Sept. 9, 1941. F. F. LOEB ET AL 2,255,744

DISPLAY RACK

Filed Oct. 14, 1938

FIG. 1.

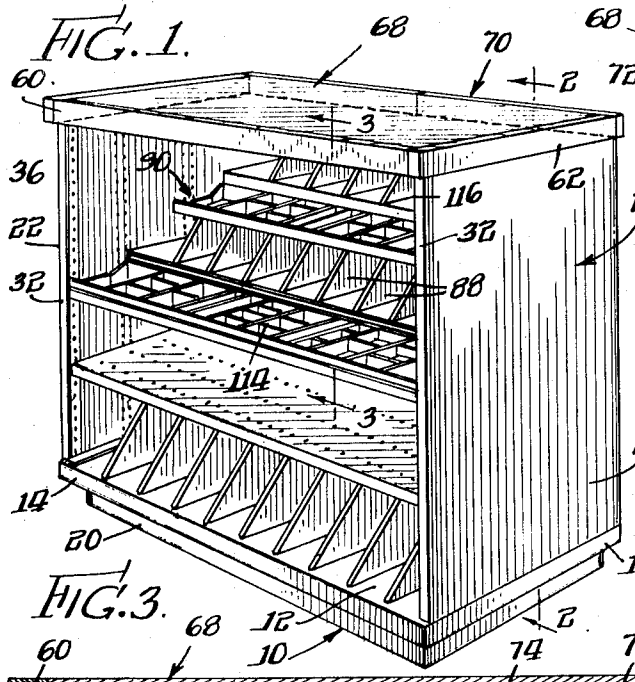


FIG. 2.

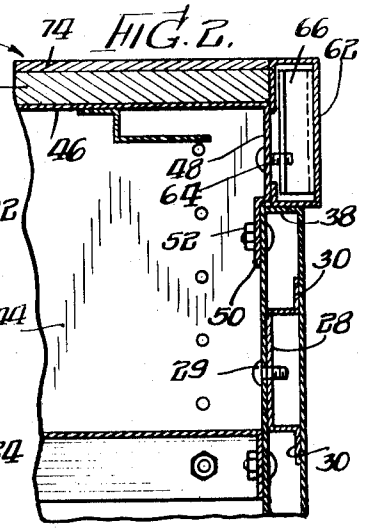


FIG. 3.

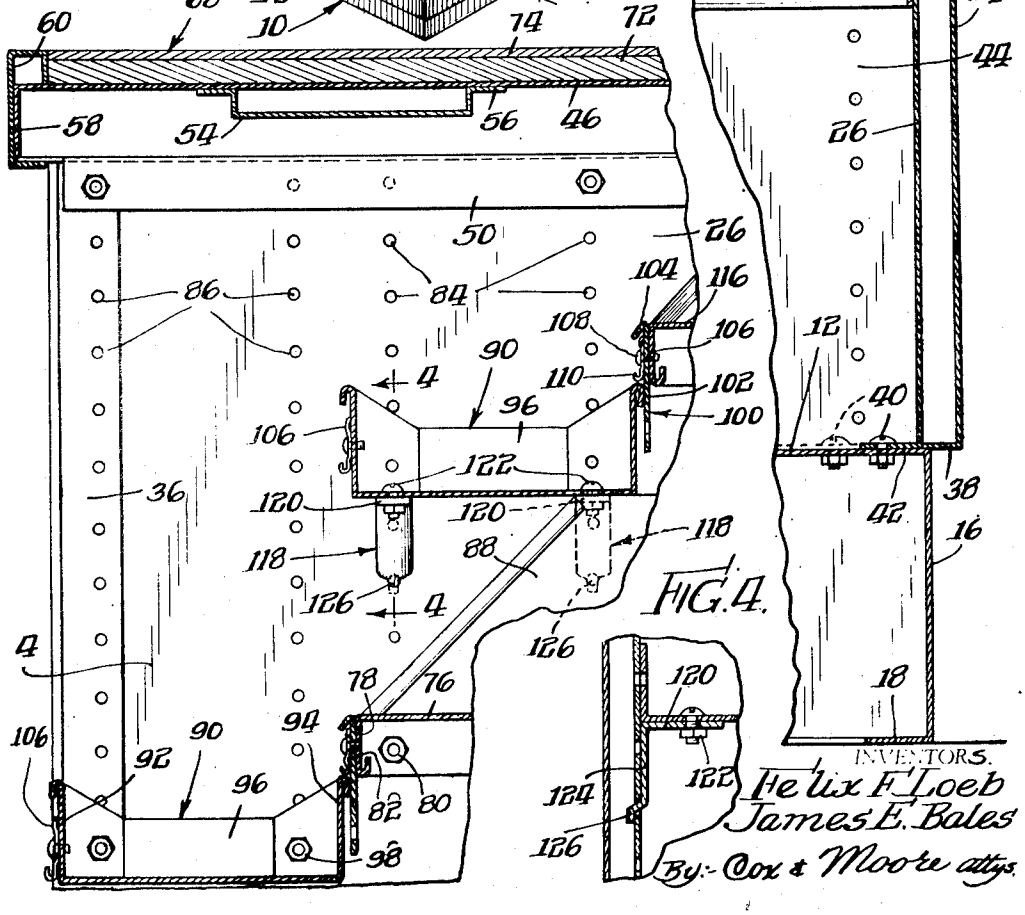


FIG. 4.

INVENTORS.
Felix F. Loeb
James E. Bales
By: Cox & Moore attys.

Patented Sept. 9, 1941 2,255,744

UNITED STATES PATENT OFFICE

2,255,744

DISPLAY RACK

Felix F. Loeb, Chicago, and James E. Bales, Aurora, Ill., assignors to Lyon Metal Products, Incorporated, Aurora, Ill., a corporation of Illinois

Application October 14, 1938, Serial No. 234,868

11 Claims. (Cl. 312—172)

The present invention relates to a display or merchandising rack for supporting and storing, as well as displaying merchandise of the type comprising a multiplicity of varied parts and assemblies.

The present application is a continuation in part of our co-pending application, Serial No. 182,276, filed December 29, 1937.

An object of this invention is to provide a display rack or stand of durable and permanent construction suitable for displaying unitary articles consisting of assemblies of a plurality of relatively smaller elements and also providing a plurality of display points for individual supplies of the said smaller or kindred elements, the merchandise being so orientated and arranged in the rack as to provide a definite relation between each assembly and its respective component replacement parts.

The present invention more particularly comprehends the provision of a new and improved rack for assembled units of merchandise wherein a plurality of shelf compartments are provided, each shelf compartment being adapted for storing and displaying one or more assembled units in combination with a trough support for displaying separately, supplies of the individual elements of the assembly in juxtaposition thereto. Normally, the storing of the assemblies and the numerous small parts, such as repair and replacement parts, entails complex systems of cataloging. Even so, parts must frequently be checked against the general assembly to prevent error.

It is, accordingly, an important object of the present invention to provide a display rack for various assemblies as described above with a supporting trough directly in front of each assembly and having a plurality of small compartments substantially co-extensive therewith for containing the corresponding repair parts.

It is yet an additional object of the present invention to provide a display rack as hereinbefore mentioned in which the assembled parts or units are all so supported that they are fully visible and readily removable from the front of the rack and from their respective compartments, and wherein the associated repair parts or accessories are arranged forwardly and below the level thereof so that they are likewise fully visible and readily accessible from the front of the rack and are maintained in co-extensive relation to the parent assembly without interfering with access thereto.

Numerous other objects and advantages will more fully appear during the course and progress of the following specification.

Figure 1 is a perspective view of a display rack constructed in accordance with the present invention.

Figure 2 is a vertical sectional view taken on the line 2—2 in Figure 1.

Figure 3 is a vertical sectional view taken on the line 3—3 in Figure 1.

Figure 4 is a detail sectional view taken on the line 4—4 in Figure 3.

The display rack shown in the figures for the purpose of illustrating the present invention comprises in general a base portion having mounted thereon side and rear walls and supporting a top as will hereinafter appear more in detail.

Referring more particularly to the drawing, wherein the invention is disclosed more in detail, Figures 1 to 3 disclose one preferred form of rack embodying the features of the present invention. The base portion 10 of this rack comprises a bottom wall or floor 12 of sheet material of an area corresponding to the adjacent area occupied by the entire unit. The edges of this member are turned or flanged downwardly and inwardly on the front and sides as at 14 to provide a finished molding while the rearward edge is formed downwardly as at 16 and extends to the floor to provide a supporting foot 18 for the base.

The bottom wall or floor 12 is supported in spaced relation to the floor adjacent its side and front edges by means of a vertically extending wall member or apron 20 which is provided with flanges, not shown, adjacent its upper and lower edges for securement to the floor and for providing a flat contact surface with the floor, respectively. It should be noted that the apron portion is offset inwardly from the front and side edges of the floor, that is, from the flanged molding portions 14 to provide a toe space for persons using the rack.

The sides of the display unit are provided with a pair of side wall members 22 adapted to support shelf, trough and drawer structures, as well as a top enclosing wall, as will appear hereinafter more in detail. The side wall members 22 are mounted along opposite side edges of the bottom or floor wall 12, their structure being shown more in detail in Figures 2, 3 and 9.

More particularly, each of the side walls comprises an outer panel 24 of sheet material and an inner panel member 26 spaced therefrom by means of suitable spacing lugs or trusses 28.

Thus, referring to Figure 2, the spacing truss 28 is in the form of a horizontally extending channel having its central portion secured to the inner panel 26 by means of a tapping fastener 29 and further having vertically extending flanges 30 adjacent its free ends, which flanges are secured to the outer panel member 24, being spotwelded in flatwise relationship thereto. Any suitable number of these spacing members may be employed and secured to the respective panels in the manner disclosed or in any equivalent manner.

The forward upstanding edge of the inner panel member is preferably formed as at 32, Figure 9, to provide a suitable molding along the said edges of the side wall members, the configurated portion being shaped to co-act with an inturned flange 34 on the adjacent forward edge of the outer panel 24 to provide a straight and unobtrusive seam or line of juncture. It will be noted that the box-like molding or enclosure 32 on the forward edges of the inner panels 26 is open at one side, the opening being closed by means of a vertically extending L-shaped strip 36. The L-shaped strip has its forward wall reversely engaged by the configuration 32 and its rearward edge overlying a portion of the flat wall 26 and preferably secured thereto.

The upper and lower edges of the outer wall panels 24 are flanged inwardly as at 38. Each of the side wall members 22 is bolted in position on the base 10 through the agency of machine bolts 40 passing through inwardly extending flanges 42 formed by bending inwardly the lower edges of the inner panels 26, Figure 2. The back wall of the assembly consists of a sheet panel member 44, bolted along either side edge to suitable flanges forming the rear extremities of the inner side panels.

The top wall of the present display or merchandising cabinet comprises a substantially flat, horizontal sheet member 46 having both side edges, as well as its rear edge, formed downwardly as at 48 and providing an inwardly offset, vertical flange 50 to which are rigidly bolted the upright walls 22 and the rear wall 44, through the agency of machine bolts 52, Figures 2 and 7. A channel-shaped rigidifying member 54 is secured as by welding along its flanged portions 56 to the under side of the top wall 46 and extends longitudinally of the wall in order to confer suitable stiffness and supporting qualities upon the overlying member. The front edge of the wall 46 terminates in a downwardly projecting flange 58.

Attention is directed to the fact that the upper side edges of the unit are provided with encasing rectangular finish molding pieces. The molding piece on the front of the unit, Figure 3, consists of a longitudinally extending sheet member 60 formed to a substantially rectangular sectional configuration open on one side, as clearly shown in Figure 3, to fit over the forward edge of the top wall and being secured to the downwardly extending flange 58 by welding or any other suitable fastening means.

Corresponding rectangular molding pieces 62 are fastened along the side flanges 48 by means of tapping fasteners 64 threadedly engaging with clip members 66. Attention is particularly directed to the fact that the molding pieces 62, while being of substantially complete rectangular section, are provided with an opening to permit the passage of the fastener. The clip members 66 are mounted and seated within the rectangular or box-like enclosure formed by the molding pieces and have spaced flanges, one of which is spotwelded to the interior wall of the adjacent molding piece and the other of which is in position for engagement by the fastener.

The clips 66, accordingly, not only rigidify and strengthen the molding pieces, but provide means for securement and attachment to the edges and top of the structure. As clearly shown in Figures 2 and 3, the clips protrude upwardly a short distance providing a rim for retaining articles placed upon the upper surface and/or for mounting a cover 68 or plain top when it is desired to employ the top of the assembly as a counter. In other words, the molding pieces provide a continuous side rail of uniform dimensions and appearance for the top portion of the rack, forming therewith a tray surface. In accordance with the present invention, the top surface 46 may be provided with a plurality of apertures or otherwise configurated to support a number of removable partitions, as disclosed more clearly in our aforesaid co-pending application, Serial No. 182,276.

A removable rail structure 70 is provided for the rear portion of the tray, Figure 1, and comprises a pair of rectangular molding members identical in configuration with the molding members 62. It should be particularly noted that the merchandising rack shown is of such proportions that two of the molding members 62, placed end-to-end, will be just co-extensive with the rear edge of the top and will overlap the molding members 62 mounted on the sides of the rack, see Figure 1. In accordance with this arrangement, therefore, only one size and style of rail unit need be provided in order to completely enclose the sides and rear. The molding units forming the rear rail 70 will be secured in place identically as the side units 62.

The top or cover comprises a base portion 68 covered with a suitable layer of facing material 72, such as linoleum, and, when it is desired to employ the present structure for wrapping and counter purposes, for example, the top or cover may be merely dropped into place where it will be retained by the previously described rail structure.

From the foregoing disclosure, it will be apparent that the present structure comprises in general a cabinet-like member enclosed upon all sides except the front and, in accordance with the present invention, the merchandise is supported therein through the agency of a plurality of shelves, trays, racks and drawers. The central shelf indicated by the reference numeral 76 comprises what is known as a three-quarter length shelf since it extends forwardly substantially three-quarters of the depth of the rack.

The shelf has downwardly projecting flanges 78 along its side and rear edges, which flanges are secured to the inner side wall panels 26 and the rear wall 44 by suitable fasteners 80. The front edge of the shelf terminates in a downwardly and upwardly extending flange 82. In this connection attention is directed to the fact that a plurality of vertically extending lines of apertures 84 and 86 are provided in the interior side panels 26 and the vertically extending strip 36 so as to permit adjustable variation of the height and positioning of the shelves, as well as the other merchandising support members to be hereinafter described. According to the present invention each shelf may be divided into a plurality of

bins or compartments by means of rearwardly extending partition members **88**. Each of the partition members is secured in position with respect to the shelf by means of any suitable preferably adjustable interengagement with the shelf.

Such means may comprise a plurality of spaced apertures similar to the apertures **84** and **86** adapted to receive partition fastening means. Attention is particularly directed to the fact that the shelf **76**, as well as the other shelves, is positioned adjacent the rearward portions of the rack, that is, for all shelves shorter in depth than the depth of the rack, such, for example, as the shelf **76** just described, the forward edge terminates short of the front portion of the rack, leaving a substantial space therebetween. This arrangement provides adequate space for the mounting of trough supporting members provided in accordance with the present invention. These trough supporting members, designated by the numeral **90**, have bottom supporting walls provided with upstanding front and rear retaining walls or flanges **92** and **94**, respectively.

Opposed end walls **96** extend between the front and rear walls, as shown in Figure 3, and are apertured to accommodate fasteners **98** for securing the troughs to the upstanding inner side wall panels **26** of the rack. It will be understood from the above disclosure that the fasteners **98** extend into any of the pairs of apertures **86** and may be adjustably positioned therein to accommodate the troughs at a variety of elevations.

Attention is directed to the fact that the apertures **84** and **86** are so relatively positioned that the trough may be always located with respect to the adjacent shelf in the relationship shown in the figures, that is, with the top rear edge of the trough adjacent the front lower edge of the shelf. In other words, it might be said that in this position the trough member is arranged so that it in effect depends from the forward edge of its respective shelf. Where desired, each trough and its respective shelf may be bent as a unit with the trough attached thereto and structurally depending in this manner. On the other hand, it has been found preferable, as a convenience in assembly and adjustment, to provide the shelf and trough as separate units and to mount them in the relationship disclosed.

The aforementioned arrangement further permits the use of adjustable placard supports **100**, Figure 3, on the forward edge of the shelf which comprises a vertically extending wall **102** flanged downwardly as at **104** at its upper edge and having mounted therein a separable cooperating clip **106** through the agency of a fastener **108**. The clip **106** is provided with an upwardly facing reentrant flange **110** cooperating with the oppositely facing flange **104** to engage a placard.

Each of the troughs **90** is provided with a plurality of partition members **114** which divide the trough into a multiplicity of small compartments. In the structure shown, it will be noted that the partition members **114** are positioned opposite and substantially in the plane of each of the larger partitions **88** which divide the adjacent shelf. This structure exemplifies one preferred form of structure coming within the purview of the present invention, but it will be understood that this is merely illustrative and the structure is not necessarily so specifically arranged. The compartments thus formed in the trough are further subdivided. Accordingly, for each bin or compartment on the shelf, there is provided a multiplicity of smaller compartments on the trough arranged in juxtaposition and slightly below the shelf compartment and co-extensive therewith.

This novel and improved structure is of great utility in storing and merchandising articles wherein a plurality of small accessory parts are carried in stock together with structures which represent assemblies of these parts. The merchandise may be distributed on the present rack or stand by placing each type of the assembled units in a particular compartment on the shelves and arranging the plurality of parts which go to make up the parent units in front of this compartment in the substantially co-extensive series of smaller compartments arranged in the trough. By way of illustration, assuming that the present rack is to be employed for the display and merchandising of carburetors, each compartment or division of each of the shelves between the parts or partitions **88** would be reserved for one particular type or style of carburetor. Any number of assembled units might be arranged in these spaces. The carburetor replacement parts corresponding to each carburetor assembly are situated in the trough compartment just in front thereof. It will be obvious from the above that the number and arrangement of the smaller compartments in the trough will be sufficient to separately accommodate all of the desired repair or replacement elements, for example, of the corresponding carburetor.

The upper shelf, shown in Figures 1 and 3 and designated by the reference numeral **116**, is of a depth corresponding to one-half the depth of the rack and is, accordingly, spaced from the forward portions of the rack by a distance substantially equal to one-half the depth thereof. The associated trough **90**, accordingly, is positioned over the forward portion of the shelf **76**. It will be obvious that this arrangement permits ready access to the merchandise on the lower shelf and trough.

The upper trough **90** is, moreover, supported by adjustable clips **118** comprising a flange **120** fastened to the lower surface of the trough as at **122** and having an upwardly extending flange **124** terminating in an aperture engaging lug **126**.

The present invention provides a simple and effective structure for storing and displaying merchandise of various kinds, particularly where numerous different small parts must be handled. When it is desired to find a particular part for a specified assembly, it is only necessary to go to the location of the parent assembly and, just in front or adjacent this location, pick out the particular part which is needed. Complicated indexing and cataloging systems are thus obviated and the attendant imminent possibility of error which arises in the selection of small parts by catalog number is eliminated therewith.

The present arrangement, moreover, facilitates merchandising in that the orientation and arrangement of parts in the present structure tends to create a suggestive relationship between the various parts and the parent assembly which possesses the psychological effect of calling attention to the possible necessity or desirability of replacing certain particular parts or as a reminder of some particular part needed for a similar unit.

The present invention provides also for ready access to any of the merchandise from the front of the rack. The assemblies resting upon the shelves thus are readily visible from an elevated, as well as a forward, position with respect to the

rack. The same fact is true of the articles in the trough and whereas they are situated forwardly of the shelves, they do not hinder at any time the removal of the assembled article therefrom.

Changes may be made in the form, construction and arrangement of the several parts without departing from the spirit or scope of the invention, or sacrificing any of its attendant advantages, the form herein described being a preferred embodiment for the purpose of illustrating the invention.

The invention is hereby claimed as follows:

1. A display rack or merchandising device for displaying a plurality of parts in juxtaposition to an assembly of said parts comprising a cabinet-like structure having a base, upstanding side and rear members and an enclosing top adapted to enclose the rack on all sides except the front, and being substantially unobstructed between the front and rear, a substantially horizontally arranged shelf mounted between said upstanding side and rear members for support thereby, said shelf being of a width less than the distance between the front and rear portions of the rack and being arranged rearwardly to provide a space in the rack forwardly of the shelf, and a trough member extending between said side and rear members and positioned substantially along the forward edge of said shelf, said trough member being substantially co-extensive in length with the corresponding shelf and being located in a position substantially depending from said shelf and with its upper rear portion substantially congruent with the forward edge of the shelf, the trough member being divided into a plurality of compartments by partition members.

2. A display rack or merchandising device for displaying a plurality of parts in juxtaposition to an assembly of said parts comprising a cabinet-like structure having a base, upstanding side and rear members and an enclosing top adapted to enclose the rack on all sides except the front, a substantially horizontally arranged shelf mounted between said upstanding side and rear members for support thereby, said shelf being of a width less than the distance between the front and rear portions of the rack and being arranged rearwardly to provide a space in the rack forwardly of the shelf, and a trough member extending between said side and rear members and positioned substantially along the forward edge of said shelf, said trough member having a generally horizontal bottom and upstanding front and rear walls, and being substantially co-extensive in length with the corresponding shelf and being located in a position substantially depending from said shelf and with its upper rear portion substantially congruent with the forward edge of the shelf, the trough member being divided into a plurality of compartments by partition members, said shelf being divided into a plurality of compartments by transverse partitions disposed in substantially the same plane as said trough partitions and additional trough partition members subdividing said trough member into a plurality of trough compartments longitudinally opposite each shelf compartment for receiving kindred parts of an assembly placed in the adjacent shelf compartment.

3. A display unit for storing and displaying a plurality of assembled units in adjacent relationship to a stock of separately arranged individual parts corresponding to those employed in the assembly, said unit comprising spaced, upright side supports providing side walls, a rear wall and a top defining a cabinet-like structure open at the front only, and being substantially unobstructed between the front and rear wall, a plurality of shelves extending between said side supports and mounted thereon, and troughs mounted adjacent the forward edge of each of said shelves and extending forwardly thereof and between said upright side supports, each trough having a generally horizontal bottom supporting wall and upstanding front and rear walls being substantially co-extensive in length with the respective shelf and being located in a position substantially depending from the forward edge of the shelf and with their upper rear edges generally continuous with the forward edge of each said shelf, the shelves being divided into a plurality of relatively large compartments and each trough being subdivided into a plurality of relatively small compartments arranged substantially in front of said adjacent shelf compartment adapted to receive relatively small parts kindred to said relatively large assembly.

4. A display and storage unit for a plurality of assembled unitary devices in adjacent display relationship to a stock of separately arranged individual parts corresponding to those comprising the assembly, said unit comprising a cabinet having laterally spaced upright side walls having spaced upstanding front and rear margins and horizontal base and top members providing an enclosure substantially unobstructed between the front and rear margins thereof, at least one horizontal shelf located within the enclosure between the said slide walls and having its rear margin substantially in juxtaposition to the plane of the rear margins of said side walls, said shelf having a depth substantially less than the distance between the front and rear margins of said side walls, whereby the front marginal periphery of said shelf is disposed a substantial distance rearwardly of the front margin of said enclosure, each shelf having associated therewith a trough memer haing a generally horizontal bottom wall and upstanding front and rear walls, each trough member being disposed between said side walls forwardly of the shelf with the upper margin of the upstanding rear wall of said trough in substantial juxtaposition to the front margin of said associated shelf and with said bottom wall disposed below the supporting surface of said shelf, releasable supporting means associated with each shelf and said side walls and operative to associate each shelf releasably in any of a plurality of vertically spaced positions, and releasable supporting means associated with each trough and with said side walls for fixedly disposing the troughs in any of a plurality of vertically disposed positions between said side walls, said supporting means being relatively located for any vertically adjusted position of a shelf, to dispose the trough with the upper margin of its upstanding rear wall in juxtaposition to the front margin of the shelf for permitting completely unobstructed access to the surface of the shelf from the front, shelf partition members transversely dividing the shelf into a plurality of longitudinally disposed shelf compartments for storing assembled units, and trough partitions in said trough, said trough partitions comprising a plurality of partition means dividing said trough into a plurality of relatively small compartments for individually storing a multiplicity of relatively small parts corresponding to those comprising the unitary assembly.

5. A display and storage unit as defined in claim 4 wherein at least one of said troughs has its front margin substantially in the plane of the front margins of said side walls.

6. A display and storage unit as defined in claim 4 having a rear wall extending between the top and base members and between the rear margins of the side walls.

7. A display and storage unit as defined in claim 4 having at least two vertically disposed shelves and associated trough units, one of said shelves being of substantially less depth than the other shelf whereby its associated trough is disposed substantially inwardly of the forward edge of the trough associated with said other shelf.

8. A display and storage unit as defined in claim 4 having at least two vertically disposed shelves and associated trough units, one of said shelves being of substantially less depth than the other shelf whereby its associated trough is disposed substantially inwardly of the forward edge of the trough associated with said other shelf, said inwardly disposed trough and shelf being located above the other shelf and permitting free access from above.

9. A display and storage unit as defined in claim 4 wherein said shelf and trough partitions are adjustable to a plurality of positions upon the shelf and trough.

10. A display and storage unit as defined in claim 4 wherein the front edge of the shelf is provided with a downwardly projecting flange and said trough is disposed with the upper margin of its upstanding rear wall in juxtaposition to the lower margin of said flange.

11. A display and storage unit for a plurality of assembled unitary devices in adjacent display relationship to a stock of separately arranged individual parts corresponding to those comprising the assembly, said unit comprising a cabinet having laterally spaced upright side walls having spaced upstanding front and rear margins and horizontal base and top members providing an enclosure substantially unobstructed between the front and rear margins thereof, at least one horizontal shelf located within the enclosure between the said side walls and having its rear margin substantially in juxtaposition to the plane of the rear margins of said side walls, said shelf having a depth substantially less than the distance between the front and rear margins of said side walls, whereby the front marginal periphery of said shelf is disposed a substantial distance rearwardly of the front margin of said enclosure, each shelf having associated therewith a trough member having a generally horizontal bottom wall and upstanding front and rear walls, each trough member being disposed between said side walls forwardly of the shelf with the upper margin of the upstanding rear wall of said trough in substantial juxtaposition to the front margin of said associated shelf and with said bottom wall disposed below the supporting surface of said shelf, releasable supporting means associated with each shelf and said side walls and operative to associate each shelf releasably in any of a plurality of vertically spaced positions, and releasable supporting means associated with each trough and with said side walls for fixedly disposing the troughs in any of a plurality of vertically disposed positions between said side walls, said supporting means being relatively located for any vertically adjusted position of a shelf, to dispose the trough with the upper margin of its upstanding rear wall in juxtaposition to the front margin of the shelf for permitting completely unobstructed access to the surface of the shelf from the front, shelf partition members transversely dividing the shelf into a plurality of longitudinally disposed shelf compartments for storing assembled units.

FELIX F. LOEB.
JAMES E. BALES.

CERTIFICATE OF CORRECTION.

Patent No. 2,255,744. September 9, 1941.

FELIX F. LOEB, ET AL.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 4, second column, line 35, claim 4, for "slide" read --side--; line 44, same claim, for "memer haing" read --member having--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 2nd day of December, A. D. 1941.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal)