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S. H. MARKS

2,639,819

KNOCKDOWN SHELVING

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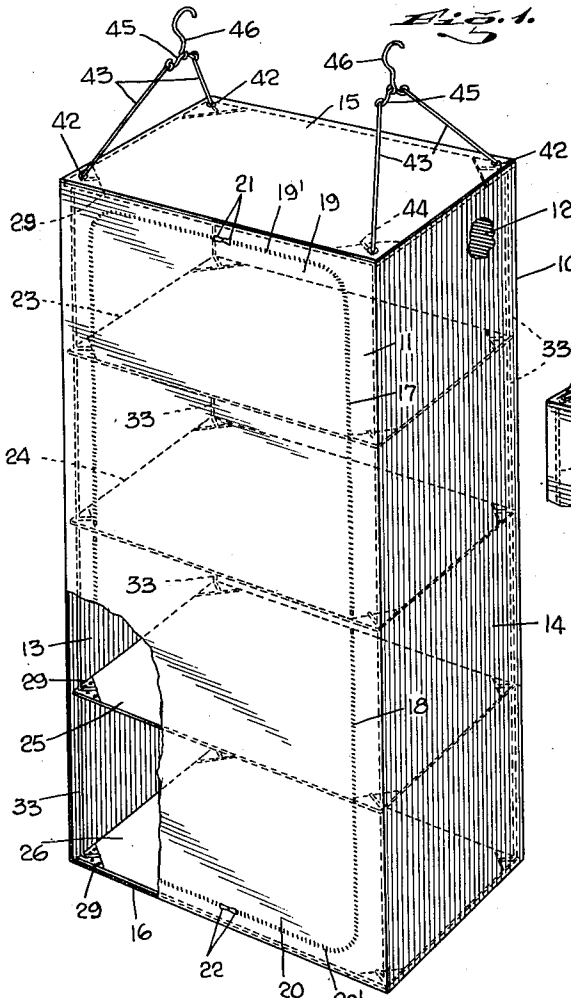


Fig. 4.

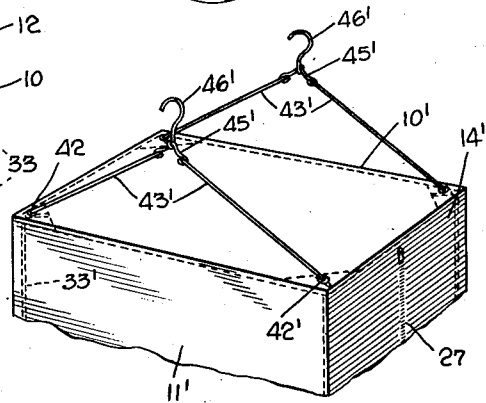


Fig. 3.

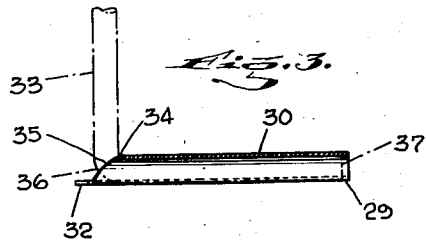
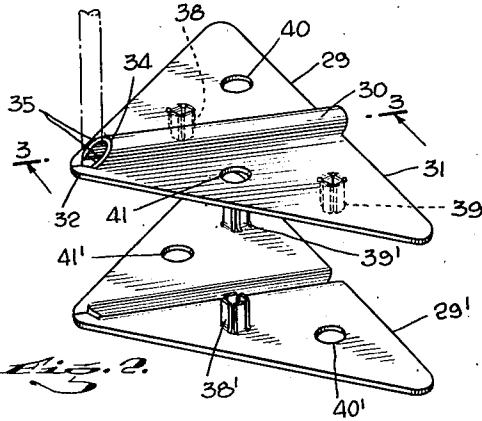


Fig. 2.



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KNOCKDOWN SHELVING

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This invention relates to containers in the form of a flexible walled body having means for collapsibly supporting a plurality of horizontal shelf and other wall members therein to form a shelved container unit with upper means at the upper portion of the unit for hanging the same in connection with a suitable support. More particularly, the invention deals with a device of the character described, having shelf members with corner brackets for receiving shelf spacing and coupling rods and for maintaining said rods in perpendicular position with respect to the shelves.

The novel features of the invention will be best understood from the following description, when taken together with the accompanying drawing, in which certain embodiments of the invention are disclosed and, in which, the separate parts are designated by suitable reference characters in each of the views and, in which:

Fig. 1 is a perspective view of one form of device which I employ with part of the construction broken away and in section.

Fig. 2 is an exploded perspective view of two similar corner brackets employed on the shelves of the device for reception of spacing and supporting rods.

Fig. 3 is a partial section on the line 3-3 of Fig. 2; and

Fig. 4 is a view similar to Fig. 1 showing only part of the construction and showing a modification.

In Fig. 1 of the drawing, I have shown at 10 a flexible walled container having relatively wide front and back walls 11 and 12 and narrow side walls 13 and 14 suitably joined to form a tubular body and finished at upper and lower ends in top and bottom wall members 15 and 16. The various walls of the container 10 can be composed of any suitable, flexible and readily foldable material or fabric and, in some instances, transparent or translucent plastic materials can be employed. In the construction shown in Fig. 1, the front wall 11 has two large rectangular openings 17 and 18 controlled by door or closure members 19 and 20 by U-shaped arrangement of separable fasteners 19', 20' having double sliders, respectively, at 21 and 22. The fastener arrangement 19' is such as to facilitate lowering of the upper door 19 by respectively giving access to the upper compartments, the bottom or shelf members of which are indicated at 23 and 24, whereas, the bottom door 20 is adapted to be opened upwardly to give access to compartments having bottom shelves 25 and 26.

At this time, it is well to consider the brief showing in Fig. 4 of the drawing, where I have

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indicated at 10' a modified form of container which will differ from the container 10 primarily in having one long separable fastener 27 arranged centrally and longitudinally of one of the side walls, for example, the wall 14'. The device of Fig. 4 differs also from Fig. 1 in the hanger mechanism employed which will be later described.

Arranged inwardly of and abutting the top wall 15 is a shelf 28, similar to the shelves 23, 24 and 25. All of these shelves have, at corner portions thereof, and at upper and lower surfaces of the corner portions, similar triangular brackets 29, the upper brackets only being indicated in Fig. 1. However, the companion lower bracket 29' is illustrated in Fig. 2. This bracket is identical to the bracket 29 but simply mounted in an inverted position. In view of the similarity of the brackets 29, 29', the brief description of one will apply to both.

The bracket 29 is formed from a single sheet of material fashioned centrally to form an elongated cylinder 30. The cylinder extends from the central portion of the long side 31 of the plate to the corner portion 32 thereof, the cylinder being formed by simply bending this part of the sheet and shaping it to the cylindrical form. The end of the cylinder 30, adjacent the corner 32, is bevelled so as to dispose shelf coupling and supporting rods 33 at the corner portions of the device and the bevelling, which is generally indicated at 34, has outwardly rounded side walls 35 adapted to engage bends in the rods 33 where the angularly extending mounting ends 37 of the rods join the vertical portions thereof. These offset wall portions 35 maintain the rods 33 against swinging movement or, in other words, in a perpendicularly erect position and this, in combination with the arrangement of the rods at all corner portions of the device, maintains rigidity throughout the complete assemblage.

The shelves 25 can be composed of any suitable thin but firm material such as fibreboard, metal, plastics or the like, and this shelf will be adapted to receive, at the corner portions thereof, four prong or split rivet members, namely the members 38 and 39 of the plate 29, and corresponding members 38' and 39' of the plate 29'.

The plate 29 has apertures 40, 41 and the plate 29' has corresponding apertures 40', 41' and, in coupling two of the bracket plates 29, 29' to each corner portion of a shelf, it will be apparent that the prong or split rivet portions 38, 39 pass through the apertures 41', 40' respectively, whereas the members 38', 39' pass through the apertures 41, 40, respectively. These prongs or

rivets are clinched-over in securing the plates in position.

The bottom shelf 26 will have the plates 29 secured to the upper surface only of said shelf 26 and any suitable means, such as a dummy plate can be arranged on the lower surface of the shelf 26 for reinforcing and securing the plates 29 in position.

The upper wall 15 of the container 10 has eyelets 42 in the corner portions thereof, through which rods 43, having offset mounting ends 44, are arranged, these ends engaging upper corner plates 29 as will be apparent and, flexibly coupled with the rods 43, are yokes 45 with which supporting hooks 46 are coupled, these hooks providing means for hanging the complete device upon a rod or in connection with other supports.

In Fig. 4 of the drawing, I have shown a slight modification in the hanger, wherein rods 43' extend from the side walls of the container toward each other, rather than being joined across the side walls, as seen at Fig. 1. With this construction, yokes 45' and supporting hooks 46', similar to the yokes 45 and 46, are employed.

It will be understood that the rods 33 have offset mounting ends 37 at both upper and lower ends thereof. The offset lower ends are coupled with the plates 29 which can be regarded as the top plates for sake of description and the offsets at the upper ends of the rods are coupled with the lower or bottom plates 29'. With the separable fastener construction shown, it will be apparent that the dual sliders 21 and 22 can be moved laterally to give access to first the top or the bottom shelf, or the fasteners may be opened to a greater extent to give access to the intermediate shelves. It will be apparent that any desired arrangement of shelves can be employed.

In the shipment of the device, the entire flexible container will assume a flat compact package with the respective shelves arranged one upon the other in this package, all of the rods 33, as well as the hangers 43, being detached. In assembly, the shelves are placed in the container with rods 33 coupled with upper corner portions thereof and the shelves are successively coupled until the complete assemblage has been produced.

Devices of the kind under consideration can be used for the convenient storage of articles of any type and kind. The articles will be protected against the collection of dust and dirt and will be accessible for removal from any one of the shelf members whenever desired. In some instances, the entire container, except for the open side thereof, can be composed of opaque material, but the opening side is preferably transparent or, at least, translucent, so as to determine articles arranged upon the respective shelves.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A shelf construction of the character described comprising a plurality of shelves, having channeled triangular brackets at corner portions thereof, the channels of the brackets being arranged diagonally thereon, rigid rods having angularly disposed coupling ends adapted to enter the channels of said brackets, brackets of intermediate shelves being disposed upon upper and lower surfaces of the shelves, whereby, in coupling the rods therewith, said rods join, support and space the shelves one with respect to another in forming a shelf assemblage, and hang-

ers detachably coupled with upper brackets of an upper shelf in a series.

2. A shelf construction comprising a plurality of horizontally disposed shelf members arranged one above the other in spaced relationship, corner portions of said shelf members having triangular corner brackets channeled diagonally, the brackets of intermediate shelves being disposed upon the upper and lower surfaces thereof and being of common construction, and rigid rods having angularly extending ends detachably coupled with the channels of said brackets for coupling, supporting and spacing the shelf members one with respect to the other.

3. A shelf construction comprising a plurality of horizontally disposed shelf members arranged one above the other in spaced relationship, corner portions of said shelf members having triangular corner brackets channeled diagonally, the brackets of intermediate shelves being disposed upon the upper and lower surfaces thereof and being of common construction, rigid rods having angularly extending ends detachably coupled with the channels of said brackets for coupling, supporting and spacing the shelf members one with respect to the other, and means on the channels of said brackets engaging the rods, maintaining the rods in perpendicular position on said brackets.

4. A shelf construction comprising a plurality of horizontally disposed shelf members arranged one above the other in spaced relationship, corner portions of said shelf members having triangular corner brackets channeled diagonally, the brackets of intermediate shelves being disposed upon the upper and lower surfaces thereof and being of common construction, rigid rods having angularly extending ends detachably coupled with the channels of said brackets for coupling, supporting and spacing the shelf members one with respect to the other, means on the channels of said brackets engaging the rods, maintaining the rods in perpendicular position on said brackets, and hangers coupled with the upper brackets of the top shelf member and extending above the upper portion of said shelf member.

5. A shelf construction comprising a plurality of horizontally disposed shelf members arranged one above the other in spaced relationship, corner portions of said shelf members having triangular corner brackets channeled diagonally, the brackets of intermediate shelves being disposed upon the upper and lower surfaces thereof and being of common construction, rigid rods having angularly extending ends detachably coupled with the channels of said brackets for coupling, supporting and spacing the shelf members one with respect to the other, and each bracket having a pair of sockets and a pair of split rivets engaging the sockets of an opposed bracket in securing the brackets to the shelf members.

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