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RAILING ASSEMBLY HAVING RAIL-POST COUPLING BAR

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Fig. 1.

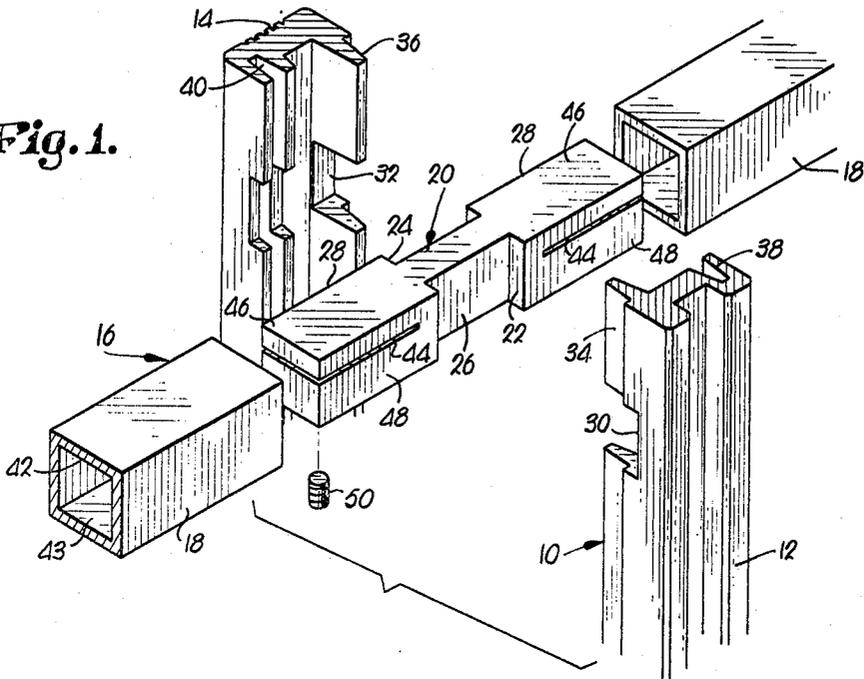


Fig. 2.

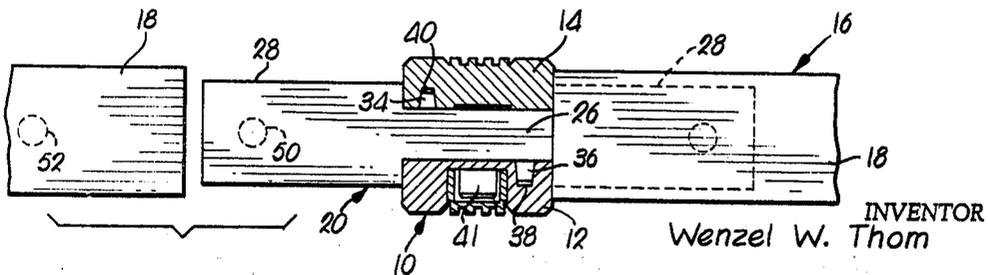
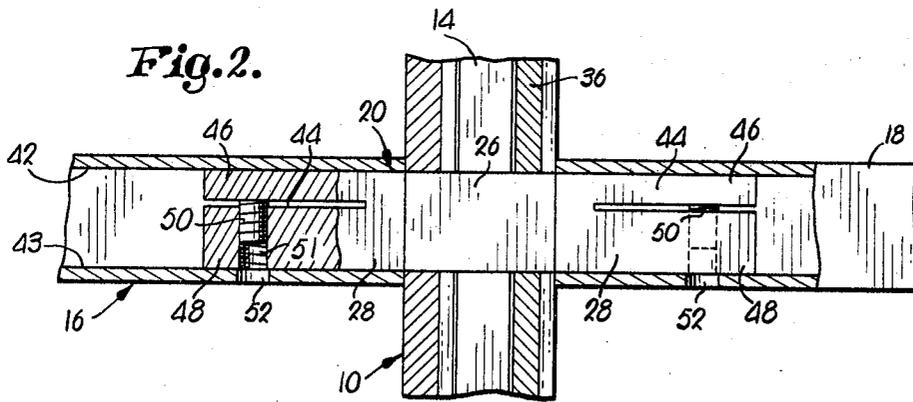


Fig. 3.

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**RAILING ASSEMBLY HAVING RAIL-POST
COUPLING BAR**

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2 Claims

ABSTRACT OF THE DISCLOSURE

A rail and post interconnection has a rail section in the form of a solid bar intersecting the post and provided with a web clamped between a pair of releasably interconnected post members, the bar and the post being complementally notched, and the bar having transversely polygonal portions extending laterally of the post which telescopically and complementally receive tubular rail sections. The bar portions are expanded tightly within the tubular sections by hidden screws.

This invention relates to an improved railing structure having a novel connection between the rail and supporting post giving the complete assembly increased strength.

A railing assembly utilizing two initially separate post members fastened together to support a rail therebetween is shown in my U.S. Patent No. 3,352,541. In such patent, I disclose a continuous, tubular rail notched complementally with the post members. Weakening of the rail as the result of the notch is compensated for by reinforcing ribs integral with the rail therewithin. Such spaced, diametrically opposed ribs extend through the post, and while the arrangement has been quite satisfactory and highly successful, it is an important object of my present invention to utilize the basic concepts disclosed in my patent in a manner to present an assembly which is strengthened still further and having other advantageous features not heretofore disclosed in this field.

The present invention provides a notched bar for interconnecting a pair of tubular rail sections at the point of engagement of the latter with its associated upright post. The notched bar includes a central web section disposed between the two upright members of a split post, and opposed end portions that are integral with the web section and project laterally from the latter to present a pair of plugs that telescopically receive the tubular rail sections. Each of the plugs is split to present a pair of fingers within the tubular section, and a spreader device is employed to move the fingers apart and into clamping relationship to the tubular rail section.

An important object of the instant invention is to provide a railing assembly having a solid bar tightly clamped between separable post members and adapted to telescopically receive tubular rail sections to the end that forces that tend to weaken and destroy the assembly are adequately absorbed by the joint thus formed with the post.

Another important object of my present invention is the provision of a solid cross at the post-bar intersection adapted to permit an attachment of the tubular sections, which is also characterized by its strength factor, in that the bar is split, and through use of a fastener, clamped tightly within the tubes to present tight plugs not easily dislodged and serving to reinforce the walls of the tubes at their ends.

In the drawing:

FIGURE 1 is a fragmentary, exploded perspective view of a railing assembly having a rail-post coupling bar made pursuant to my present invention;

FIG. 2 is a fragmentary, vertical cross-sectional view through the coupling; and

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FIG. 3 is a fragmentary, exploded view showing the post in transverse cross-section and the rail in plan.

A post 10 comprising a pair of upright members 12 and 14 supports a rail 16, having a pair of sections 18 and a section 20. Section 20, in the form of an elongated solid bar that traverses post 10, is notched at 22 and 24 to present a web 26 between members 12 and 14, and has a pair of identical, opposed portions 28 integral with the web 26 that project laterally from the post 10. Web 26 is fitted complementally into notches 30 and 32 in the post sections 12 and 14 respectively. Notches 22, 24, 30 and 32 are shaped so as to insure that web 26 is firmly gripped by members 12 and 14 by suitable fastener means. Such means may include tongues 34 and 36 that fit into complementary grooves 38 and 40.

Members 12 and 14 are clamped together by bolts 41 as shown in FIG. 3. The details of these fastening means are more completely disclosed in my aforementioned patent, which is incorporated herein by reference as need be for a full understanding of the instant invention.

Portions 28 of rail section 20 are polygonal plugs that are complementary to the transversely square tubular rail sections 18. Each plug 28 is split at 44, presenting a pair of fingers adapted to be spread apart. Fingers 46 and 48 in conjunction with set screw 50, form a spreader device for reinforcing the tubes 18 and attaching them to the section 20.

Set screws 50 within threaded bores 51 of fingers 48 are normal to top and bottom walls 42 and 43 respectively of the tubes 18 and traverse the splits 44. Screws 50 are accessible through access holes 52 in bottom walls 43 and when manipulated, force the fingers 46 and 48 apart into tight clamping relationship with the walls 42 and 43 therebetween.

When the sections 18 and 20 are thus interconnected with the section 20 associated with post 10 as shown in FIGS. 2 and 3, the assembly becomes, in effect, a single composite unit virtually incapable of racking or twisting under normal conditions of use. Completely filling the ends of the sections 18 by the portions 28 of the section 20 in plug-like manner, especially in view of the spreader devices which include screws 50, renders the ends of the sections 18 as strong as or stronger than any other portion thereof.

The abutment of the sections 18 with the post 10, held in such position by the spreader plugs, cooperates with the tight clamping of the post 10 completely around web 26 to add strength to web 26 and prevents section 20 from movement in any direction, laterally, vertically, or rotational with respect to post 10. Therefore, the weakening of section 20 which necessarily results from notches 24 and 26 becomes inconsequential and is fully compensated for by the strengthening characteristics above explained.

The entire railing assembly is easily, quickly and inexpensively assembled, may be extruded or otherwise produced in all of its essential components without great cost, and equally important, the highly functional nature of the coupling in no way detracts from the pleasing appearance and aesthetic attributes of the railing.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A railing assembly comprising:

- a post having a pair of upright members;
- a rail having a pair of tubular sections disposed on opposite sides of said post;
- an elongated, solid monolithic bar traversing the post and extending into said tubular sections,
- said bar being notched presenting a web between the members,
- said bar having opposed end portions integral with the web and projecting from the post laterally thereof

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to present a pair of plugs, each of said plugs extending into an adjacent tubular section, each of said plugs being split, presenting a pair of fingers within each of said tubular sections; releasable means for attaching each of the plugs to the tubular sections, 5
 said releasable means comprising a spreader device carried by one of said fingers and movable against the other of said fingers for spreading the fingers apart into clamping relationship to said tubular section; 10
 fastener means interconnecting said members for clamping said web tightly between the members; and means mounting each of said tubular sections on said end portions of the bar.
 2. A railing assembly as set forth in claim 1, 15
 each of said plugs and each of said tubular sections being polygonal and complementally interfitted, presenting a pair of opposed plug faces flatly engaging proximal inner surfaces of opposed tubular sections, said device comprising a setscrew normal to said faces 20

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and traversing the split of said plug, whereby to press said faces against said surfaces.

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U.S. Cl. X.R.

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