April 29, 1969 M. K. SUMMERS 3,441,146

SECTIONALIZED RACK ASSEMBLY

Filed Dec. 22, 1966

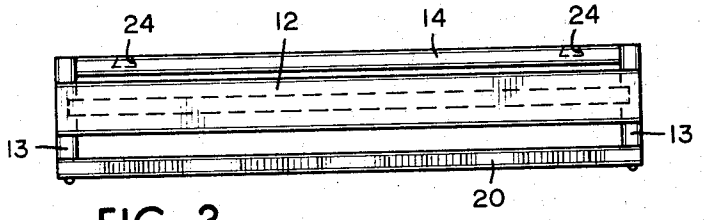

FIG. 3

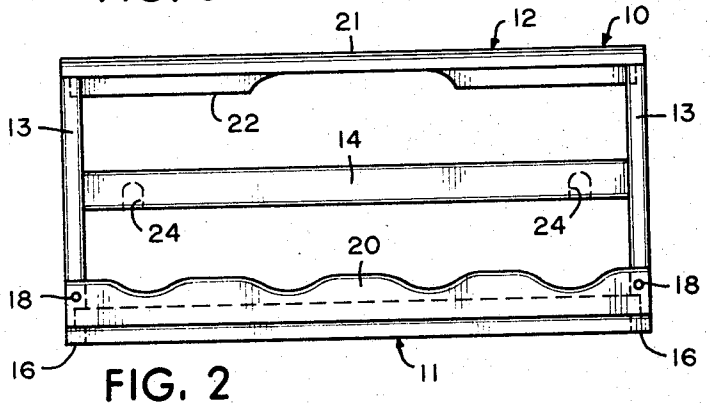

FIG. 2

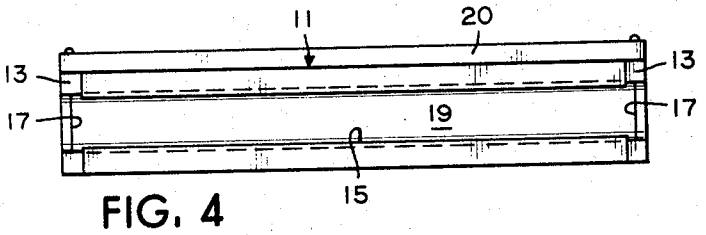

FIG. 4

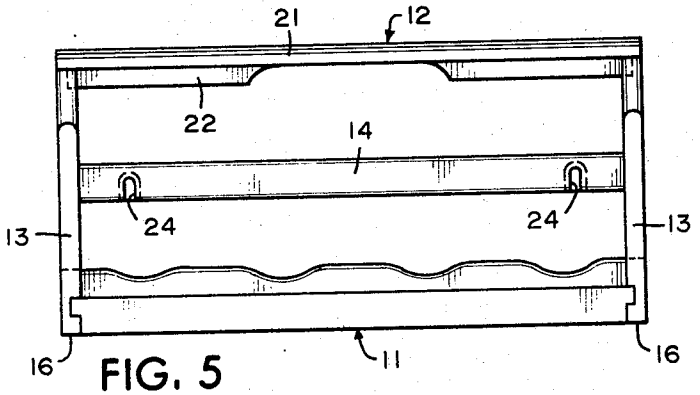

FIG. 5

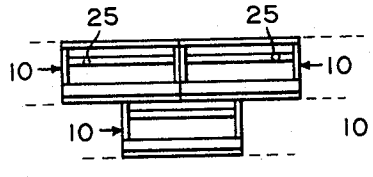

FIG. 6

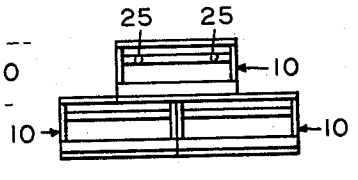

FIG. 7

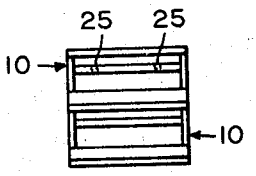

FIG. 8

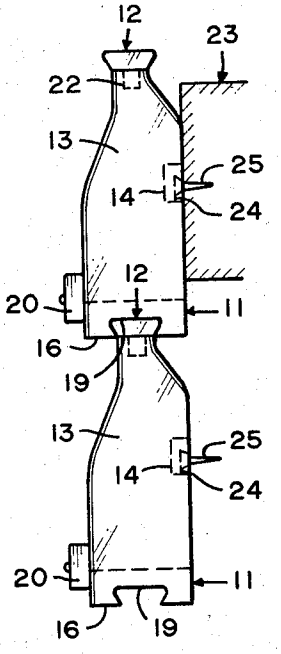

FIG. 1

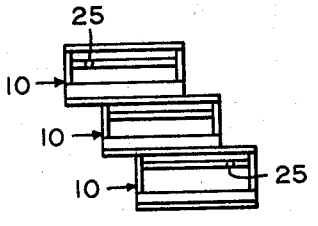

FIG. 9

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SECTIONALIZED RACK ASSEMBLY

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ABSTRACT OF THE DISCLOSURE

The rack includes a base member, a handle member and side members interconnecting the base member and handle member to form a frame. The handle member forms a rail, and the base member includes a groove receiving the rail of an associated like rack in adjustable relation. The interlocking nature of the handle member and groove permits the racks to be assembled in multiple tier arrangements.

This invention relates generally to improvements in an adjustable rack assembly, and more particularly to a rack assembly useful in the kitchen and shop for the storage and display of canned and packaged goods and other articles, and especially for the storage and display of spice bottles.

The reluctance of the storekeeper and housewife to waste space by providing storage for more goods than can be accommodated at any one time invariably results in an inefficient utilization of storage space. Racks are a popular and efficient method of utilizing space and it is the principal object of the present invention to provide an assembly of racks whose storage capacity may be augmented or reduced by the simple method of adding or removing sections as required.

Another important object is achieved by providing sectionalized rack assemblies in which a rack may be located, relocated or removed by simply sliding the racks relative to each other.

An important object is the provision of a rail and a groove on each rack such that the rail on any one rack slidably interfits with the groove on any other rack to form a tongue and groove connection.

A further important object is realized in that the rail and groove connection is dovetail in configuration, thereby inhibiting relative movement between racks in a direction perpendicular to the direction of sliding.

Yet another important object is achieved in that each rack includes a basic quadrilateral frame having an upper element, a base element and two side elements. A median strengthening element is also provided, said element including means for attaching the rack to a support.

It is an important object to provide a sectionalized rack assembly in which the racks may be disposed in tiers with alternate tiers aligned in the manner of bonded brickwork with a resultant binding of the individual racks into a compact assembly.

Still another important object is realized in that although provision is made whereby individual racks may be attached to a support such as a wall, it is unnecessary to attach each rack of the assembly since the structural integration of several racks into one storage unit allows the assembly to be attached with the minimum of fasteners.

An important object is to provide a rack assembly which is simple and durable in construction, economical to manufacture and efficient in operation.

The foregoing and numerous other objects and advantages of the invention will more clearly appear from the following detailed description of a preferred embodiment, particularly when considered in connection with the accompanying drawing, in which:

FIG. 1 is an end view illustrating two racks mounted one above the other;

FIG. 2 is a front elevational view of an individual rack;

FIG. 3 is a top plan of the rack;

FIG. 4 is a bottom plan view of the rack illustrating the longitudinal groove;

FIG. 5 is a rear elevational view of the rack; and

FIGS. 6, 7, 8 and 9 illustrate four of the many arrangements of rack assembly which are possible, using two or more racks.

Referring now by characters of reference to the drawing, and first to FIGS. 1 and 2, it will be understood that the rack includes an elongate base element **11** constituting a base means, an upper element **12** forming a handle and constituting a handle means, and side elements **13** attached to each end of the base element **11** and the upper element **12** to form a rectangular frame **10**. A median bar **14** extending between and connected to side elements **13** serves to stiffen the frame **10**.

The underside of base element **11** is provided with a dovetail groove **15** extending longitudinally and continuously along the entire length of the base element **11**. The side elements **13** are rigidly attached at their lower ends to the base element **11**. Because the base element **11** butts up against the inside faces of side elements **13**, the lower ends **16** of the side elements **13** are provided with dovetail slots **17** which match the configuration of the longitudinal dovetail groove **15**, and hence effectively provide a continuous groove **19** running the entire length and opening at each end of the rack.

Rigidly attached to the front face of the frame **10** with the aid of fasteners **18** is a fascia member **20** which provides retention means for articles stored on base element **11** and also serves to stiffen the frame **10**.

The elongate upper element **12** is preferably of a substantially T-shape in cross section to facilitate n adequate connection of its ends to the upper portion of side elements **13**. The lateral flange of the substantially T-shaped upper element **12** has a dovetail configuration matching that of the longitudinal groove **19** provided in the underside of the base element **11** so that the flange forms a rail **21** which will slidably interfit the groove **19** of an associated rack and will provide lapping shoulders inhibiting the disconnection of the rail **21** and groove **15** in a direction perpendicular to the direction of sliding. The outstanding leg **22** of the substantially T-shaped upper element **12**, depending from the flange **21**, is cut away in the midportion of upper elongate element **12** to form a convenient carrying handle.

The median bar **14** has its ends preferably butt connected to the side faces of the side elements **13** so that the outer face of the bar **14** and the rear edges of the side elements **13** form a flush face.

As a means of attaching the frame **10** to a supporting surface generally indicated by **23**, dovetail slots **24**, each slot **24** having one end closed, are provided in the rear of median bar **14**. The closed ends of these slots **24** act as stops to the heads of fasteners **25** projecting from the supporting surface **23**.

It is thought that the functional advantages of the sectionalized rack assembly have become fully apparent from the foregoing description of parts, but for completeness of disclosure, the installation and usage of the racks will be briefly described.

FIG. 1 clearly illustrates the mode of interconnecting two racks. This is achieved by aligning the elongate upper element **12** of one rack with the elongate base element **11** of another associated rack so that the rail **21**, integrated

into the elongate upper element **12** of the lower rack, may slidably inserted into the groove **19** provided in the underside of the elongate base element **11** of the upper rack.

Full insertion of the rail **21** within the groove **19** will result in an arrangement as is shown in FIG. 8. FIG. 9 shows a typical, progressively stepped arrangement resulting from only partial insertion of the rails **21** of subjacent racks within the grooves **19** of associated and superjacent racks. FIGS. 6 and 7 illustrate particularly efficient arrangements of three racks.

In these arrangements, a rack of one tier has a parallel disposition with, and rail and groove connection to, each of two racks of a vertically adjacent tier. The rack of the said one tier provides a rap connection with each each of the two racks of the said other tier. It will be clear that racks may be added either horizontally or vertically in such arrangements.

The interlocking rail and groove connection between adjacent tiers of racks, of course, strengthens the resulting framework of a rack assembly, and if it is desired to hang said resulting framework on a supporting surface **23**, it will not be necessary to utilize all of the available support points provided by dovetail slots **24** in the median bars **14** of individual racks. In many cases it will be sufficient to utilize only the support means provided by the upper, outermost dovetail slots **24** of a given assembly, in conjunction with fastener heads **25** provided at such points.

In each of the rack assemblies described above, the racks are disposed in tiers with the centers of gravity of vertically adjacent racks offset in the longitudinal direction to provide a force couple between the longitudinal rail and groove connection that binds the individual racks into a structurally integrated compact assembly.

Although wall fastenings will probably be the most commonly used mode of supporting the racks in multiple tiers, it is also very easy to suspend one or more racks from a horizontal support provided with a groove on its underside similar to the groove **19** provided on the underside of the individual racks, so that the rail **21** may be conveniently inserted in such horizontal support groove. Alternatively, a rail may be provided on the upper face of a horizontal support, the rail having a configuration matching that of rail **21**. The racks may then be built upwardly from the horizontal support rail, after an initial base has been formed by inserting the horizontal support rail into groove **19** of one or more racks, by inserting the rail **21** of each rack into a compatible groove **19** of a superjacent rack.

Although the invention has been described by making detailed reference to a single preferred embodiment, such detail is to be understood in an instructive rather than in any restrictive sense, many variations being possible within the scope of the claims hereunto appended.

I claim as my invention:

1. A rack for storing containers and the like, comprising:

(a) an elongate base framing element,

(b) an elongate handle framing element above the base framing element,

(c) side elements interconnecting the base element and handle element to form a frame,

(d) one of said latter two elements provided with a groove, and

(e) the other of said latter two elements constituting a rail,

(f) the rail and the groove being adapted to interfit slidably a compatible groove or rail respectively.

2. A rack as defined in claim **1**, in which:

(g) the handle framing element constitutes a unitary rail, and the rail and groove interfit slidably compatible grooves or rails respectively of associated racks, whereby to interconnect such racks.

3. A rack assembly for storing containers and the like in multiple tiers, the assembly comprising interfitting associated racks, in which:

(a) each rack includes an elongate base framing element,

(b) each rack includes an elongate handle framing element above the base framing element,

(c) each rack includes side elements interconnecting the base element and handle element to form the frame,

(d) one of said latter two elements in each rack provided with a groove and the other of said latter two elements in each rack constituting a rail, and

(e) the rail of one rack and the groove of an associated rack having lapping shoulders allowing longitudinal slidable interconnection of the rail of said one rack within the groove of said associated rack, yet inhibiting the disconnection of said rail from said groove in a direction perpendicular to the direction of sliding, and

(f) each rack includes attachment means suspending the assembly from a support, said attachment means of at least one rack carrying the loaded weight of the assembly.

4. A rack assembly as defined in claim **3**, in which:

(g) the attachment means attaches one tier of racks of the assembly to a support,

(h) the subjacent tier is supported from said one tier in selectively overlapping longitudinal relation, and

(i) the shoulder lapping interconnection between the tiers obviates the necessity for direct attachment of said subjacent tier to said support.

5. A rack assembly as defined in claim **3**, in which:

(g) the racks are disposed in tiers in overhanging relation with the centers of gravity of vertically adjacent racks offset selectively in the longitudinal direction to provide a force couple between the longitundial rail and groove shoulder lapping connection that binds the individual racks into a structually integrated compact assembly.

6. A rack assembly as defined in claim **3**, in which:

(g) racks are disposed in two vertical tiers, a rack of one tier having a parallel disposition with, and rail and groove connection to, each of two racks of a vertically adjacent tier,

(h) the said rack of said one tier providing a lap connection with each of said two racks with the centers of gravity of vertically adjacent racks offset selectively in the longitudinal direction to provide a force couple between longitudinal rail and groove shoulder lapping connections that binds the individual racks into a structurally integrated compact assembly.

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U.S. Cl. X.R.

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