Feb. 28, 1967 A. ISAACSON ET AL 3,306,689

RECEPTACLE

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Fig. 1.

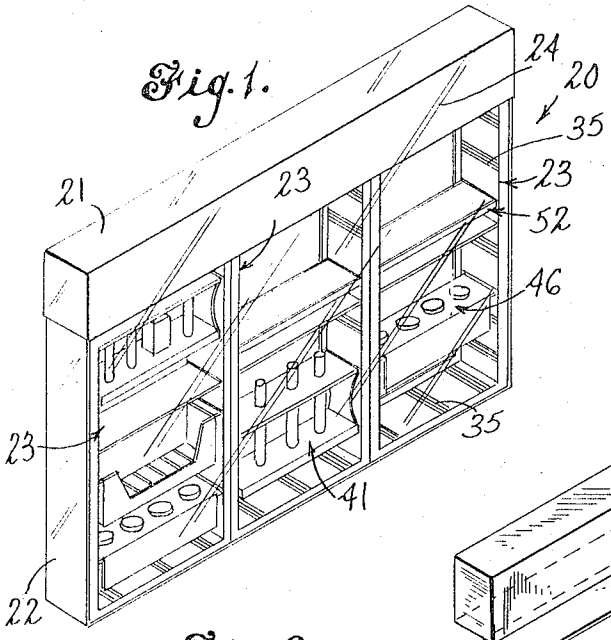


Fig. 2.

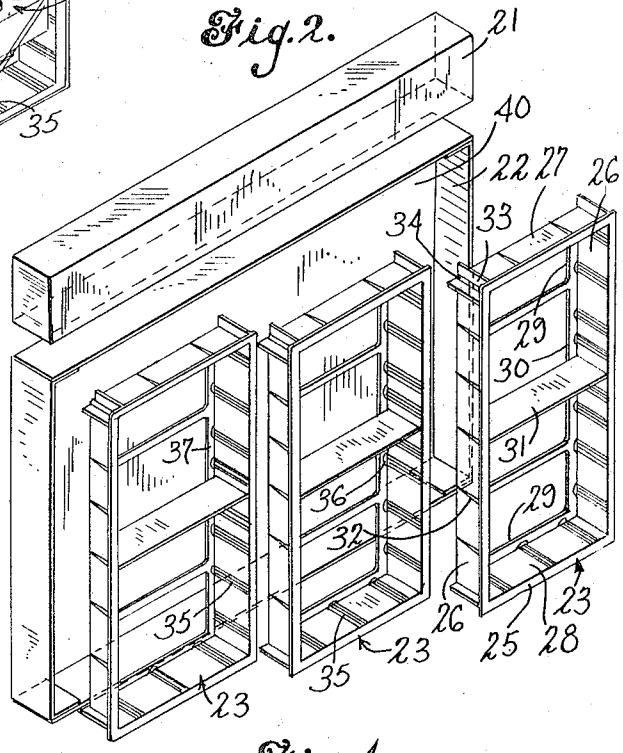


Fig. 3.

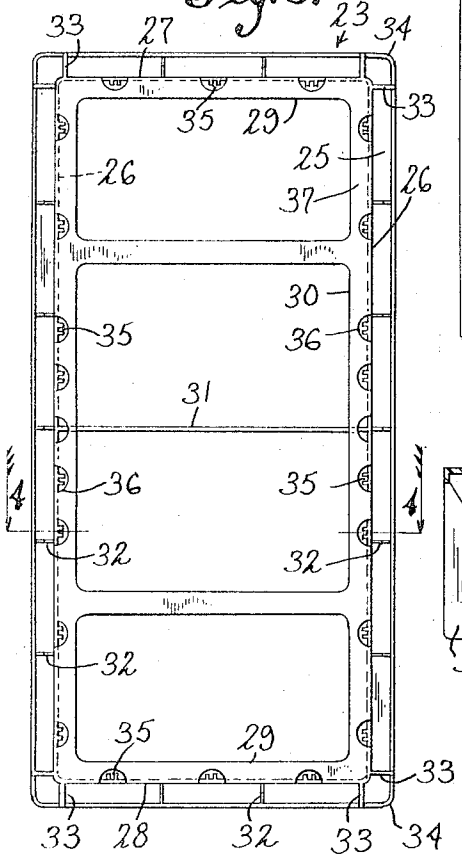
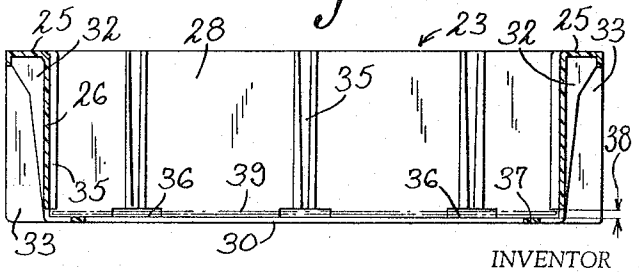


Fig. 4.



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Fig. 5.

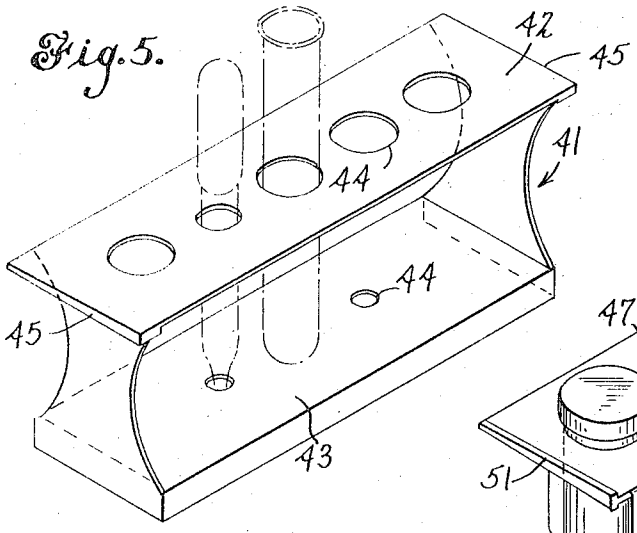


Fig. 6.

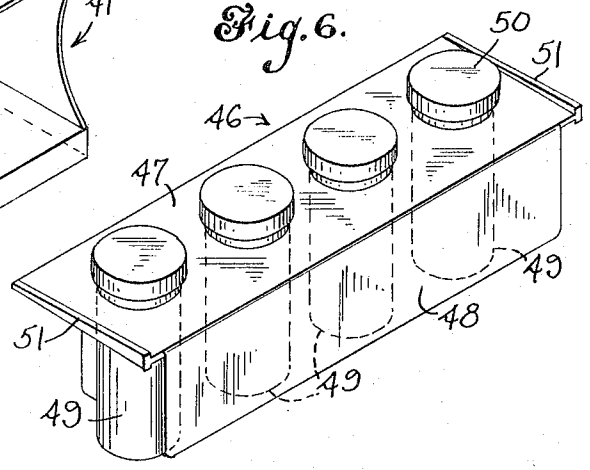


Fig. 7.

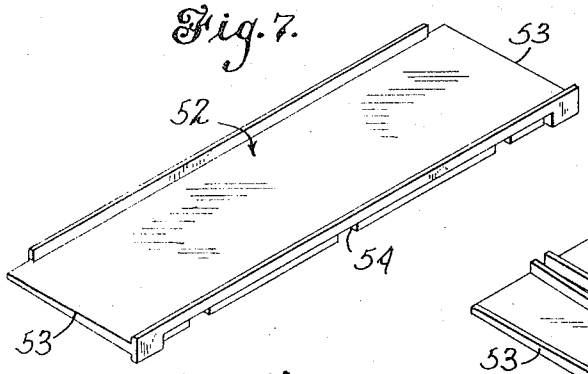


Fig. 8.

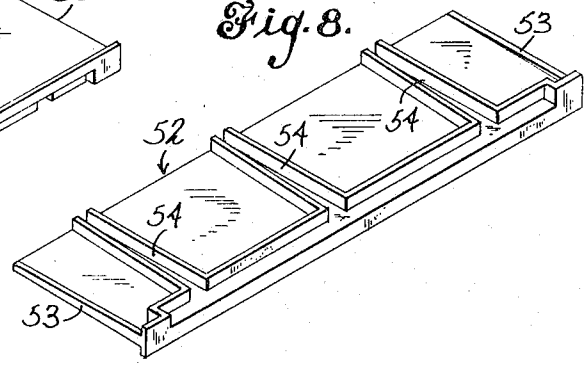
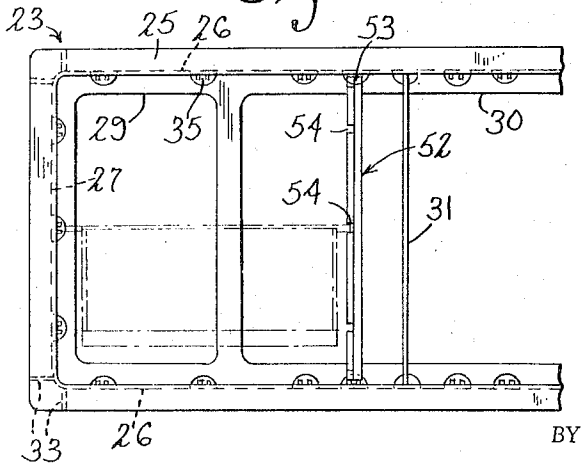


Fig. 9.



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Fig. 10.

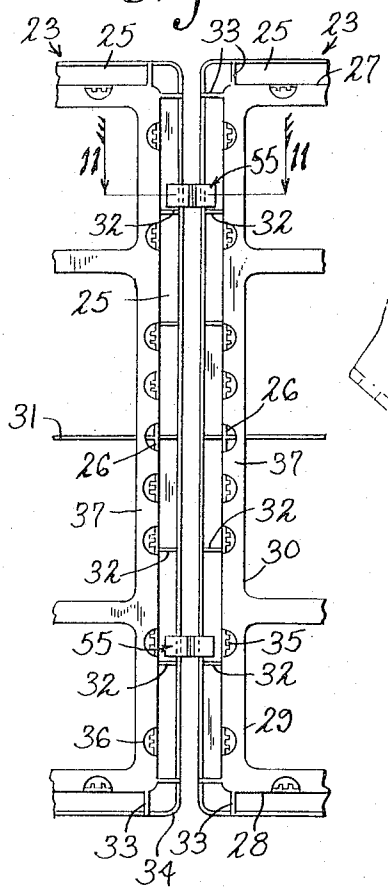


Fig. 11

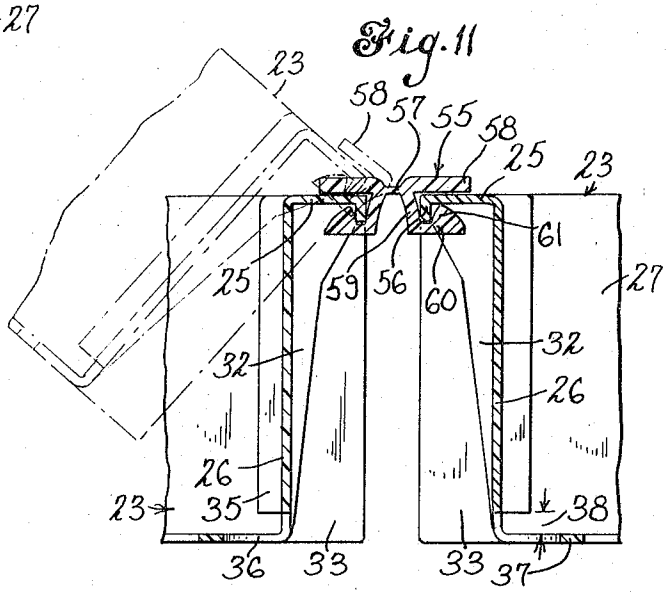
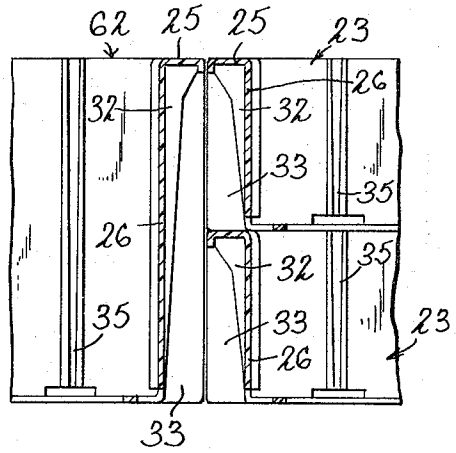


Fig. 12.



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3,306,689

RECEPTACLE

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4 Claims. (Cl. 312—199)

This invention relates to receptacles and more particularly to display receptacles having various functional features.

In the prior art there are various receptacles used in connection with the containment and shipment of articles and compositions, which receptacles must be discarded or reassembled with other devices in order to display the contents at the place of sale. In attempting to satisfy the requirement for a receptacle that ships well, most manufacturers have compromised the appearance of the receptacle or have produced a receptacle that looks good, but which does not lend itself to easy packaging, shipment or use.

In some prior art applications, particularly in the toy and game industry, there has been widespread demand by the customer to view the device, per se, in its packaged form as well as a demand for a receptacle which ships well. In the marketing of toy chemical laboratories, manufacturers have gone to great lengths to produce a receptacle, usually metal, for the containment of test tubes, chemicals, scales, trays and other accessories, which can ship well. However, almost all attempts have resulted in a receptacle for which the customer can only see the outside of the receptacle or a pictorial representation of the contents thereof. The latter is unreal, adds expense to the receptacle and fails to meet customer demand for a view of the contents, per se. As such, while chemistry labs or sets have been sold in great numbers over the years and while they continue to fascinate those children who obtain them, sales have fallen off appreciably.

In other prior art devices the receptacle is so designed that while the contents may be visible, it results in the shipment of a great deal of blank space or air, which is costly to the purchaser or the manufacturer, as the case may be. In still other prior art devices, the arrangement of the receptacle is such that portions of the receptacle are thrown away when the receptacle is put into use, with the result that substantial assembly and cost is necessitated.

In view of the foregoing, it is an object of this invention to provide a new and improved receptacle which is packaged and shipped in the same form as it is displayed and which is designed in such a fashion as to afford maximum utility thereof.

Another object of this invention is to provide a new and improved receptacle for home chemistry laboratories, which receptacle is suitable for economical shipment, display and use of the accessories and chemicals incorporated therein.

A further object of the invention is to provide a receptacle made up of modular sections, which sections can be arranged horizontally and vertically with appreciable stability and utility.

Still another object of the invention is to provide a new and improved hinge member which cooperates with the modular sections of the receptacle to form a sturdy receptacle stand.

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Still other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises an article of manufacture and/or product possessing the features, properties and the relationship of elements which will be exemplified in the article and/or product hereinafter described, and the scope of the invention will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in conjunction with the accompanying drawings, in which like reference numerals designate like parts throughout the several views and in which:

FIG. 1 is a perspective view of a receptacle according to the invention;

FIG. 2 is an exploded perspective view showing various constituents of the receptacle;

FIG. 3 is a rear elevational view of one of the modular sections of the receptacle;

FIG. 4 is a sectional view taken along line **4—4** of FIG. 3;

FIG. 5 is a perspective view of one of the test tube holders shown in FIG. 1;

FIG. 6 is a perspective view of one of the chemical composition containers shown in FIG. 1;

FIG. 7 is a perspective view showing the top of one of the shelf members shown in FIG. 1;

FIG. 8 is a bottom perspective view of the shelf member shown in FIG. 7;

FIG. 9 is a horizontal fragmentary view of a modular section with the shelf member of FIG. 8 in position for alternate use;

FIG. 10 is a fragmentary rear elevational view of a pair of modular sections with hinge members in place;

FIG. 11 is a sectional view taken along line **11—11** of FIG. 10 and showing a portion of a modular section in phantom; and,

FIG. 12 is an alternate embodiment of the modular sections of the receptacle.

Referring now to FIG. 1, there is shown a packaged receptacle generally indicated at **20**, ready for both shipment and eventual display for retail sale. The packaged receptacle **20** comprises a cap member **21** which is designed to fit over either the top or bottom (or both) of an open box **22**. Modular sections **23**, usually two or more in number, fit within the open box **22** and the entire assemblage is covered with shrink film, cellophane or the like **24**, which is usually colorless and transparent and which holds the assemblage together in a suitable form for shipment and display.

As more clearly shown in FIGS. 2 and 3, the modular sections **23** are composed of face members **25**, side panels **26**, and top and bottom panels **27** and **28**, respectively. In order to economize on the material used for the modular sections **23**, which is preferably polystyrene, polyethylene or the like, the back is provided with top and bottom cut-outs **29**. In the preferred embodiment a central cut-out **30** is provided along with a reinforcing strut **31**. The strut **31** is important in that it adds stability to the modular section **23**, thereby diminishing oblique distortion of the section and misalignment with its neighboring or bordering modular section, when assembled, which misalignment can cause distortion and misalignment of the entire receptacle.

The modular sections **23** are provided with (at least) a plurality of hinge ribs **32**, when the modular section is

provided with feet 33 located at the corners 34. When the feet 33 are spaced inwardly from the corners 34, the hinge ribs 32 may be eliminated from the side, top and bottom panels. However, according to a preferred embodiment of the invention, the feet 33 are located at the corners 34 as shown and the hinge ribs 32 are employed in order to add to the structural rigidity of the modular sections and to provide various locations for employing connecting means, to be described below.

The feet 33 protrude in planes which coincide substantially with the planes defined by the edge of the face member 25 and the back of the modular section, so that when the modular sections are placed side by side or back to back (FIG. 12) the feet abut against one another thus preventing telescoping or misalignment of the modular sections.

Shelf slides 35 are provided at spaced intervals along the side, top and bottom panels, which slides are preferably on a taper. At the back of the modular sections and in substantial alignment with the shelf slides 35 are semicircular apertures 36. These apertures are formed along a peripheral back face 37 and in the preferred embodiment the shelf slides 35 terminate an appreciable distance from the apertures 36 so that there is sufficient clearance as generally indicated at 38 for the insertion of advertising cuts, colored cardboards, or the like 39 to make the display pleasing to the eye. If the face 40 of the open box 22 (FIG. 2) is colored or painted, the apertures 36 may be eliminated as well as the clearance 38, thus resulting in cheaper die costs, etc., for the modular sections.

Referring now to FIG. 5, a test tube and/or equipment holder 41 having top and bottom portions 42 and 43, respectively, is provided with suitable apertures 44. The top portion 42 extends past and overlies the bottom portion and is tapered at 45 so as to conform substantially to tapered shelf slides 35 and the relative dimensions are so chosen to effect a lose fit therebetween. As to the chemical composition container 46 (FIG. 6), it is provided with a deck portion 47 and a front face portion 48, together with cylindrical chambers 49 which are preferably closed with cap members 50. The deck portion 47 is likewise provided with tapered portions 51 for insertion into shelf slides 35, in much the same manner as the test tube holder 41.

Referring now to FIGS. 7, 8 and 9, there is shown a shelf member 52 which is tapered at 53 and which is provided with tapered slides 54 as clearly shown in FIG. 8. This shelf member is assembled with its tapered slides 54 facing the shelf slides 35 in the top or bottom panels 27 and 28 of the modular section 23. This is especially significant when the modular section or sections are placed in the horizontal position as shown in FIG. 9. In this instance the insertion of the shelf member sets the stage for the support of chemical composition containers, test tube holders and the like. Accordingly, the shelf member 52 can be used as a shelf or employed to effect support for other portions of the receptacle.

Referring now to FIGS. 10 and 11, there is shown by way of illustration the connection between adjoining modular sections 23. This connection is effected by the use of a unique hinge member 55 which engages a lip 56 along the edge of the face members 25. The hinge member is preferably composed of two substantially identical portions placed back to back in mirror image relationship with a connecting portion 57 therebetween. This portion allows for flexing of the hinge so that the modular section 23 can be rotated to the phantom position so as to add to the stability of the free standing and assembled modular sections. The substantially U-shaped hinge member 55 is made of polyethylene, rubber, polyvinylchloride, or other elastomeric materials and is provided with face panels 58, bases 59, and depending portions 60 having inwardly extending protrusions 61. The hinge member 55 is (preferably) inserted by aligning the face panel 58 in parallel relationship with the lip 56 and then rotating the hinge to the position shown in the solid line position of FIG. 11. This securely holds the modular sections in place, yet the fit is loose enough for ease of engagement with the lip. As such, the clearance provided does not restrict the hinge member from sliding down of its own weight. The hinge member falls until it rests against the hinge ribs 32 or the feet 33 as the case may be.

Referring now to FIG. 12, there is shown an alternate embodiment which shows the arrangement of modular sections 23 when adjacent a deep modular section 62. The deep modular section 62 is likewise provided with face members 25, etc., not to mention hinge ribs 32 and feet 33, the latter abutting against corresponding portions of the modular sections 23 to provide an aligned and compact receptacle upon assembly for shipment, display and use.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above article and/or product without departing from the scope of the invention, it is intended that all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

What is claimed is:

1. A receptacle arranged to be displayed in an upright position, comprising a plurality of quadrilateral modular sections, each section having top and bottom walls in substantially parallel planes and side walls in substantially parallel planes joining said top and bottom walls, a facing member extending outwardly and substantially perpendicular to all of said walls, said facing member being of substantially rectangular configuration and continuous about the opening defined by said walls, a plurality of feet extending outwardly from said walls substantially mutually perpendicular to said walls and said facing member in predetermined position, said feet having edges terminating in substantial alignment with the edges of said facing member, whereby each section may be free-standing on any edge of the facing member and some of said feet.

2. The apparatus of claim 1 further defined in that opposite pairs of said walls include inwardly extending means defining tapered slots, and shelves having end portions formed in similar configuration to said slots for insertion therein.

3. A receptacle comprising a plurality of quadrilateral modular sections, having face members, top, bottom and side panels substantially at right angles to said face members, said panels having feet extending at right angles thereto at various intervals about the periphery thereof and terminating in substantial alignment with said face members, so that said sections may be placed side by side and back to back thereby forming an integrated receptacle for shipment, display and use of the various contents thereof, said face members being provided with lips extending substantially at right angles thereto, and at least one hinge member for joining two of said modules, said hinge member having two generally U-shaped portions joined together in mirror image relationship and comprising a face panel, and depending portion, the latter having an inwardly extenting protrusion at the end thereof, which panel and depending portion are joined together by a base so that when said hinge member is connected to a modular section its face panel overlies said face member and said protrusion and base straddle the lip of said modular section.

4. The apparatus of claim 3 wherein said sections fur-

ther include hinge ribs extending mutually perpendicularly to said panels and said face member, said ribs providing positioning means for said hinges.

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