June 3, 1958 J. A. STAROPOLI 2,836,860

KNOCKDOWN STAND

Filed Oct. 24, 1956 3 Sheets-Sheet 1

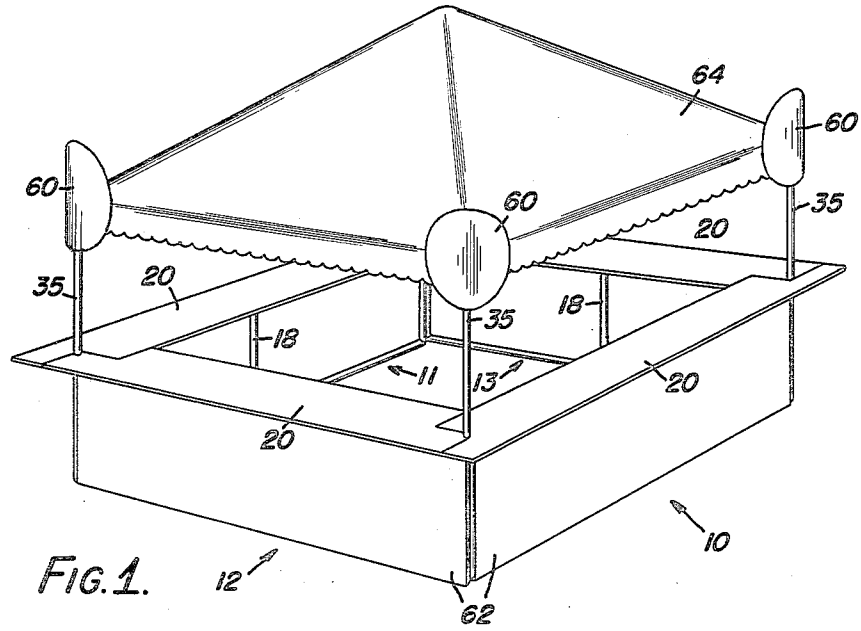


FIG. 1.

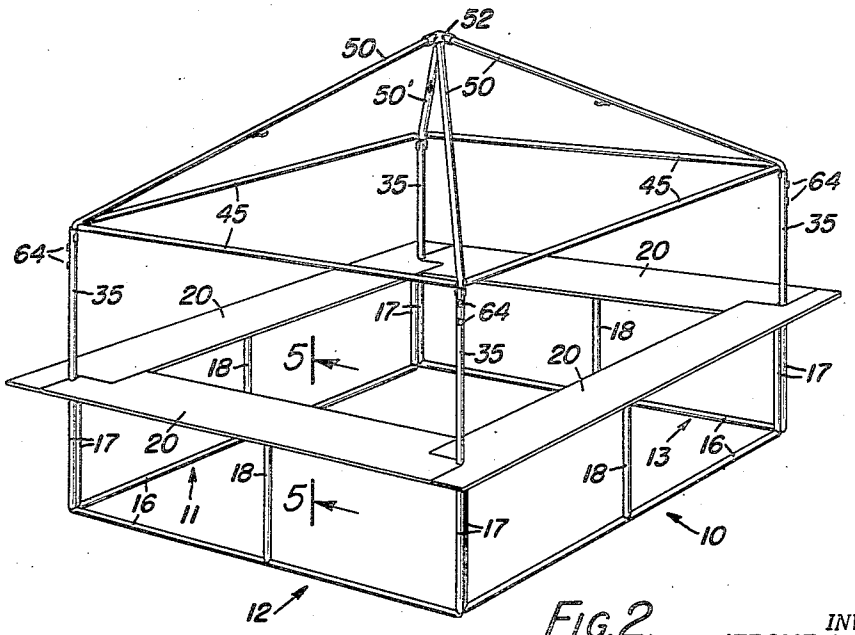


FIG. 2.

INVENTOR.
JEROME A. STAROPOLI

BY

ATTORNEY

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KNOCKDOWN STAND

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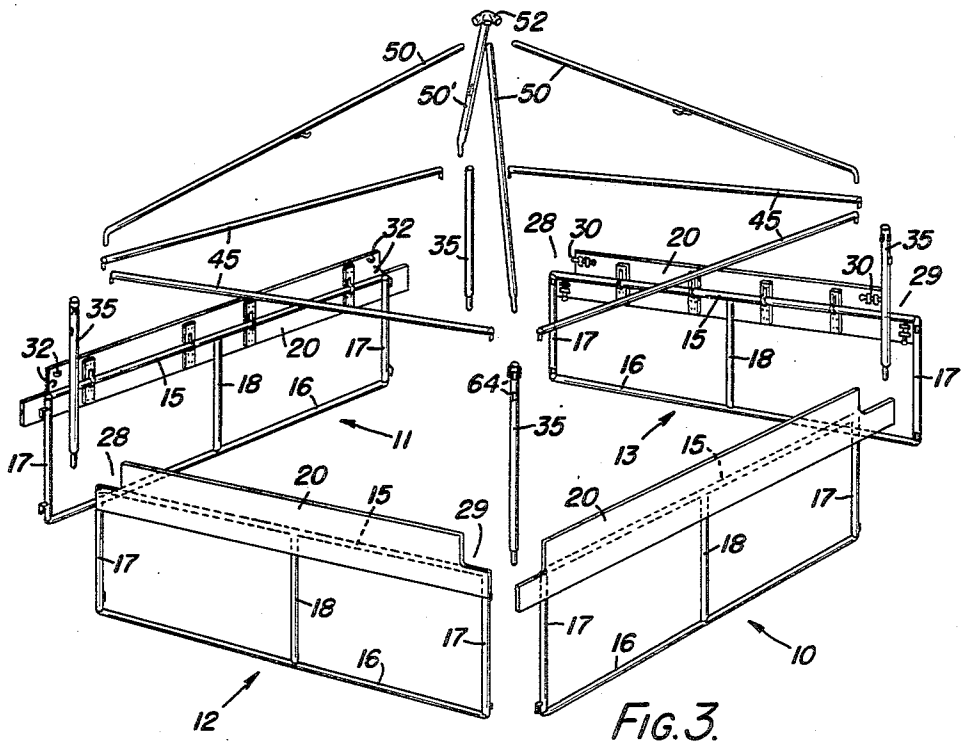


FIG. 3.

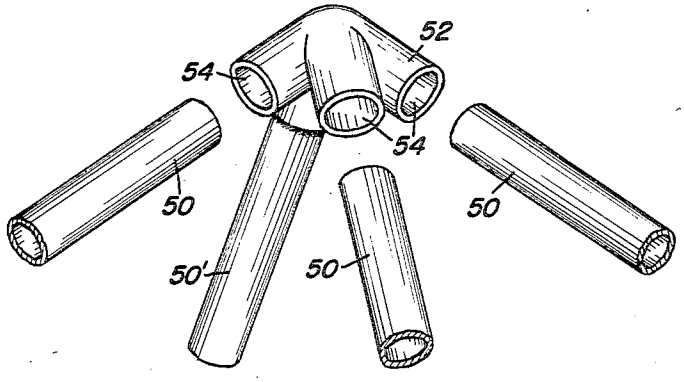


FIG. 7.

INVENTOR.
JEROME A. STAROPOLI

BY

ATTORNEY

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KNOCKDOWN STAND

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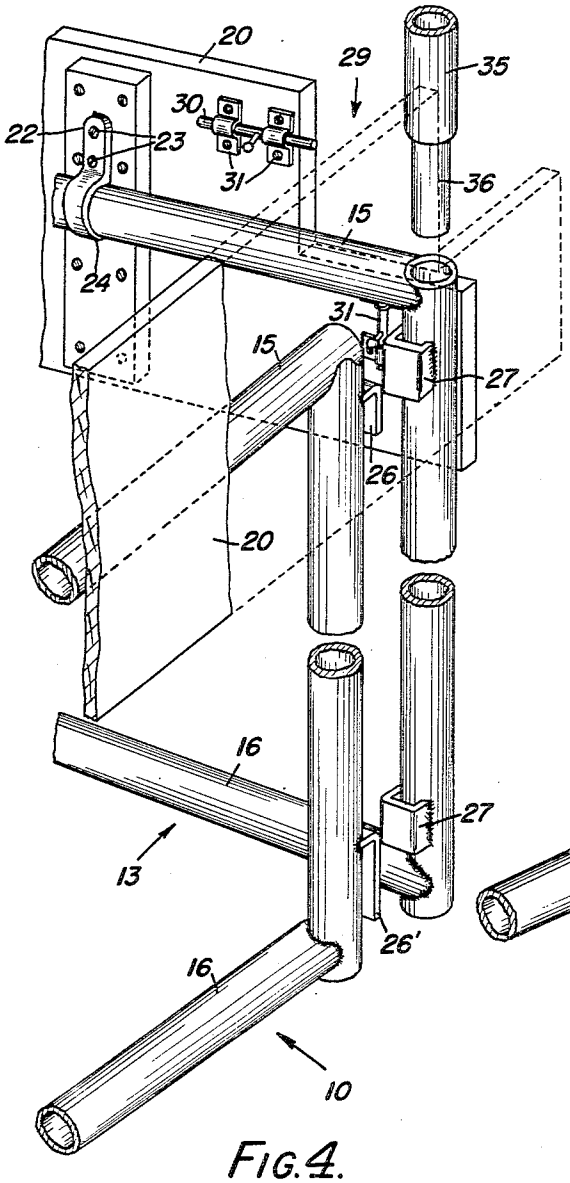


FIG. 4.

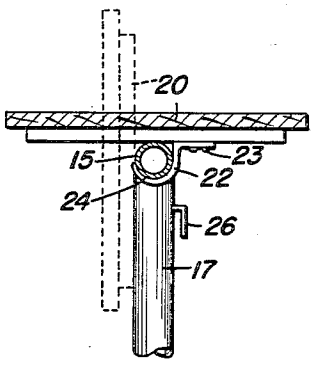


FIG. 5.

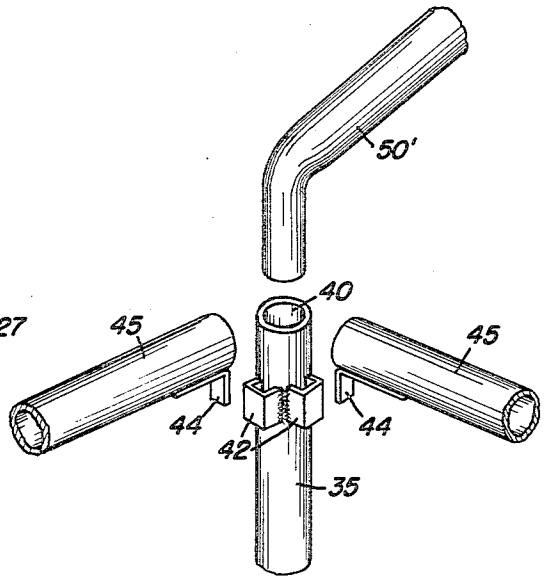


FIG. 6.

INVENTOR.
JEROME A. STAROPOLI

BY

ATTORNEY

United States Patent Office

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KNOCKDOWN STAND

Jeromé A. Staropoli, Rochester, N. Y., assignor of one-half to Frank G. Staropoli, Rochester, N. Y.

Application October 24, 1956, Serial No. 618,048

12 Claims. (Cl. 20—1.6)

This invention relates to a knockdown structure and more particularly to a transportable, knockdown structure for a dispensing stand, particularly adapted for temporary use in different locations for dispensing refreshments.

Soft drink and other refreshment vendors are frequently required to dispense soft drinks to gatherings of people at locations where no permanent facilities are available. To present an attractive appearance, and enhance the appeal of the refreshments, the dispensing facilities must be structurally clean and neat, and free from any makeshift characteristics of appearance.

Conventionally, such dispensing facilities are built on location from lumber, and after use, they are dismantled so that the lumber may be used again. Such conventional structures require some skill and much expense to construct, dismantle, and transport. Moreover, the materials of construction are bulky and difficult to handle. Prefabrication and modular techniques have been applied to a limited extent but have not provided a satisfactory solution to the storage, transportation and weight problems involved.

An object of the present invention is to provide a light-weight, readily demountable, easily transportable, reusable structure for a dispensing stand, characterized by compactness when dismantled for storage and transportation.

Another object of the invention is to provide a demountable stand structure which, when assembled, provides an appearance of permanency and attractiveness which adds to the appeal of the product being dispensed.

Still another object of the invention is to provide a demountable stand structure which may be assembled with or without a covering roof, as desired or required, and which has an attractive appearance in each case.

A further object of the invention is to provide structural assembly units and novel fastening means therefor for use in constructing and assembling shelters and structures of various types.

Other objects of the invention will become apparent from the following description and the drawings, which describe and illustrate a specific embodiment of the invention in which all of the foregoing objects are attained.

In the specific embodiment of the invention illustrated in the drawings and described in detail hereinafter the demountable stand structure comprises a plurality of base sections which are formed to interlock detachably to form a continuous vertical framework around an enclosed area, from the framework thus formed a roof structure may be supported on uprights or support columns mounted in the base sections.

Each base section is made of lengths of standard pipe welded together and including a top bar, a bottom bar, and side posts interconnecting the top and the bottom bars, and a shelf portion hingedly mounted on the top bar. Interfitting locking members are mounted on the side posts of its several base sections so that adjacent sections may be detachably interlocked to form the continuous vertical enclosure. Cooperating locking means are mounted on the several shelf portions so that the shelf portions may be interlocked to provide a continuous, horizontal shelf surface, when several base sections are interlocked together.

When the base sections are detached, the shelf portion of each can be rotated about the top bar on which it is mounted to assume a position parallel to the section, for compactness in storage and simplicity in handling.

The interlocked sections, with their several shelf portions interlocked form a complete structure in and of themselves, usable as a dispensing stand. To support a cover for the dispensing stand, uprights or support columns are mounted in the base sections to extend upwardly to support a roof truss consisting of transverse horizontal pipes between adjacent support columns, and rafters extending from each support column to a central spider or socket member through which the rafters are secured together for mutual support.

The base sections and the roof may be covered with fabric or other sheathing material to provide shelter.

The details of the invention may be best understood by consideration of the drawings, taken together with the following detailed description thereof.

In the drawings:

Fig. 1 is a perspective view of a completely assembled dispensing stand constructed according to one embodiment of the invention;

Fig. 2 is another perspective view thereof, with the roof covering fabric, sidewall fabric, and the signs removed in order to illustrate the structural components more clearly;

Fig. 3 is an exploded perspective view of the various elements of the structure disassembled, but showing their relative positions in the assembly;

Fig. 4 is a partial perspective view, on a greatly enlarged scale, showing the fastening means for securing together adjoining base sections;

Fig. 5 is a section taken on the line 5—5 of Fig. 2 looking in the direction of the arrows;

Fig. 6 is a partial perspective view, on an enlarged scale, showing the fastening means for securing together a support column or upright, and two transverse pipes and a rafter of the roof structure; and

Fig. 7 is a partial perspective view, on an enlarged scale, showing the spider for interconnecting the roof rafters.

Referring now in detail to the drawings, the knockdown stand comprises four base sections, a front base section **10**, a rear base section **11**, and two side base sections **12** and **13**. The front and rear sections **10** and **11** are alike; and the two side sections **12** and **13** are alike. Each base section comprises a horizontal top bar **15**, a parallel horizontal bottom bar **16**, two vertical end posts **17** which connect the top and bottom bars of the section, an intermediate brace bar **18** disposed transversely between the top and bottom bars **15** and **16** of the section intermediate the lengths of the top and bottom bars of the section, and a shelf portion **20** hingedly connected to the top base of its sections. The top bars **15**, bottom bars **16**, and posts **17**, and brace bars **18** of the several sections are tubular in construction and preferably are made from suitable lengths of pipe. The top bars **15** of the front and rear sections **10** and **11** preferably seat on the tops of the side posts **17** of those sections, and are welded to those side posts **17** to close the top ends of the side posts. The top bars **15** of the side sections **12** and **13** are preferably welded to abut at their ends against the side posts **17** of those sections, to leave the upper ends of those side posts **17** open for a purpose to be described hereinafter.

The shelf portion **20** of each section is hingedly mounted on the section by means of clips **22**, the shanks

of which are secured by screws 23 to the sections, and the half round portions 24 of which engage around the top bar 15 of its section. The shelf portions 20 are notched as denoted at 28 and 29 at opposite ends so that when the stand is erected with the several sections in vertical position and with the shelf portions raised, the shelf portions will interfit properly with one another.

The posts 17 of the front and rear sections 10 and 11 have angle brackets 26 welded thereto in the general plane of the section. Each post 17 of each side section 12 and 13 has a U-shaped strap or socket 27 welded thereto to extend at right angles to the general plane of the side section. These sockets 27 are adapted to receive the male lugs or clips 26 of the front and rear sections to lock the several sections together in assembled relation. The lower lug 26' on each side post is longer than the upper lug to facilitate guiding the lugs and clips to assembled relation. The shelf portions 20 of the front and rear sections have sliding bolt members 30 of conventional bolt locks slidably secured thereto by clips 31; and these are adapted to engage in keepers 32 on the shelf portions 20 of the side sections 12 and 13 when the several shelf portions 20 are raised to horizontal position after the sections themselves have been erected in vertical position, thereby to lock the several shelf portions in horizontal position and form a continuous shelf around the erected stand.

A stand can be erected by simply connecting the several base sections 10, 11, 12 and 13 together. However, if it is desired to provide the stand with some superstructure, support columns or uprights 35, comprising suitable lengths of pipe, may be connected to the posts 17 of the side sections 12 and 13. For this purpose, plugs 36 are driven in, or welded to the lower ends of the uprights 35 to fit into the open upper ends of the posts 17 of the side sections 12 and 13. The plugs 36 are of smaller diameter than the outside diameter of the uprights and of the posts 17, being of approximately the diameter of the bores of the pipe lengths forming uprights 35 and posts 17, so that they can readily interlock the posts 17 of the side sections with the uprights 35. Each upright 35 has a pair of U-shaped straps 42 welded thereto and spaced 90° apart, and an open upper end that serves as a socket 40. The straps 42 are adapted to receive clips 44 on the ends of transverse horizontal connecting pipes 45 for connecting the several uprights together to brace the superstructure.

If desired the stand may be covered at its top. For this purpose a truss may be provided comprising the several rafters 50, whose ends are bent downwardly to enter the sockets 40. One of these rafters, denoted, at 50', has a spider or socket member 52 welded to it, which is provided with a plurality of socket portions 54 that are adapted to receive the other rafter members 50 to hold the whole truss together. Preferably, the downwardly-bent ends of the rafters 50 are not bent to true vertical, so that there is frictional engagement between the end of each rafter and its socket 40.

Where it is desired to use signs to advertise the wares being sold at the stand, shields such as denoted at 60 may be employed. Each of these shields may have angular clips, similar to the clips 26, welded to it at its back. These clips are adapted to be engaged in the U-shaped socket members 64 which are welded to the uprights 35.

If desired the bottom sections of the stand may be enclosed by canvas strips 62 laced thereto. Likewise, the roof structure may be covered by a canvas covering 64.

There is thus provided a structure which is simple to assemble, has a neat appearance, and has few parts. When the shelf portions are not interlocked, each shelf portion will normally rotate on its top bar under the influence of the extra weight of the exended outboard edge on each end thereof, so that the shelf portion will hang down on the outboard side of the base section, as indicated in dotted lines in Fig. 5. This provides a very compact section for storage, handling, and transportation.

When the sections are assembled, with the roof, the roofed stand has the finished appearance of a permanent structure, and because of its desirable appearance, enhances the appeal of the products which are to be dispensed from the stand. The structure is readily assembled, and easily dismantled. No particular skill is required for either assembly for dismantling. Its parts are few in number and occupy a minimum amount of storage space. It is constructed from standard pipe that is readily available.

In the specific embodiment of the invention just described, and illustrated in Figs. 1 through 7 of the drawings, the stand has a pair of opposed front and rear base sections on which the female locking sockets are mounted, and another pair of opposed side base sections on which the male locking pins are mounted. The four base sections are interlocked to enclose a square area. To enclose a larger rectangular area, in which two sides are longer than the other, the same "female" base sections may be employed, while "male" side sections are employed which are of greater length, but are otherwise structurally similar to those employed to enclose a square area. By the substitution of side base sections of selected sizes, and by the use of roof trusses of corresponding proportions, stands of different shapes and sizes may be assembled from a minimum stock of parts. This offers considerable economy in inventory of the structural components if several stand sizes are desired to be available.

Dispensing stands of this construction are rugged because of their tubular framework, and also because the locking means between adjoining base sections are strongly supported. Thus, the male lugs are in the general plane of the "male" base section, while the female sockets are at right angles to the general plane of the "female" base section, but do fall in the plane of the "male" section. The stresses to which the locking members are subjected are therefore minimized and a maximum proportion of the stress is taken by the framework rather than the locking members.

The component parts of the stand illustrated and described are susceptible of partial assembly, if desired, to suit the circumstances. Thus, for example, only two or three shelf sections may be locked in operative position, in some cases. The support columns may be used, when a roof is not necessary, for the sole purpose of carrying advertising banners, shields, or other materials.

Other modifications will occur to those skilled in the art which are within the spirit of the invention. For example, while the embodiment of the invention just described is simple to manufacture and permits of the assembly of "male" base sections of different sizes with a single pair of "female" base sections, and vice versa, some other advantages are offered by a construction in which the base sections are adapted to be interlocked serially, head-to-tail fashion. In this modification of the invention, the side post at one end of a base section has mounted thereon the male locking pins, while the side post at the other end of the base section has female locking sockets mounted thereon. The shelf portions are cut at each end thereof at an angle of approximately 45°, to engage the shelf portions of adjoining base sections in a stand enclosing a rectangular area. One side post of each section, at a selected single end of each section, is open for the insertion therein of the reduced end of an upright or support column. Thus, each section is identical with every other section, and manufacture and assembly are greatly simplified. At the same time, this modified embodiment of the invention is sufficiently flexible so that by the use of base section of a desired size, a rectangular area may be enclosed of any desired dimensions.

While the invention has been described in connection with specific embodiments thereof, then, it will be under-

stood that it is capable of further modification, and this application is intended to cover any variations, uses, or adaptations of the invention following, in general, the principles of the invention and including such departures from the present disclosure as come within known or customary practice in the art to which the invention pertains and as may be applied to the essential features hereinbefore set forth, and as fall within the scope of the invention or the limits of the appended claims.

Having thus described my invention what I claim is:

1. A demountable stand structure comprising a plurality of base sections formed to interlock detachably to form a continuous enclosure, each section including a shelf portion hinged thereon along a longitudinal central axis of said shelf to be supported on said section parallel thereto when said sections are detached and each shelf portion having means thereon to interlock detachably with the shelf portions on adjacent sections when said sections are interlocked to form a horizontal shelf surface.

2. A demountable stand structure comprising a plurality of base sections formed to interlock detachably to form a continuous enclosure, each section including a shelf portion hinged thereon along a longitudinal central axis of said shelf to be supported on said section parallel thereto when said sections are detached, and each shelf portion having means thereon to interlock detachably with the shelf portions on adjacent sections when said sections are interlocked to form a horizontal shelf surface, each shelf portion having its edges contoured to form a flush joint with the edges of abutting shelf portions to provide a shelf surface extending continuously around said enclosure.

3. A demountable dispensing stand structure comprising a plurality of base sections each constructed of interconnected tubular members and each including a top bar, a bottom bar, and side posts interconnecting said top and bottom bars, male and female locking means respectively mounted on the side posts of adjacent sections to permit detachable interlocking of said sections to form a continuous enclosure, said male locking means lying in the general plane of the section on which they are mounted, said female locking means lying at right angles to the general plane of the section on which they are mounted, and a shelf portion hingedly mounted along a longitudinal central axis of said shelf on the top bar of each section to be supported parallel to said section when said sections are detached, each shelf portion having means thereon to interlock with the shelf portion on adjacent sections so that said shelf portions are mutually supporting in a horizontal plane when said sections are interlocked.

4. A demountable dispensing stand structure comprising a plurality of base sections each constructed of interconnected tubular members and each including a top bar, a bottom bar, and side posts interconnecting said top and bottom bars, locking means mounted on the posts of adjacent sections to permit detachable interlocking of said sections to form a continuous enclosure, and a shelf portion hingedly mounted along a longitudinal central axis of said shelf on the top bar of each section to be supported parallel to said section when said sections are detached, and each shelf portion having means thereon to interlock with the shelf portions on adjacent sections to hold said shelf portions in a horizontal position when said sections are interlocked, each shelf portion having its edges contoured to mate with the edges of abutting shelf portions to provide a single shelf surface extending continuously around said enclosure and to extend beyond at least one side post of said section to limit angular movement of said shelf portion about its top bar.

5. A demountable dispensing stand structure comprising four base sections each constructed of interconnected tubular members and each including a top bar, a bottom bar, and side posts interconnecting said top and bottom bars, locking means mounted on the side posts of adjacent sections to permit detachable interlocking of said sections to form a continuous enclosure, and a shelf portion hingedly mounted along a longitudinal central axis of said shelf on the top bar of each section to be supported parallel to said section when said sections are detached, each shelf portion having means thereon to interlock with the shelf portions on adjacent sections to hold said shelf portions in a horizontal position when said sections are interlocked, each shelf portion having its edges notched to mate with the edges of abutting shelf portions to provide a single shelf surface extending continuously around said enclosure and to extend beyond at least one side post of said section to limit angular movement of said shelf portion about its top bar.

6. A demountable dispensing stand structure comprising four base sections each constructed of interconnected tubular members and each including a top bar, a bottom bar, and side posts interconnecting said top and bottom bars, locking means mounted on the side posts of adjacent sections to permit detachable interlocking of said sections to form a continuous enclosure, an opposed pair of said sections having female portions of said locking means mounted on the side posts of each section and the other opposed pair of said sections having the male portions of said locking means mounted on the side posts of each section, and a shelf portion hingedly mounted along a longitudinal central axis of said shelf on the top bar of each section to be supported parallel to said section when said sections are detached, each shelf portion having means thereon to interlock with the shelf portions on adjacent sections to hold said shelf portions so as to be horizontal when said sections are interlocked.

7. A demountable dispensing stand structure comprising a plurality of base sections each constructed of interconnected tubular members and each including a top bar, a bottom bar, and side posts interconnecting said top and bottom bars, locking means mounted on the side posts of adjacent sections to permit detachable interlocking of said sections to form a continuous vertical enclosure, each section having the female portion of said locking means mounted on one side post thereof and the male portion of said locking means mounted on the opposite side post thereof whereby said sections may be serially interconnected, and a shelf portion hingedly mounted along a longitudinal central axis of said shelf on the top bar of each section to be supported parallel to said section when said sections are detached, each shelf portion having means thereon to interlock with the shelf portions of adjacent sections to hold said shelf portions in a horizontal position when said sections are interlocked.

8. A demountable stand structure comprising a plurality of base sections formed to interlock detachably to form a continuous enclosure, a shelf portion hinged along a longitudinal central axis of said shelf on each section to be supported on said section parallel thereto when said sections are detached, each shelf portion having means thereon to interlock with the shelf portions on adjacent sections to hold said shelf portions in a horizontal position when said sections are interlocked, support columns detachably secured to said sections and extending upward therefrom, and a roof detachably mounted on said support columns.

9. A demountable stand structure comprising a plurality of base sections formed to interlock detachably to form a continuous enclosure, a shelf portion hinged along a longitudinal central axis of said shelf to each section to be supported on said section parallel thereto when said sections are detached, each shelf portion having means thereon to interlock with the shelf portions of adjacent sections to hold said shelf portions in a horizontal position when said sections are interlocked, support columns detachably secured to said framing members and extending upward therefrom, and a roof detachably mounted on said support columns and comprising a tie beam mounted between each pair of adjacent

support columns, a rafter mounted on each column and means interconnecting said rafters for mutual support.

10. A demountable dispensing stand structure comprising a plurality of base sections each constructed of interconnected tubular members and each including a top bar, a bottom bar, and side posts interconnecting said top and bottom bars, locking means mounted on the side posts of adjacent sections to permit detachable interlocking of said sections to form a continuous enclosure, a shelf portion hingedly mounted along a longitudinal central axis of said shelf on the top bar of each section to be supported parallel to said section when said sections are detached, each shelf portion having means thereon to interlock with the shelf portions on adjacent sections to hold said shelf portions in a horizontal position when said sections are interlocked, a support column detachably mounted in one side post of each section and extending upward therefrom, there being one support column at the juncture of each two sections, a roof detachably mounted on said support columns.

11. A demountable dispensing stand structure comprising a plurality of base sections each constructed of interconnected tubular members and each including a top bar, a bottom bar, and side posts interconnecting said top and bottom bars, locking means mounted on the side posts of adjacent sections to permit detachable interlocking of said sections to form a continuous enclosure, a shelf portion hingedly mounted along a longitudinal central axis of said shelf on the top bar of each section to be supported parallel to said section when said sections are detached, each section having means thereon to interlock with the shelf portions on adjacent sections to hold said shelf portions in a horizontal position when said sections are interlocked, each shelf portion having its edges contoured for flush engagement with the edges of abutting shelf portions to provide a single shelf surface extending continuously around said enclosed area and to extend beyond at least one side post of said section to limit angular movement of said shelf portion about its top bar, support columns detachably secured to said sections and extending upwardly therefrom, and a roof detachably mounted on said support columns and comprising a tie beam secured between each pair of adjacent columns, a rafter mounted on each column, and a spider interconnecting said rafters for mutual support.

12. A demountable dispensing stand structure comprising four base sections each constructed of interconnected tubular members and each including a top bar, a bottom bar, and side posts interconnecting said top and bottom bars, locking means mounted on the side posts of adjacent sections to permit detachable interlocking of said sections to form a continuous enclosure, an opposed pair of said sections having female parts of said locking means mounted on each side post of each section, the other opposed pair of said sections having corresponding male parts of said locking means mounted on each side post of each section a shelf portion hingedly mounted along a longitudinal central axis of said shelf on the top bar of each section to be supported parallel to said section when said sections are detached, each shelf portion having means thereon to interlock with the shelf portions on adjacent sections to hold said shelf portions in a horizontal position when said sections are interlocked, each shelf portion having its edges notched for flush engagement with the edges of abutting shelf portions to provide a single horizontal shelf surface extending continuously around said enclosed rectangular area and to extend beyond at least one side post of said section to limit angular movement of said shelf portion about its top bar, a support column detachably secured in each side post of each section in one opposed pair of said sections and extending upwardly therefrom, and a roof detachably mounted on said support columns comprising a tie beam secured between each pair of adjacent columns, a rafter mounted on each column, and a spider interconnecting said rafters at a central location for mutual support.

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