Nov. 8, 1949 J. E. BORAH 2,487,301

SHELF CONSTRUCTION

Filed Sept. 20, 1945

FIG. 1.

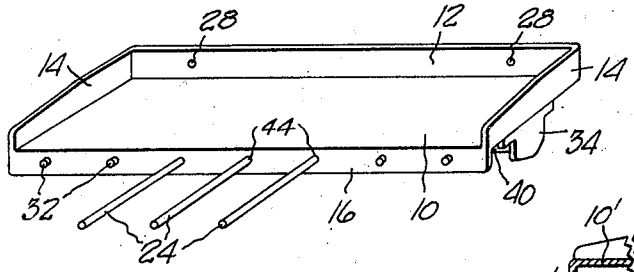


FIG. 5.

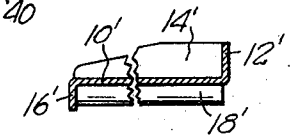


FIG. 2.

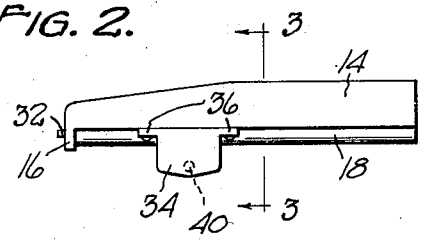


FIG. 6.

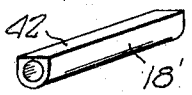


FIG. 3.

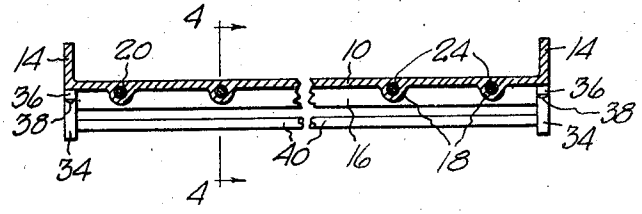
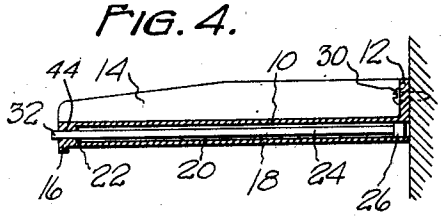


FIG. 4.



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UNITED STATES PATENT OFFICE

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SHELF CONSTRUCTION

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8 Claims. (Cl. 211—88)

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This invention relates to improvements in shelf construction.

The primary object of the invention is to provide a unitary shelf construction which mounts rods adapted to be projected therefrom to support articles of clothing for drying purposes, said rods being retractible when not in use.

A further object is to provide a simple, inexpensive, strong and compact shelf construction of light weight.

A further object is to provide a novel shelf construction which is molded or cast in one piece and which includes guide passages for slidably receiving rods or bars.

Other objects will be apparent from the description and appended claims.

In the drawing:

Fig. 1 is a perspective view of the rack construction.

Fig. 2 is a side view of the device.

Fig. 3 is a fragmentary longitudinal sectional view taken on line 3—3 of Fig. 2.

Fig. 4 is a transverse sectional view of the device taken on line 4—4 of Fig. 3.

Fig. 5 is a fragmentary transverse sectional view illustrating another embodiment of the invention.

Fig. 6 is an enlarged detail perspective view of a part used in the Fig. 5 embodiment of the invention.

Referring to the drawing, and particularly to Figs. 1 to 4, which illustrate the preferred embodiment of the invention, the numeral 10 designates a shelf panel which has an upwardly projecting flange 12 extending along the rear edge thereof, upwardly projecting end flanges 14 at its opposite ends, and a downwardly projecting front flange 16. The shelf 10 and the flanges 12, 14 and 16 are preferably formed integrally, as by molding or casting. The unit may be made from plastic material of either the thermosetting type, such as Bakelite, or the thermoplastic type, such as cellulose acetate. However, it will be understood that the materials mentioned above are illustrative and not limiting. It is also contemplated that the shelf unit may also be formed of metal such as aluminum or magnesium alloy or from glass or porcelain.

The shelf panel 10 is characterized by a flat upper surface and by a plurality of ribs 18 which extend transversely across the panel in spaced parallel relation and project downwardly at the bottom surface thereof. The ribs are molded integrally in the unit and merge with the front flange 16 which serves to conceal them. Each

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rib has a longitudinal central bore 20 extending therethrough. The bores are of uniform diameter for the major portion of their length and terminate in short reduced diameter front end portions which open at the front flange 16 and provide a shoulder 22 in each. A rod 24, of a length slightly greater than the width of the shelf and of a diameter to fit snugly and slidably in the reduced front portion of the bore fits in each bore. The rods have enlarged heads 26 at their inner ends fitting snugly and slidably in the large diameter portion of the bore 20. Rods 24 may be made of plastic material, wood, metal, glass or any other suitable rigid material.

The rear flange 12 has a plurality of apertures 28 formed therein and adapted to receive screws 30 by means of which the shelf is secured to a wall or other support, as shown in Fig. 4. When so installed, the wall or support forms a stop which limits retraction of the rods 24 so that at least their tips 32 always project from the unit and may be grasped readily for full extension with their heads 26 bearing against shoulders 22. In the extended position the rods are held against tilting by the supporting engagement of the rods with the reduced bore portions and of the rod heads with large bore portions, and hence form supports on which laundered clothing may be hung to dry. It will be observed that the flanges 12, 14 and 16 and the ribs 18 all cooperate to reinforce and strengthen the device, so that the unit may be made of thin section throughout to achieve light weight. The unit forms an attractive and useful household fixture, it being observed that articles supported on the shelf do not interfere with manipulation and use of the rods.

It may be desired to enhance the usefulness of the unit by mounting one or more towel bars thereon. This can be accomplished by securing to the opposite ends of the unit a pair of supports 34, such as small plates or blocks of rigid material which are preferably molded or formed of the same material as the shelf unit. Plates 34 have shallow projecting ends 36 provided with apertures to receive screws or other securing members 38 which are threaded into the unit at the ends thereof. Sockets are formed in the plates 34 spaced below the upper edge thereof and preferably below the level of the bottom edge of the front flange 16, and the opposite ends of one or more rigid bars 40 are supported in said sockets. It will be understood, however, that plates 34 may be secured to the unit by cement, such as a cement constituting a volatile solvent for the plastic material of which the unit and the plates 34

are formed, thereby firmly bonding the parts in unitary structure.

Another embodiment of the invention is illustrated in Figs. 5 and 6 and entails a construction which is fabricated from multiple parts and assembled. In this embodiment the horizontal shelf panel 10', the back flange 12' and the front flange 16' are formed from a sheet of plastic material bent to shape. The end flanges 14' are also formed of plastic sheet stock, cut to size and shape. The end flanges are cemented or bonded in position. The ribs 18' are formed from tube stock having a flat surface 42 adapted for face engagement with bottom surface of the shelf panel 10', and are likewise cemented or bonded to said shelf panel 10' and to the front flange 16'. The front flange has openings 44 of a diameter smaller than the bore of the tube 18' and concentric therewith, formed therein to correspond to the reduced diameter portion of the bore 20 of the preferred embodiment.

The same advantages obtained in the preferred embodiment are contained in this embodiment, the difference being primarily the avoidance of the necessity for molds to manufacture the article, inasmuch as the stock could be completely preformed except for the bending to define the flanges 12' and 16'. Also, the size of the device could be varied at will without requiring molding, etc. for each different size. As in the preferred construction, the device enables the use of thin sheet stock which would be susceptible to bending in flat form but held rigid by the reinforcements therein.

I claim:

1. A shelf unit comprising a shelf panel, upwardly projecting flanges at the rear and side of said panel, a downwardly projecting flange at the front of said panel, a plurality of ribs extending transversely of and projecting below said panel, said panel, flanges and ribs being formed integrally as a unit, said ribs each having a longitudinal bore open at its ends, said front flange having apertures registering with said bores and a rod slidable in each bore.

2. A shelf unit comprising a shelf panel, upwardly projecting flanges at the rear and side of said panel, a downwardly projecting flange at the front of said panel, a plurality of ribs extending transversely of and projecting below said panel, said panel, flanges and ribs being formed integrally as a unit, said ribs each having a longitudinal bore open at its ends, and a reduced diameter portion at its front end, said front flange having apertures registering with said bores and a rod slidable in said reduced bore portion and having a head at its inner end slidable in the rear portion of said bore.

3. A shelf unit comprising a thin shelf panel, reinforcing flanges projecting from at least some of the margins of said panel, a plurality of ribs projecting from the bottom face of said panel and concealed by one of said flanges projecting downwardly from the front of said panel, said ribs each having a bore terminating in a reduced end portion open at and extending through said front flange and adapted to slidably receive a rod, said panel, flanges, ribs and bore constituting an integral structure.

4. A shelf comprising an integral molded body including a horizontal shelf panel, marginal reinforcing flanges, and ribs spanning said panel and projecting therebelow, said ribs each having a bore therethrough, and rods slidable in said bores between predetermined limits.

5. A shelf comprising a horizontal shelf panel formed of thin plastic sheet material, said sheet having an upturned rear flange and a downturned front flange bent therefrom, and a plurality of tubes secured to the bottom face of the panel in parallel spaced relation transversely of the flanges to rigidify said sheet unit, each tube having a bore, said downturned front flange having passages therein concentric with and of a smaller size than the bores of said tubes, and a rod slidable in each tube bore.

6. A shelf comprising a horizontal shelf panel formed of thin plastic sheet material, said sheet having an upturned rear flange and a downturned front flange bent therefrom, and a plurality of tubes secured to the bottom face of the panel in parallel spaced relation transversely of the flanges to rigidify said sheet unit, each tube having a bore, said downturned front flange having passages therein concentric with and of a smaller size than the bores of said tubes, said tubes having a flat exterior surface adapted for face engagement with the bottom of said shelf panel and bonded in face engagement therewith and a rod slidable in each tube bore.

7. A shelf comprising a horizontal shelf panel formed of thin plastic sheet material, said sheet having an upturned rear flange and a downturned front flange bent therefrom, and a plurality of tubes secured to the bottom face of the panel in parallel spaced relation transversely of the flanges to rigidify said sheet unit, each tube having a bore, said downturned front flange having passages therein concentric with and of a smaller size than the bores of said tubes, and end pieces of thin sheet stock bonded at their edges to the upper face of the panel and said upturned flange and a rod slidable in each tube bore.

8. A shelf comprising a horizontal shelf panel formed of sheet material, said sheet having an upturned rear flange and a downturned front flange bent therefrom, and a plurality of tubes secured to the bottom face of the panel in spaced relation transversely of the flange and each having a bore, said downturned front flange having passages therein concentric with and of smaller size than the bores of said tubes, and a rod slidable in each tube bore.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
D. 138,992	Daum	Oct. 3, 1944
327,502	Swan	Sept. 29, 1885
349,875	Crocker	Sept. 28, 1886
591,440	Washington	Oct. 12, 1897
1,090,724	Koehler	Mar. 17, 1914
1,270,718	Ford	June 25, 1918
2,258,178	Haffner	Oct. 7, 1941