United States Patent [19]

Wall

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[45] **July 17, 1973**

[54] **MULTI-PIECE VERTICAL SUPPORT FOR SWIMMING POOLS**

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Related U.S. Application Data

[63] Continuation of Ser. No. 868,505, Oct. 22, 1969.

[52] **U.S. Cl.**..... **4/172.19,** 52/169, 52/300, 52/735, 52/732

[51] **Int. Cl.**..... **E04h 3/16,** E04h 3/18, E02d 27/00

[58] **Field of Search**..... 52/300, 169, 730, 52/732, 735; 4/172.19

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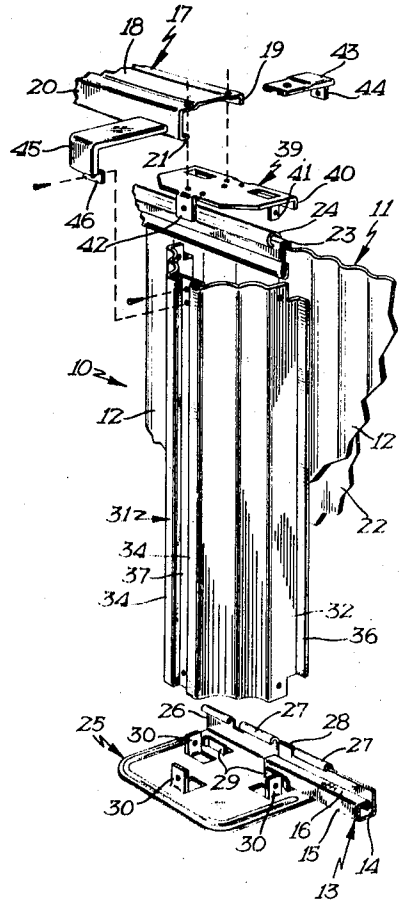
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Assistant Examiner—James L. Ridgill, Jr.
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[57] **ABSTRACT**

A multi-piece vertical support for an above-ground swimming pool includes a flat base plate which is secured to the bottom rails of the swimming pool. A pair of vertical side plates are releasably secured together by interlocking elements on a central plate and the side plates. In another embodiment, two pairs of side plates are provided, and in further embodiment, the flanges or side plates are releasably secured together by a locking element. Each vertical support includes a cap and attachment elements which attach each support to the upper rails.

4 Claims, 6 Drawing Figures



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SHEET 1 OF 2

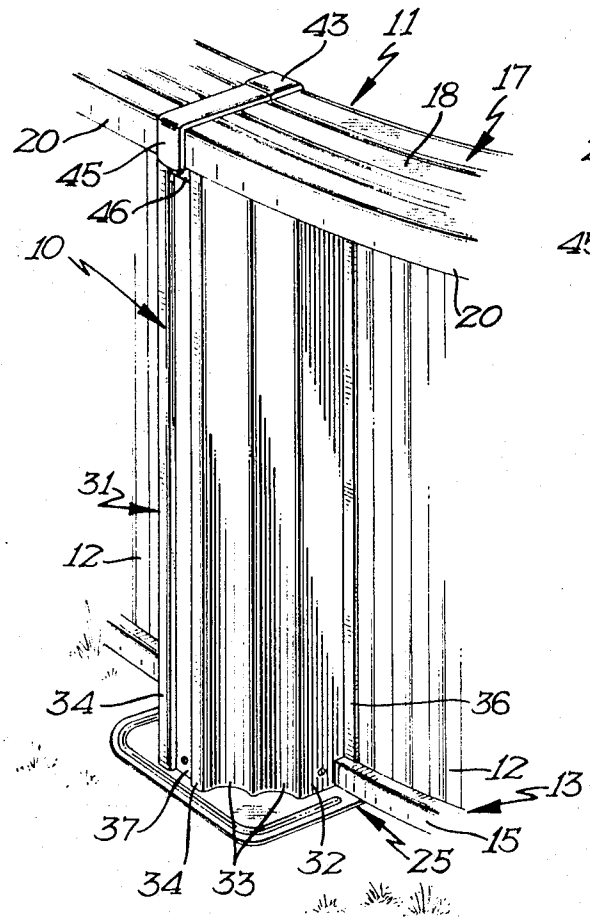


FIG 1

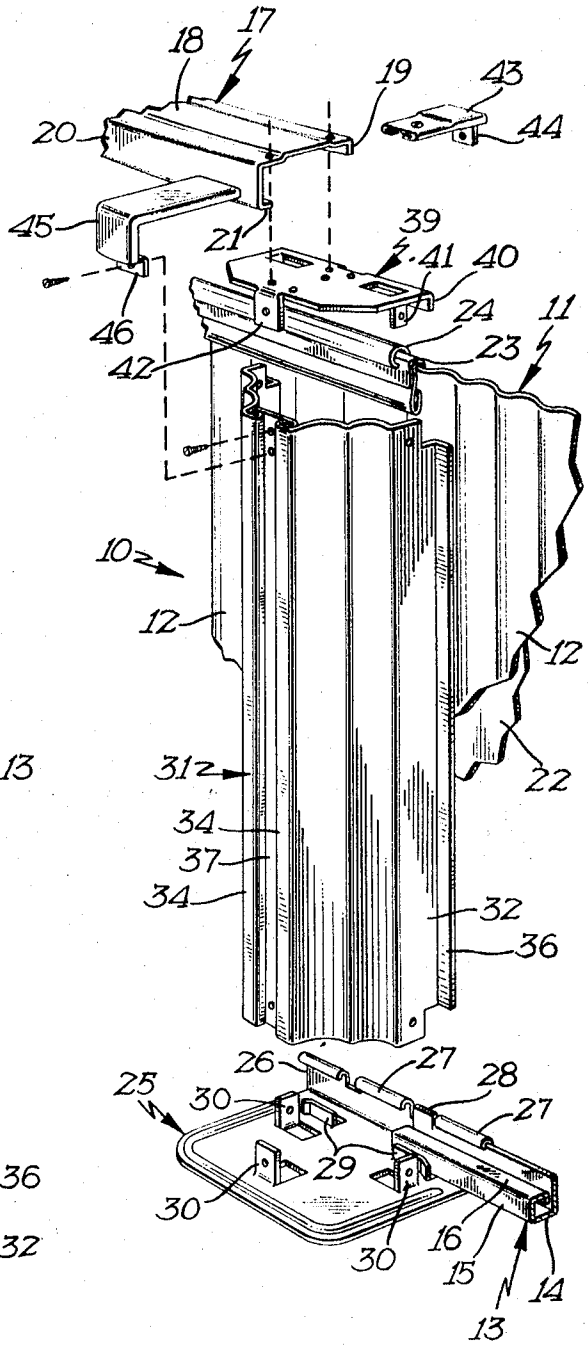


FIG 2

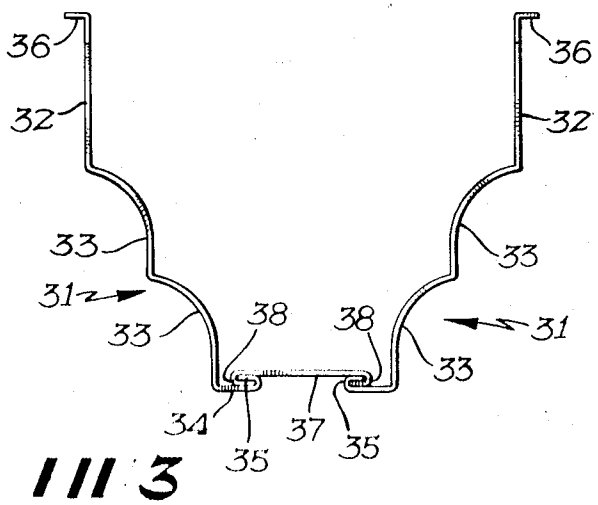


FIG 3

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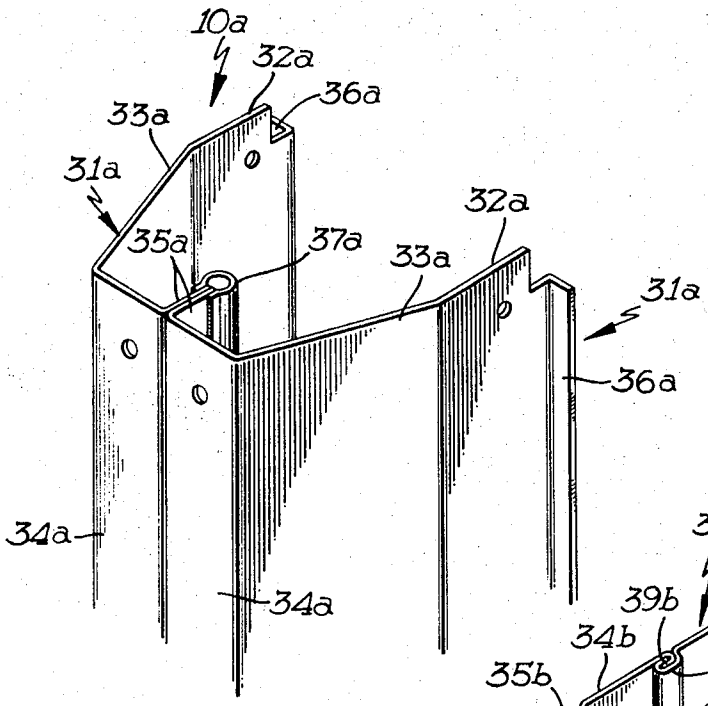


FIG 4

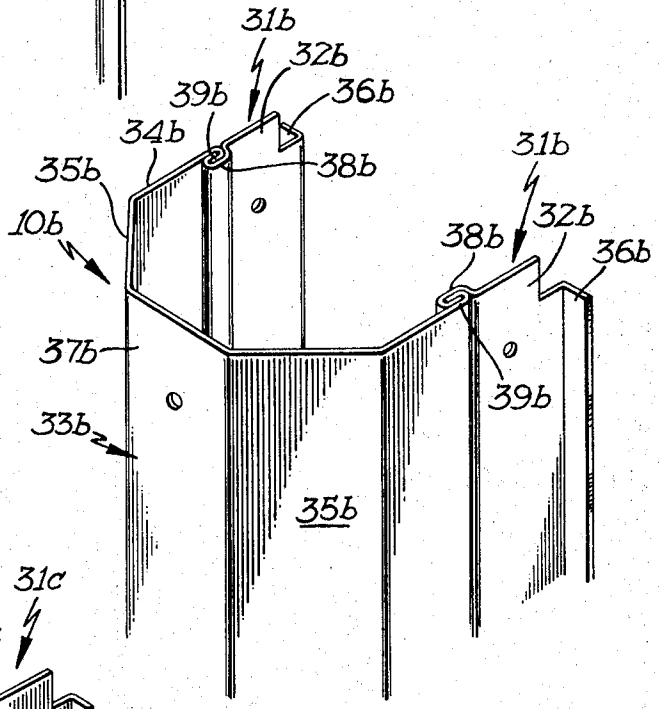


FIG 5

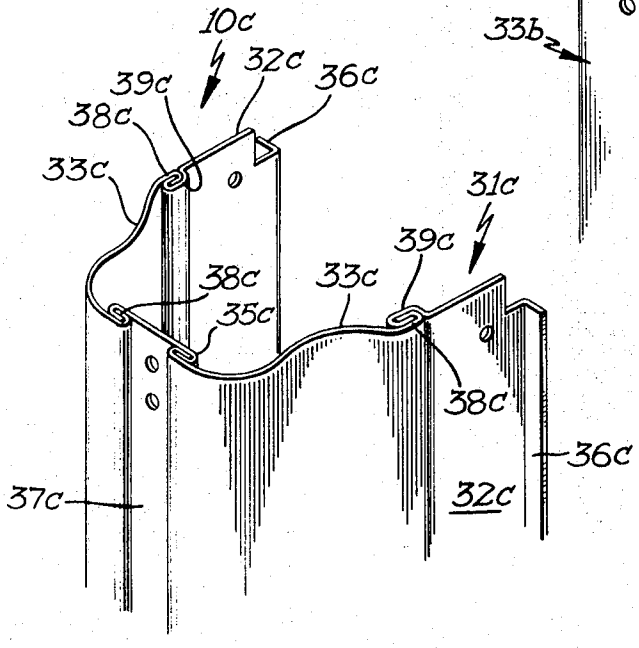


FIG 6

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MULTI-PIECE VERTICAL SUPPORT FOR SWIMMING POOLS

This is a continuation of application Ser. No. 868,505, filed Oct. 22, 1969.

BRIEF SUMMARY OF THE INVENTION

It is an object of this invention to provide an above-ground swimming pool with a multi-piece vertical support or leg which is positioned against the side wall of the swimming pool and which is attached to the upper and lower rails thereof.

A more specific object of this invention is to provide a vertical generally channel shaped support or leg for an above-ground swimming pool which is formed of a plurality of vertical metallic elements releasably secured together and which not only are releasably interconnected with various components of the swimming pool but also provide the swimming pool with an exterior leg support which has more asthetic appeal than vertical supports in similar swimming pool structures.

These and other objects and advantages of this invention will more fully appear from the following description made in connection with the accompanying drawings wherein like reference characters refer to the same or similar parts throughout the several views.

BRIEF DESCRIPTION OF THE FIGURES OF THE DRAWINGS

FIG. 1 is a fragmentary perspective view of a swimming pool which embodies the novel vertical support;

FIG. 2 is an exploded perspective view of the novel vertical support;

FIG. 3 is a top plan view of the vertical support with the cap and base plate thereof removed;

FIG. 4 is a fragmentary perspective view of a different embodiment of the vertical leg support;

FIG. 5 is a fragmentary perspective view of a further embodiment of the vertical leg support; and

FIG. 6 is another embodiment of the novel vertical leg support.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings and more specifically to FIGS. 1, 2 and 3, it will be seen that one embodiment of the novel vertical leg support, designated generally by the reference numeral **10**, is thereshown. This vertical leg support **10** is a component of an above-ground swimming pool **11**. Although the swimming pool **11** has been fragmentarily illustrated in FIG. 1, it is pointed out that the swimming pool may be of cylindrical configuration and includes a vertically oriented continuous side wall **12** preferably formed of corrugated sheet metal. The side wall itself may be of cylindrical configuration and adjacent ends of the sheet metal are joined together. It is pointed out that the swimming pool may have a configuration other than cylindrical.

The lower edges of the side wall **12** are received within bottom rail members **13**, a plurality of such bottom rail members being interconnected together. Each bottom rail member **13**, as best seen in FIG. 2, includes a web portion **14** having a pair of spaced apart vertical flanges **15** integrally formed therewith and projecting upwardly therefrom. One of the vertical flanges **15** has an inturned flange **16** integrally formed therewith which terminates in a terminal flange. The other vertical flange **15** projects upwardly beyond the inturned flange **16**. A slot is defined between the inner vertical flange and the inturned flange **16**, and the lower peripheral edge of the side wall is received within the slot thus defined.

The swimming pool **11** also includes a plurality of upper rails or seats **17** each being of generally channel shaped construction including a web portion **18** having an inner flange **19** integrally formed therewith and an outer flange **20** integrally formed therewith and depending therefrom. The inner flange **19** is substantially shorter than the outer flange **20**, and it will be noted that the outer flange has an inturned flange **21** integrally formed therewith. A plurality of the upper rails **17** are secured together throughout the periphery of the swimming pool.

The swimming pool **11** also includes a flexible liner **22** formed of an impervious plastic material which has its peripheral edges folded over the top edge of the side wall **12**. This impervious liner **22** depends downwardly from the side wall and has a major portion of its area positioned upon the surface of the ground in a manner well known in the swimming pool art. A plurality of coping elements **23** of generally channel shaped configuration are urged downwardly in seated relation upon the upper peripheral edge of the side wall to clamp the marginal edge portion of the liner upon the side wall. These coping elements are formed of a suitable flexible plastic material and are arranged in end-to-end relation upon the upper edge of the side wall. A plurality of generally channel shaped stabilizer rails **24** are positioned upon the coping elements and these stabilizer rails are formed of a suitable metallic material. The upper rails **17** are seated upon the stabilizer rails **24**.

The swimming pool **11** is provided with a plurality of the vertical leg supports **10** and each includes a substantially flat base plate **25** having an upturned inner flange **26** integrally formed with the inner edge thereof. The inner flange **26** terminates in an inwardly curved upper end **27**, as best seen in FIG. **2**. A portion of the inner flange **26** is also struck inwardly to define a locking element **28** which is adapted to coact with the bottom rails for releasably locking the rails to the base plate. This arrangement facilitates installation of the sidewall **12** with respect to the bottom rails.

Each base plate also has a pair of vertically oriented guide elements **29** struck upwardly from the base plate and each cooperates with the inner flange **26** to define guide ways for a pair of bottom rail members **13**. It will be noted that the inwardly curved upper end **27** of the inner flange for each base plate overlies the inner vertical flange **15** of each bottom rail. It will further be noted that the inwardly struck lock element **28** of each base plate also serves as a stop to limit inward movement of each pair of bottom rail members which are interconnected with each base plate.

Each base plate also has a plurality of symmetrically arranged attachment tabs **30** struck upwardly therefrom, and in the embodiment shown in FIGS. **1** to **3**, three such tabs are provided. These tabs are apertured and the base plate is provided with an upturned bead throughout a substantial portion of the periphery thereof.

Each vertical support **10** includes a pair of vertically oriented side members **31** which are of substantially identical configuration, each being formed out of a suitable metallic material and each including a substantially flat inner portion **32** and a pair of outer concave portions **33**. The outermost concave portion **33** of each

side member has integrally formed therewith a terminal flange **34** which is reversely bent to define a U-shaped locking element **35**. Each inner portion **32** has an outturned flange **36** integrally formed therewith. Each support also includes a substantially flat center plate **37** which has its vertical edges reversely bent to define U-shaped locking elements **38**. It will be noted that the U-shaped locking elements **35** of the side members interlock with the locking elements **38** on the center plate to interlock the side members and center plate together. When so interlocked, it will be noted that each vertical leg support is of generally channel shaped configuration as best seen in FIG. **3**.

The center plate **37** as well as the side members **31** are provided with apertures in the lower ends thereof which are disposed in registering relation with the apertures in the attachment tabs **30** on the base plate **25** to permit connection of the center plate and side members to the base plate by suitable sheet metal screws. When so attached to the base plate, the flanges **36** on the side members are disposed in engaging relation with respect to the side wall **12**.

Each vertical support **10** also includes a substantially flat cap **39** which is seated upon and attached to the assembled side members and center plate. Each cap **39** has a downturned inner flange **40** integrally formed therewith which is positioned against the recessed vertical edges of the inner portions **32** of the side members. A pair of side attachment tabs **41** are struck downwardly from the cap and each is apertured and disposed in registering relation with an aperture in the inner portion **32** of each side member **31**. Each cap also is provided with an apertured outer attachment tab **42** which is disposed in engaging relation with the center plates **37** so that the apertures are disposed in registering relation with respect to each other. Suitable sheet metal screws secure the cap to the side members and the center plate.

The cap serves not only to provide additional means for interconnecting the side members and center plate of each vertical leg support, but each cap **39** also provides a seat and means of connecting each upper rail **17** to each vertical support. In this regard, the end portions of a pair of upper rails will be positioned upon a cap, and it will be noted that each rail has a pair of apertures in the end portion thereof which are disposed in registering relation with apertures in the associated cap. Each pair of rails will be disposed in abutting relation with respect to each other. Suitable sheet metal screws serve to attach each pair of rails to each cap.

Means are provided for covering the abutting ends of the top rail member and this means includes an inner top connector member or bracket **43** having a depending tab **44** integrally formed therewith.

The bracket **43** has a reduced end portion **42***a* which is provided with an opening therein. The opening in the reduced end portion is disposed in registering relation with respect to an opening in the cap **39** whereby the cap and bracket may be secured together by a sheet metal screw.

An L-shaped outer top connector member or bracket **45** is also provided and telescopically receives the reduced end portion **43***a* of the inner top connector member **43**. In this regard, the outer top connector member is of channel shaped cross-sectional configuration. The outer top connector member **45** is also provided with a depending tab **46** which is positioned against the upper end portion of the center plate **37**. These top connector members are seated upon the upper rail **17** and overlie the abutting ends thereof. The tab **44** is positioned against the flange **19** of upper rail **17** and suitable sheet metal screws attach the tab **46** to the center plate **37**.

Referring now to FIG. **4**, it will be seen that a different embodiment of the vertical leg support, designated generally by the reference numeral **10***a*, is thereshown. In the embodiments of FIGS. **4**, **5** and **6**, the cap, as well as the base plate, have been omitted, but it is pointed out that the cap and base plate will be substantially identical to that shown in FIGS. **1** to **3**. The vertical leg support **10***a* includes a pair of side members **31***a* each including a flat inner portion **32***a* and a substantially flat oblique outer portion **33***a*. Each side member also includes a flat outer portion **34***a* which terminates in an inturned flange **35***a*. The flat inner portion **32***a* of each side member also terminates in an outturned flange **36***a*. It will be noted that the side members are positioned so that the inturned flanges **35***a* abutt against each other and so that the leg structure is of generally channel shaped configuration. An elongate U-shaped clip **37***a* is adapted to frictionally engage the inturned flanges **35***a* to secure the side members together. The flat outer portions **34***a* of the side members presents a surface corresponding to the center plate **37** of the embodiments of FIGS. **1** to **3**.

Referring now to FIG. **5**, it will be seen that the vertical support is designated generally by the reference numeral **10***b* and includes a pair of side members **31***b* each being of substantially flat configuration. Each side member **31***b* includes a flat inner portion **32***b* which has an outturned flange **36***b* along one vertical edge thereof. Each of these side members are interconnected by a channel shaped member **33***b* which includes flat side portions **34***b*, flat oblique portions **35***b* and a flat center portion **37***b*. Each of the side members **31***b* has one of its vertical edges bent to define a vertically extending U-shaped locking element **38***b*. Similarly, the U-shaped channel member **33***b* also has its vertical or longitudinal edges bent to define U-shaped locking elements **39***b* which engage the coact with the locking elements **38***b* to releasably lock the side members to the channel shaped member **33***b*.

Referring now to FIG. **6**, it will be seen that the support **10***c* thereshown includes a first set of side members **31***c* each having one vertical or longitudinal edge outwardly bent to define a flange **36***c*. The other vertical or longitudinal edge of each side member **31***c* is also bent to define a U-shaped locking element **39***c*. A second set of side members **33***c* is provided having opposite vertical or longitudinal edges thereof bent reversely to define U-shaped locking elements **38***c*, one of which coacts with the locking elements **39***c* to detachably connect the second set of side members to the first set of side members **31***c*. A center plate **37***c* is provided and has its longitudinal or vertical edges thereof reversely bent to define U-shaped locking elements **35***c*. These locking elements coact with the outer locking elements **38***c* of the second set of side members **33***c* to releasably lock these components together. Thus it will be seen that the embodiments of FIGS. **4**, **5** and **6** disclose vertical supports which are also of channel shaped configuration in the manner of the embodiments of FIGS. **1** to **3**.

As pointed out above, these vertical support members illustrated in FIGS. 4, 5 and 6 utilize a base plate and cap in the manner of the embodiment of FIGS. 1 and 3. The various components of the vertical support may be inexpensively formed from suitable metallic material and these various components may be formed in different colors. For example, in the embodiment to FIGS. 1 to 3, the center plate may be formed of a different color that the side members. Similarly, the manner of assembling the various components of the vertical supports involves a rather simple operation even though these components are very effectively secured together.

From the foregoing description, it will be seen that I have provided a novel vertical support for swimming pools which may be inexpensively constructed and which adds to the asthetic appeal of an above-ground swimming pool.

Thus it will be seen that I have provided a novel vertical support which is not only of simple and inexpensive construction, but one which functions in a more efficient manner than any heretofore comparable supports for above-ground swimming pools.

What is claimed is:

1. An above-ground swimming pool comprising a vertically oriented metallic side wall, an impervious liner folded over the upper edge of the side wall and extending interiorly thereof, a plurality of channel shaped bottom rails engaging said side walls,

a plurality of vertical generally channel shaped supported each including a generally rectangular substantially flat base plate having an upturned flange integral with one edge thereof, vertically oriented guide elements struck upwardly from the base plate and being spaced inwardly from said flange, and being spaced inwardly from and within the confines of the remaining peripheral edges of said plate, each bottom rail extending between a guide element and said flange whereby each base plate is detachably connected with a pair of said bottom rails,

a locking element on each base plate releasably engaging the bottom rails to releasably lock the same to a base plate, said base plate engaging said side wall and projecting laterally and exteriorly thereof, each base plate having a plurality of spaced apart upwardly projecting attachment tabs affixed thereto and spaced inwardly from the periphery of the base plate, and spaced from said guide elements, each support including a pair of substantially similar vertically oriented side elements positioned upon a base plate and extending upwardly therefrom, each side element engaging one of said attachment tabs and positioned exteriorly thereof and interiorly of the outer periphery of said base plate means securing each side element to one of said tabs, each side element having a vertical dimension corresponding to the vertical dimension of said side wall, each side element having a vertical locking element thereon extending substantially throughout the vertical dimension of each side element, each side element having a vertically oriented outturned flange throughout the vertical dimension thereof positioned against said side wall, an elongate substantially flat plate having locking elements on the vertical edges thereof releasably engaging the locking elements on said side element to releasably lock the side elements and flat plate together, said flat plate defining the web portion of each channel shaped support and being spaced inwardly from the periphery of said base plate.

2. The invention as defined in claim 1 wherein said locking element for each base plate is on said upturned flange and being struck inwardly from said flange, said locking element also limiting inward movement of said bottom rails towards each other.

3. The invention as defined in claim 1 and wherein each of said side elements includes a first side portion and a second side portion, each first side portion being detachably secured to one of said second side portions, cooperating releasable locking elements on said second side portions, engaging locking elements on said flat plate.

4. The invention as defined in claim 1 wherein each of said attachment tabs is of substantially flat planar configuration.

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