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DRAWINGS ATTACHED



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(54) CABINET FOR A RADIO RECEIVER OR SIMILAR ARTICLE

(71) We, GENERAL ELECTRIC COMPANY a corporation organised and existing under the laws of the State of New York, United States of America residing at 1 River Road, Schenectady 12305, State of New York, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to cabinets, and more particularly to cabinets for radio receivers or similar articles.

Although transparent cubical structures for mounting pictures or the like have been disclosed in the prior art, none have disclosed an arrangement for incorporating a radio receiver or similar article therein. Moreover, none of these structures appears reasonably suited for such use. Examining some of these prior art structures shows that in one approach a foam block was cut to a size approximating the inner dimensions of a transparent cubical structure and fitted therein such that pictures to be displayed could be inserted between the foam block and any of the transparent sides of that structure. A limitation with respect to this design is that the changing or rearranging of pictures on one or more sides may cause undesired movement of the remaining displayed pictures. Another approach was to fashion a second cubical structure from a plastics or comparable material and dimension it slightly smaller than the outer, transparent cubical structure. The side walls of the second or inner structure were spaced from the side walls of the outer structure thereby permitting pictures to be displayed between the inner and outer walls thereof. In the second approach, centering of smaller pictures for viewing through any of the sides was not possible since the displayed pictures were only supported from the bottom of the narrow space existing between the inner and outer side walls. The subject invention per-

mits a radio receiver or similar article to be mounted within a transparent structure employed to display pictures or the like and which may be simply dis-assembled for the ready insertion of pictures. Further, the invention overcomes the above noted limitations in the prior art structures.

It is therefore an object of the present invention to provide a new and improved structure, typically of cubical shape, having transparent side wall areas for displaying pictures or the like.

A further object of the invention is to provide a new and improved means for supporting pictures displayed from within a structure wherein pictures displayed at any one side can be changed without disturbing pictures at any of the other sides.

Still another object of the invention is to provide a new and improved means for supporting pictures displayed from within a structure wherein smaller pictures employed may be held centered or positioned as desired.

A principal aspect of the invention accordingly provides a cabinet for use as a display casing comprising:

(a) a first enclosure member having a top wall and a plurality of transparent side wall areas providing an open end disposed opposite said top wall;

(b) a second enclosure member, said enclosure member including a top wall formed integrally with a plurality of flexible side walls;

(c) said first enclosure member receiving said second enclosure member through said open end of said first enclosure member;

(d) said enclosure members being arranged to provide access between the corresponding side wall areas and side walls thereof for receiving items to be displayed;

(e) means for biasing each of said flexible side walls toward a corresponding transparent side wall area of said first enclosure member for holding said items in position.

A preferred embodiment of the invention

[Price 25p]

will be described by way of example, referring to the drawings, in which:—

Figure 1 is a first perspective view of a cabinet for a radio receiver or the like as viewed from above.

Figure 2 is a top plan view of the cabinet shown in Figure 1.

Figure 3 is a second perspective view of the cabinet as viewed from below.

Figure 4 is an exploded view of the radio receiver chassis and cabinet shown in Figure 1.

Figure 5 is an exploded view of a portion of the cabinet structure.

Referring now to Figures 1, 2 and 3 of the drawings, the cabinet or display casing comprises a cubically shaped structure or first enclosure member 11, fabricated typically of a transparent polystyrene material, having four transparent, vertical side walls 13, a top wall 14, and further comprises a base 15 which closes an open end disposed opposite the top wall of the enclosure member. Associated with the top wall 14 is an ON-OFF button 19, a speaker grille 21, and a locking ring 23 (Figure 4). Base 15 includes a recessed base member 25 having a battery housing door 27, as well as volume control and tuning control knobs 29 and 31 respectively.

Although the cabinet or display casing is illustrated as a cubically shaped structure in the example of the invention presented, it is not intended that the invention be at all limited to such configuration. Thus, after consideration of the specific embodiment described, it will be appreciated that the principles of the invention apply to other polyhedral configurations, such as hexahedral and octahedral structures, as well as to curvilinear configurations such as cylindrical or spherical configurations. With regard to curvilinear structures the first enclosure member may be composed of a single continuous side wall, such as in the case of a cylinder, where pictures may be displayed from a plurality of areas on said side wall.

Referring to Figures 3 and 4 of the drawings, a radio receiver chassis indicated generally at 33, includes a mounting member 35 for securing the chassis within a picture-retaining assembly 37, a circuit board 39 for carrying the radio receiver circuitry, and the recessed base member 25 for supporting circuit board 39 as well as other component parts of the receiver. A speaker 41, having a speaker face 42, is secured within mounting member 35 by means of speaker mounting clips and screws shown respectively at 43 and 45. Volume control potentiometer 46 and tuning control capacitor 47, including control shafts (not shown) are positioned on circuit board 39 such that during assembly the

control shafts and the knobs thereon align with a pair of openings in base member 25 which are defined by ferrules 48a and 48b, respectively. The control knobs, each of which is provided with a radially extending flange 49 and a narrower gripping portion 50, are positioned such that the narrower gripping portions project through the openings in the base 15, while the wider flange portions cover top edges 51 of the ferrules. By this arrangement, the openings at the top edges of the ferrules are covered, thereby contributing to the appearance of the cabinet. Further, assembly and disassembly of the radio receiver is simplified by eliminating the need for removing and reattaching the knobs at any time access to the radio receiver is required. The base member 25 is recessed to a sufficient extent such that while the gripping portion of the control knobs extends far enough through the base member to provide a gripping surface for user manipulation, it does not extend beyond a border 52 of base 15. A further recessed section of base member 25 provides a battery storage compartment 53 for housing the batteries (not shown) to power the radio receiver.

Referring now to Figures 4 and 5, picture-retaining assembly 37 includes the first enclosure member 11 as well as a picture backing unit or second enclosure member 55 having a top wall 56. Spring members 59, in the form of leaf springs, are provided for biasing flexible side walls 57 toward the corresponding transparent side walls 13 of the first enclosure member 11. A spring member 59 is provided for each of the four vertical sides, as illustrated in Figure 4.

More specifically, in a preferred fabrication of the second enclosure member 55, it is initially formed in cruciform shape from a flat sheet of polypropylene. As formed the four side walls 57 extend outwardly from the four sides of the top wall 56, and the spring members 59 are integral with and extend outwardly from the ends of the side walls. To assemble the second enclosure member 55 from the flat sheet of polypropylene, formed as described above, each of the spring members 59 is first folded 180° about a line 60 into contact with its corresponding side walls. Each of the side walls 57 is then bent 90° about line 60a forming the box-like enclosure 55, with slots 61 along the edges thereof.

As best shown in Figure 5, the free end of each spring member is engaged in a U-shaped recess 60b formed on the inner surface of the top wall 56. The length of the spring member is such that, when its free end is engaged with the recess 60b, the spring member assumes a bowed shape, causing the side wall to which it is attached to be biased

outwardly against the corresponding side wall of the first enclosure member 11.

The first enclosure member 11 and the second enclosure member 55 include a pair of generally circular, aligned apertures 63 and 64, respectively, dimensioned to receive the ON-OFF button 19. The first and second enclosure members further include centrally located aligned openings 65 and 66, respectively, for receiving an axially extending member or flange 67, indicated as an integral part of locking ring 23. Locking ring 23 further includes a trim ring 69 which provides a gripping surface to permit user manipulation. Four L-shaped recesses, only two of which appear in the drawing, including horizontal and vertical slots 71 and 72, respectively, are formed in flange 67 at 90° intervals to co-operate with corresponding pins radially projecting from a collar 75 of the radio receiver mounting member 35, one such pin being shown at 73. The L-shaped recesses in association with the pins form a bayonet-type connector.

In assembling the radio receiver chassis 33, circuit board 39 is fitted into position above base member 25, such that the control shafts and knobs thereon of the volume control potentiometer 46 and timing control capacitor 47, are received by the control shaft openings in base member 25. Circuit board 39 is then fastened to base member 25 with three mounting screws, two of which are shown at 81, which thread into receiving holes. Two of the receiving holes, one of which is shown at 83, are formed in a wall of the battery storage compartment 53, and the third hole 85 is located within mounting post 87. Speaker 41 is secured within mounting member 35 with the aid of speaker mounting screws 43 and clips 45 such that the speaker face 42 lies generally in the same plane edge of collar 75 of the mounting member 35. A pair of speaker leads 88 are used to electrically connect the speaker 41 to the output of an audio amplifier stage carried by circuit board 39. Finally, mounting member 35 is secured to the base 15 with base mounting screws 89 which thread into receiving holes 91 located in diagonally opposite posts, one of which is shown at 93. Once assembled the radio receiver 33 would not have to be disassembled other than for servicing of the radio receiver itself.

The picture-retaining assembly 37 is initially assembled by inserting second enclosure member 55 into first enclosure member 11 such that apertures 63 and 64 are substantially aligned. The biasing effect of the spring members 59 tends to keep the enclosure members 11 and 55 in assembled relationship even when the locking ring 23 is removed and the picture-retaining assembly 37 is separated from the base 15. However, to further insure that the enclosure

members remain firmly in assembled relationship, the enclosure member 55 is formed to include a raised collar 56a having a thickness corresponding to the thickness of the top wall 14 of the enclosure member 11. The collar 56a has four equally spaced tabs, one of which is shown at 56b, extending outwardly therefrom. The opening 65 in the first enclosure member 11 includes a counterbore shown at 65a and the tabs 56b are received therein. In assembling the two enclosure members, the tabs 56b are forced over the edge of the opening 65 and snapped into the counterbore 65a, thereby holding the two enclosure members firmly in assembled relationship even when separated from the base 15. The thickness of the tabs corresponds to the depth of the counterbore so that the tabs in the assembled position are flush with the top wall 14. The trim ring 69 of the locking ring 23 may, therefore, fit flush against the surface of the top wall in the assembled position.

Once inserted, enclosure member 55 thus becomes fastened to the enclosure member 11 and will not normally be separated therefrom during insertion or removal of the pictures. To change or rearrange the pictures of any one side, a user would pull back the selected flexible side wall 57 against the bias of the corresponding spring member 59 such that access to a space between the two enclosure members is provided. The biasing of individual walls is important in that it allows for the changing or rearranging of pictures in any one side without disturbing pictures already displayed in the remaining sides. Moreover, in those instances where pictures smaller than a complete side are employed, the individually biased side walls permit the centering or positioning of these smaller pictures as desired.

The assembled radio receiver chassis 33 is fitted into the open bottom end of the second enclosure member 55 until the bottom edges of the side walls 13 and 57 of the first and second enclosure members, respectively, rest against the base 15. Then, while gripping the trim ring 69 of locking ring 23, flange 67 is inserted into apertures 65 and 66 such that the vertical slots 72 of the L-shaped recesses are aligned with pins 73. A pushing downward and subsequent clockwise rotation of the locking ring 23 confines the pins 73 in the horizontal slots 71 to secure the radio receiver chassis 33 within the picture-retaining assembly 37. To effect disassembly of the radio cabinet for the purpose of changing or rearranging displayed pictures, a user would rotate the locking ring 23 in a counterclockwise direction and remove it, thereby allowing the picture-retaining assembly 37 to be separated from the radio receiver chassis 33.

Thus, by the above-described invention, it

is clear that pictures or the like may be conveniently displayed in the cubically shaped structure having transparent side walls, which structure serves as a cabinet for a radio receiver or similar article. Furthermore, the picture-retaining assembly is both inexpensive to manufacture and provides for easy access to the displayed pictures. Moreover, the picture-retaining assembly of the subject invention may be easily separated from the radio receiver unit for the purpose of changing or rearranging the pictures.

WHAT WE CLAIM IS:—

1. A cabinet for use as a display casing comprising:

(a) a first enclosure member having a top wall and a plurality of transparent side wall areas providing an open end disposed opposite said top wall;

(b) a second enclosure member, said second enclosure member including a top wall formed integrally with a plurality of flexible side walls;

(c) said first enclosure member receiving said second enclosure member through said open end of said first enclosure member;

(d) said enclosure members being arranged to provide access between the corresponding side wall areas and side walls thereof for receiving items to be displayed;

(e) means for biasing each of said flexible side walls toward a corresponding transparent side wall area of said first enclosure member for holding said items in position.

2. A cabinet for use as a display casing as recited in Claim 1 wherein said means for biasing each of said side walls of said second enclosure member comprises a spring member.

3. A cabinet for use as a display casing as recited in Claim 1 wherein said means for biasing each of said side walls of said second enclosure member comprises a leaf spring being formed integrally with its associated side wall and having a free end for engaging said top wall of said second enclosure member and being bowed to bias side wall toward the corresponding side wall area of said first enclosure member.

4. A cabinet for use as a display casing as recited in Claim 3 wherein said first and second enclosure members are of a polyhedral shape.

5. A cabinet according to any preceding claim for receiving an article therein, in which said second enclosure member has an open end disposed opposite said top wall of said second enclosure member, and said top walls of said first and second enclosure members include substantially aligned openings; further including a first connecting means, said article being received through the open ends of said first and second enclosure members and including a second connecting means, said first connecting means co-operating with said substantially aligned openings and said second connecting means to secure said article within said second enclosure member.

6. A cabinet for use as a display casing and for receiving an article therein as recited in Claim 5 and further including means for fastening said second enclosure member within said first enclosure member.

7. A cabinet according to Claim 5 or Claim 6, further comprising a locking ring, said locking ring including a trim ring overlying and co-operating with said first enclosure member and further including an axially extending member extending through said substantially aligned openings and including said first connecting means.

8. A cabinet as claimed in any of Claims 5 to 7, wherein said first and second connecting means comprise a bayonet-type connector.

9. A cabinet as claimed in any of Claims 6 to 8 wherein said means for fastening said second enclosure member within said first enclosure member includes a collar extending upwardly from said opening in said top wall of said second enclosure member and having outwardly extending tabs, said first enclosure member including a counterbore extending peripherally around said opening in said first enclosure member to receive said tabs.

10. A cabinet substantially described herein with reference to the accompanying drawings.

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(c) said first enclosure member receiving said second enclosure member through said open end of said first enclosure member;

(d) said enclosure members being arranged to provide access between the corresponding side wall areas and side walls thereof for receiving items to be displayed;

(e) means for biasing each of said flexible side walls toward a corresponding transparent side wall area of said first enclosure member for holding said items in position.

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