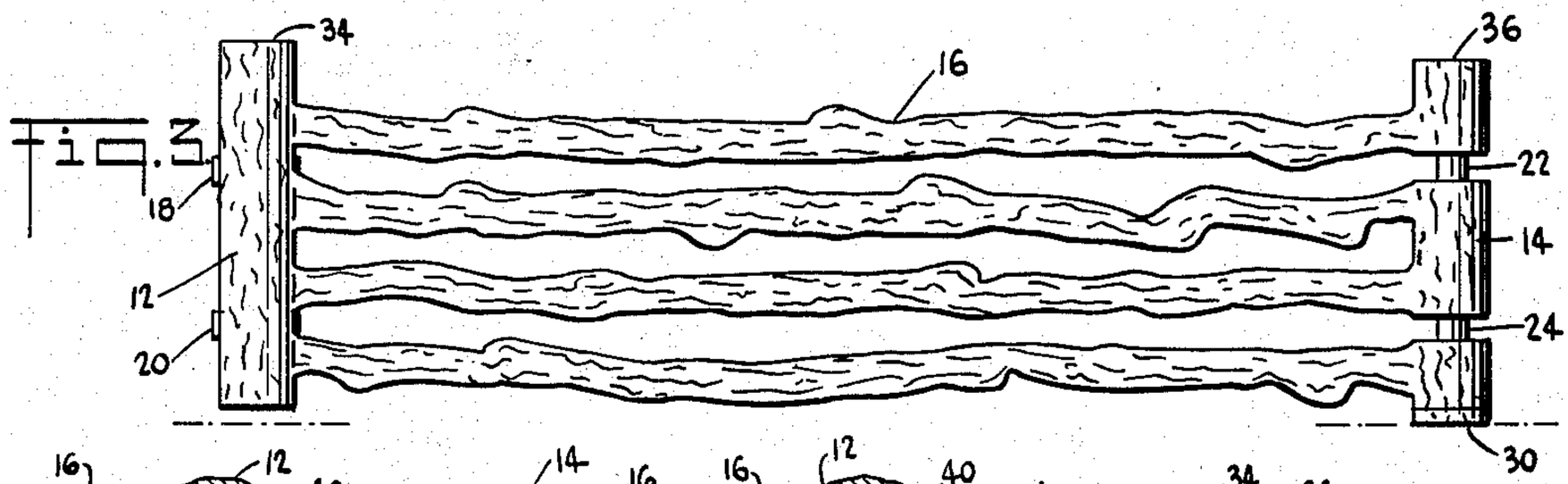

Fig. 3.

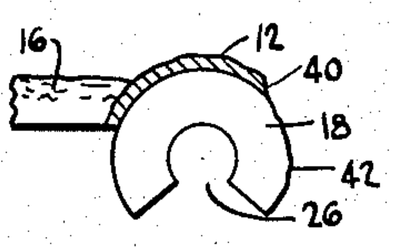

Fig. 5.

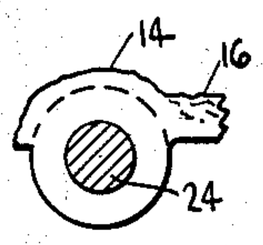

Fig. 6.

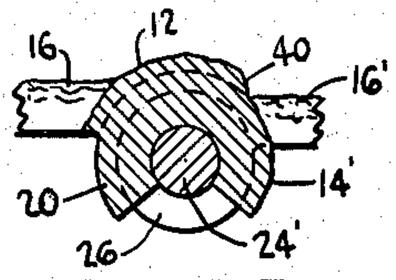

Fig. 7.

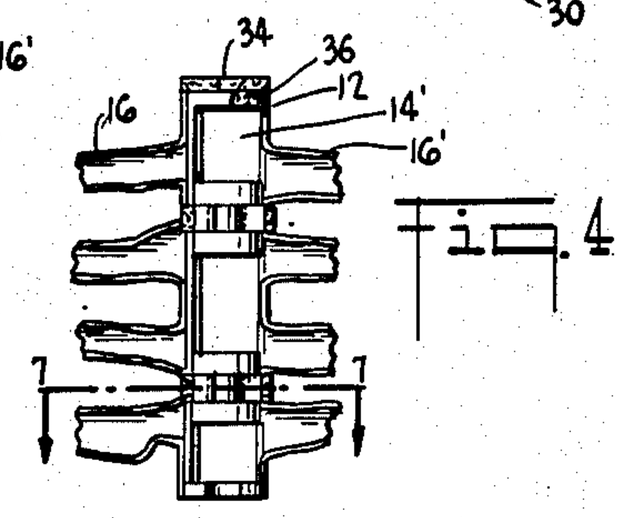

Fig. 4.

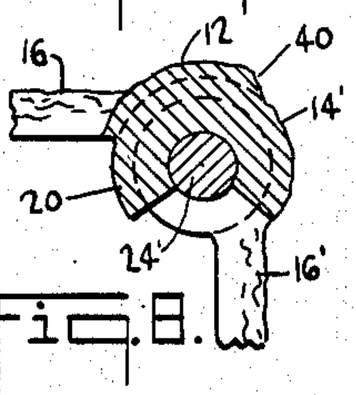

Fig. 8.

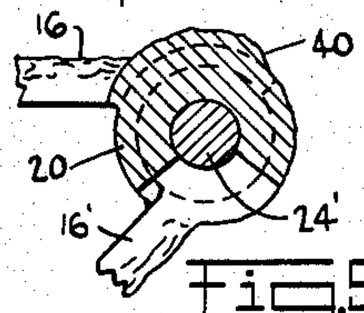

Fig. 9.

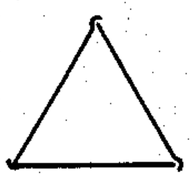

Fig. 11.

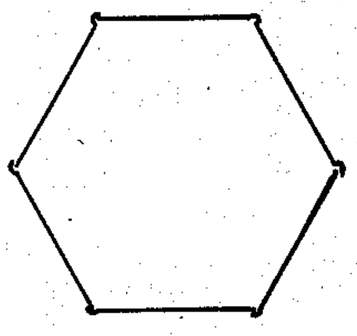

Fig. 14.

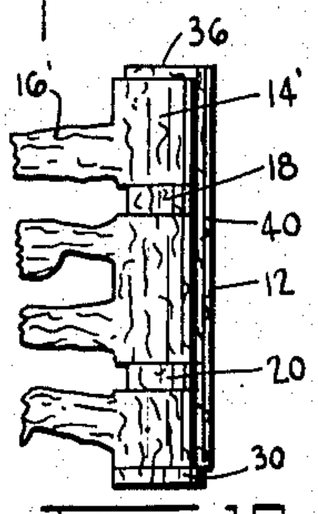

Fig. 10.

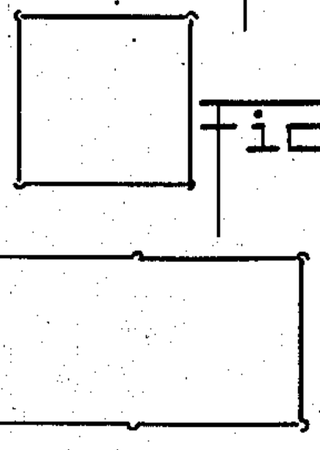

Fig. 12.

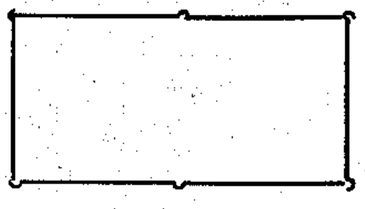

Fig. 13.

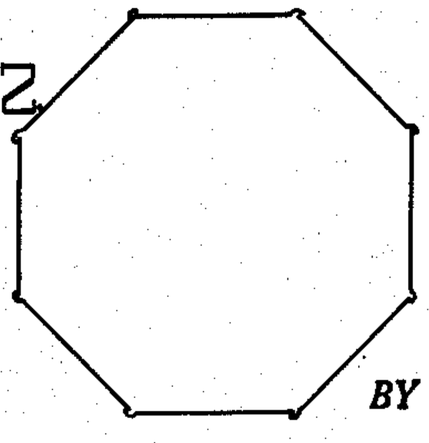

Fig. 15.

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TOY FENCE

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7 Claims. (Cl. 256—26)

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This invention relates to toy fences, and more particularly to a sectional toy fence which may be set up in desired length and outline.

It has already been proposed to make a toy fence in sections which may be detachably assembled to form an enclosure. Such sections are joined by means of dowels extending longitudinally of the fence.

One primary object of the present invention is to generally improve toy fences. More particular objects are to provide toy fence sections which are not only detachable, but which may be put together at almost any desired angle so that the sections may be assembled to form enclosures of a great variety of length and shape. Still another object is to provide a toy fence which simulates a rustic log fence. Still another object is to provide sections which may be readily assembled or taken apart and which present a realistic appearance at the connections between the sections, this realistic appearance being maintained while disposing the sections at any desired angle over a relatively large range from an acute angle of, say 45° to a straight angle or 180°.

To accomplish the foregoing general objects, and other more specific objects which will hereinafter appear, our invention resides in the toy fence elements and their relation one to another as are hereinafter more particularly described in the following specification. The specification is accompanied by a drawing, in which:

Fig. 1 is a rear elevation of a fence section embodying features of our invention;

Fig. 2 is a plan view of the same;

Fig. 3 is a front elevation of the fence section;

Fig. 4 is an inside view at the post connecting two sections;

Fig. 5 is a horizontal section drawn to enlarged scale and taken in the plane of the line 5—5 of Fig. 1;

Fig. 6 is a horizontal section drawn to enlarged scale and taken in the plane of the line 6—6 of Fig. 1;

Fig. 7 is a horizontal section drawn to enlarged scale and taken in the plane of the line 7—7 of Fig. 4, and shows the connection between sections;

Fig. 8 is a similar view showing the relation of the parts when the sections are approximately at right angles;

Fig. 9 is a similar section showing the relation of the parts when the sections are at an acute angle;

Fig. 10 is a front elevation of the parts shown in Fig. 9;

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Fig. 11 is a schematic plan view showing fence sections arranged in triangular outline;

Fig. 12 is a schematic plan view showing fence sections arranged in square outline;

Fig. 13 is a schematic plan view showing fence sections arranged in rectangular outline;

Fig. 14 is a schematic plan view showing fence sections arranged in hexagonal outline; and

Fig. 15 is a schematic plan view showing fence sections arranged in octagonal outline.

Referring to the drawing, and more particularly to Fig. 3, the fence section comprises an upright post 12 at one end, another upright post 14 at the other end with fence structure generally designated 16 extending therebetween. The post 12 is here termed an outer post, and the post 14 an inner post because, as will later appear, when the sections are connected together each inner post is dimensioned and adapted to be received within an outer post and to then simulate a single post.

The reverse or inner side of the fence section is shown in Fig. 1, and the section is shown in plan in Fig. 2. In these figures it will be seen that the outer post 12 has vertically spaced, aligned sockets 18 and 20, while the inner post 14 has vertically spaced, aligned pins 22 and 24. The pins are dimensioned to be received in the sockets in order to detachably assemble the sections to form a continuous fence. The sockets 18 and 20 are preferably open-sided sockets, these being open as indicated at 26 in Figs. 1, 2 and 5. The enlarged view Fig. 5 shows that the opening 26 is less than diametrical, that is, less than 180°, and the dimension of the opening is made such as to receive the pins 22 and 24 with a snap fit.

The upright outer post 12 preferably has a concavo-convex wall forming a part of a cylinder. For reasons which will later appear, it is preferably only about one-third the periphery of a complete cylinder, as will be clear from inspection of Fig. 5, and it is preferably oriented as shown in relation to the rails, that is, with the rails located near one edge of the cylindrical wall. The opening 26 of the socket faces in a direction generally perpendicular to the fence section or rails, as shown in Fig. 5.

The upright inner post 14 also is preferably made with an at least partially cylindrical wall which, however, is smaller in radius than the outer post 12, and therefore dimensioned to be received within the outer post, as is best shown in Fig. 7. The inner post may be a complete solid cylinder, but in order to minimize the amount of material required to make the same,

it is sufficient to provide approximately a half of the periphery of a cylindrical wall, as will be seen in Fig. 6. This is preferably oriented with the fence rail **16** disposed near one edge of the wall, as shown.

When the pins are arranged to be received laterally with a snap fit in open-sided sockets, as here shown, the inner post **14**, if solid, is necked or reduced in diameter to provide the aligned pins **22** and **24** previously referred to. If hollow, as here shown, there are disk-like parts at the top and bottom of each pin, best shown in Figs. 1 and 6. It will be understood that the pins are substantially concentric with the cylindrical wall of the inner post, and that the sockets are substantially concentric with the cylindrical wall of the outer post, and that all of these parts are concentrically related when the fence sections are assembled together as shown in Figs. 4, 7, 8 and 9.

Fig. 7 shows the relation of the parts of two fence sections when assembled together in end-to-end relation in a straight line. For this purpose, a fence section having an inner post **14'** and fence structure, in this case specifically rails **16'** is assembled with the outer post **12** of a section having fence structure, in this case specifically rails **16**. To do this the pin **24'** is snapped into the socket **20** of the section already described. In other words, Figs. 4 and 7 show the right end of Fig. 1 assembled with another fence section having a left end corresponding to the left end shown in Fig. 1.

For purposes of comparison reference may be made to Figs. 8 and 9 showing the fence sections disposed at different angles. In Fig. 8 the rails **16** and **16'** are approximately at right angles, and it is important to observe how the cylindrical outer wall of the inner post **14'** forms the continuation or extension of the cylindrical outer wall **12** of the outer post, so that to the eye of the observer there is only a single generally cylindrical post at the fence corner. For this purpose the outer edge of the cylindrical wall of the outer post **12** is preferably tapered or thinned, as is indicated at **40** in Figs. 8, 9, and 10 of the drawing. Because of the intentionally roughened or irregular surface given to the parts, this taper is adequate to help conceal the step or transition between the cylindrical wall of the outer post and the cylindrical wall of the inner post, and improves the resemblance to a single round post.

It may be mentioned that the outer edges of the sockets **18** and **20** (see Figs. 4 and 10) have substantially the same radius as the inner post, and consequently fill in the space around the pins, thus giving the post an apparent continuity even at the pins. Moreover, the outside of the socket is preferably roughened like the outside of the post, for the same purpose, as shown at **42** in Figs. 2 and 5.

Fig. 9 shows the relation of the parts with the fence rails at an angle of about 45°, and it will be seen that even at this acute angle the exterior of the inner post forms an apparent extension of the exterior of the outer post, so that the two together constitute a single post at the fence corner. It will be understood that the rails may be disposed at any desired angle extending in a range all the way from an acute angle, such as that shown in Fig. 9, to 180° or a straight angle, as shown in Fig. 7.

Thus the fence sections may be arranged to form any of a large number of enclosures, a few of which are illustrated in Figs. 11 through 15 of the drawing. In Fig. 11 three sections form a triangle. In Fig. 12 four sections form a square. In Fig. 13 six sections are used to form a rectangle twice as long on one side as on the other.

In Fig. 14 six sections are employed to form a hexagon, while in Fig. 15 eight sections are employed to form an octagon.

Some further features of the improved fence deserve attention. One of the two fence posts is preferably provided with a foot of sufficient area, or with a transverse dimension sufficiently great, to help hold the sections in upright position. Such a foot is shown at **30** in Figs. 1, 2 and 3. The foot is preferably slotted, as indicated at **32**, to receive a nail or thumbtack for anchoring the fence on a baseboard when a more permanent installation is wanted. In Figs. 1 and 3 of the drawing it will be seen that the foot **30** is disposed below the level of the lower ends of the posts **12** and **14** so that an inner post may be assembled with an outer post above the foot **30**, a single foot **30** serving for the assembled posts. In the particular fence here shown the foot **30** is secured at the lower end of the inner post.

The upper end of the outer post **12** is preferably provided with a top **34**. This enhances the realism of the toy by concealing to considerable extent the hollow shell-like nature of the post. The top **34** is disposed at a level higher than the height of the inner post **14** so that the inner post may be received beneath the top **34** when the posts are reassembled together.

While it is not so important to have a top for the inner post, we prefer to provide the inner post with a top, indicated at **36**. The top **36** fits beneath the top **34**. The tops **34** and **36** may be a complete circle when viewed in plan, but they need not be. In Fig. 2 it will be seen that they are somewhat more than a semi-circle and are preferably oriented as there shown, for when so oriented they supplement one another to form in combination a complete top with the fence rails at an angle in substantially the whole range from an acute angle, somewhat as in Fig. 9, to a straight angle, as in Fig. 7.

The entire fence section, including all of the parts described, such as the posts, rails, sockets, pins, tops, and foot, are preferably integrally molded out of a single body of a moldable plastic. Thus the fence section may be made quite inexpensively despite its somewhat complex configuration and its realistic appearance. The particular fence here illustrated preferably simulates a rustic log fence. The posts **12** and **14** simulate rustic log posts connected by rails which also simulate rustic logs. To conserve material and to facilitate the molding operation the posts and logs are preferably made concavo-convex. They are convex on the outside, as seen in Fig. 3, and concave on the inside, as seen in Fig. 1. They are preferably molded with irregularities, as shown in the drawing, and when that is done the structure is surprisingly realistic despite the hollow instead of solid nature of the rails and posts. The plastic used is preferably one adapted for injection molding, thus facilitating the molding operation. It will be understood that where cost is not an important factor the rails may be molded as solid logs, and similarily the inner post may be molded as a solid post. However, the outer post is still a hollow shell in order to adapt it to receive the inner post when the sections are assembled together.

Reverting to Fig. 1 of the drawing, it will be

seen that in the particular fence section here described there are four rails extending between the posts. The upper pin 22 and socket 18 are located between the two upper rails, and the lower pin 24 and socket 20 are located between the two lower rails. This is a convenient location in order not to have to neck or cut away the inner post at the connection between the post and a rail, for that would spoil the appearance and realism of the toy, and would probably make it difficult or impossible to assemble sections over so wide a range of angle as is here made possible. It will be recalled that the necked parts of the inner post are filled in by the sockets of the outer post, and when the sections are swung over a wide angle the sockets of the outer post can rotate between the rails of the next section, so that there is no interference resulting from a change of angle.

The illustrated fence section is typical of the ordinary continuous fence construction. If all of the sections are made alike, a gate may be simulated by swinging one entire section away somewhat from the adjacent section to form an opening. However, in actual practice the toy fence may include one special section having either an actual movable gate between its ends, or a simulated but immovable gate. Moreover, such a special gate section may include other refinements such as one or more simulated lamp-posts at the sides of the gate to mark the gate entrance. Such a special section may take varied forms, and constitutes no unique part of the present invention, which instead centers about the construction and method of fitting together of the normal continuous fence sections, or the similar mating end posts of the special gate section.

It is believed that the construction and method of use, as well as the advantages of our improved toy fence, will be apparent from the foregoing detailed description. It will also be apparent that while we have shown and described the invention in a preferred form, changes may be made in the structures disclosed without departing from the scope of the invention as sought to be defined in the following claims.

We claim:

1. A fence section for a multiple section toy fence, said section comprising an outer post at one end, an inner post at the other end with fence structure extending therebetween, said outer post having a concavo-convex wall forming a part of a cylinder with spaced aligned open-sided sockets concentric with said wall on the concave side thereof, said inner post having an at least partially cylindrical wall of substantially the same radius as that of the concave side of said outer post, said inner post having portions of reduced diameter at spaced points to form pins in alignment with said sockets and of substantially the same diameter as said sockets in order to detachably assemble two or more sections to form a continuous fence.

2. A fence section as defined in claim 1, in which the upright posts simulate rustic logs and said fence structure comprises a plurality of fence rails, and the walls of said posts being so related to the direction of the rails that a connected inner and outer post form a continuous post wall on the outside when the fence sections are swung over an angle ranging from an acute angle to a straight angle.

3. A fence section for a multiple section toy fence, said section comprising an outer post at one end, an inner post at the other end with fence structure extending therebetween, said outer post having a concavo-convex wall forming a part of a cylinder with spaced aligned open-sided sockets concentric with said wall on the concave side thereof, said inner post having an at least partially cylindrical wall of substantially the same radius as that of the concave side of said outer post, said inner post having portions of reduced diameter at spaced points to form pins in alignment with said sockets and of substantially the same diameter as said sockets in order to detachably assembly two or more sections to form a continuous fence, said outer post having a top, and said inner post being somewhat shorter than said outer post to be received beneath said top, one only of said posts having a supporting foot at the bottom, and said pin and socket construction permitting said sections to be disposed in desired angular relation.

4. A fence section for a multiple section toy fence, said section comprising an outer post at one end, an inner post at the other end with fence structure extending therebetween, said outer post having a concavo-convex wall forming a part of a cylinder with spaced aligned open-sided sockets concentric with said wall on the concave side thereof, said inner post having an at least partially cylindrical wall of substantially the same radius as that of the concave side of said outer post, said inner post having portions of reduced diameter at spaced points to form pins in alignment with said sockets and of substantially the same diameter as said sockets, said sockets and pins being so relatively dimensioned as to mate together with a snap fit in order to detachably assemble two or more sections to form a continuous fence, said outer post having a top, and said inner post being somewhat shorter than said outer post to be received beneath said top, one of said posts having a supporting foot at the bottom, all of the parts of said section being a single integral body of a moldable plastic, and said pin and socket construction permitting said sections to be disposed in desired angular relation.

5. A fence section as defined in claim 4, in which the upright posts simulate rustic logs and said fence structure comprises a plurality of fence rails, and the walls of said posts being so related to the direction of the rails that a connected inner and outer post form a continuous post wall on the outside when the fence sections are swung over an angle ranging from an acute angle to a straight angle.

6. A fence section for a multiple section toy fence, said section comprising an outer post at one end, an inner post at the other end with fence structure extending therebetween, said outer post having a concavo-convex wall forming a part of a cylinder with spaced aligned sockets concentric with said wall on the concave side thereof, said inner post having an at least partially cylindrical wall of substantially the same radius as that of the concave side of said outer post, said inner post having portions cut away to clear said sockets and carrying in alignment with said sockets pins which are substantially the same diameter as said sockets to be received by said sockets in order to assemble two or more sections to form a continuous fence, one of said posts having a top, one of said posts having a supporting foot at the bottom, and said pin and socket construction permitting said sections to be disposed in desired angular relation.

7. A fence section for a multiple section toy fence, said section comprising a hollow open-sided outer post at one end, an inner post at the other end with fence structure extending therebetween, said open-sided hollow outer post having a relatively thin wall and spaced aligned sockets, said inner post being of nearly the same dimension as said outer post and small enough to be received within the hollow outer post and large enough to nearly fill the hollow space therewithin, but with some clearance therebetween, said inner post having portions located at spaced points which portions are shaped to act as pivots cooperating with and received by said sockets, said sockets and pivots being so relatively dimensioned as to mate together with a snap fit in order to detachably assemble two or more sections to form a continuous fence, said outer post having a top, and said inner post being somewhat shorter than said outer post to be received beneath said top, one of said posts having a supporting foot at the bottom, all of the parts of said section being a single integral body of a moldable plastic, said pivot and socket construction and the clearance between the inner and outer posts permitting said sections to be disposed in desired angular relation.

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