

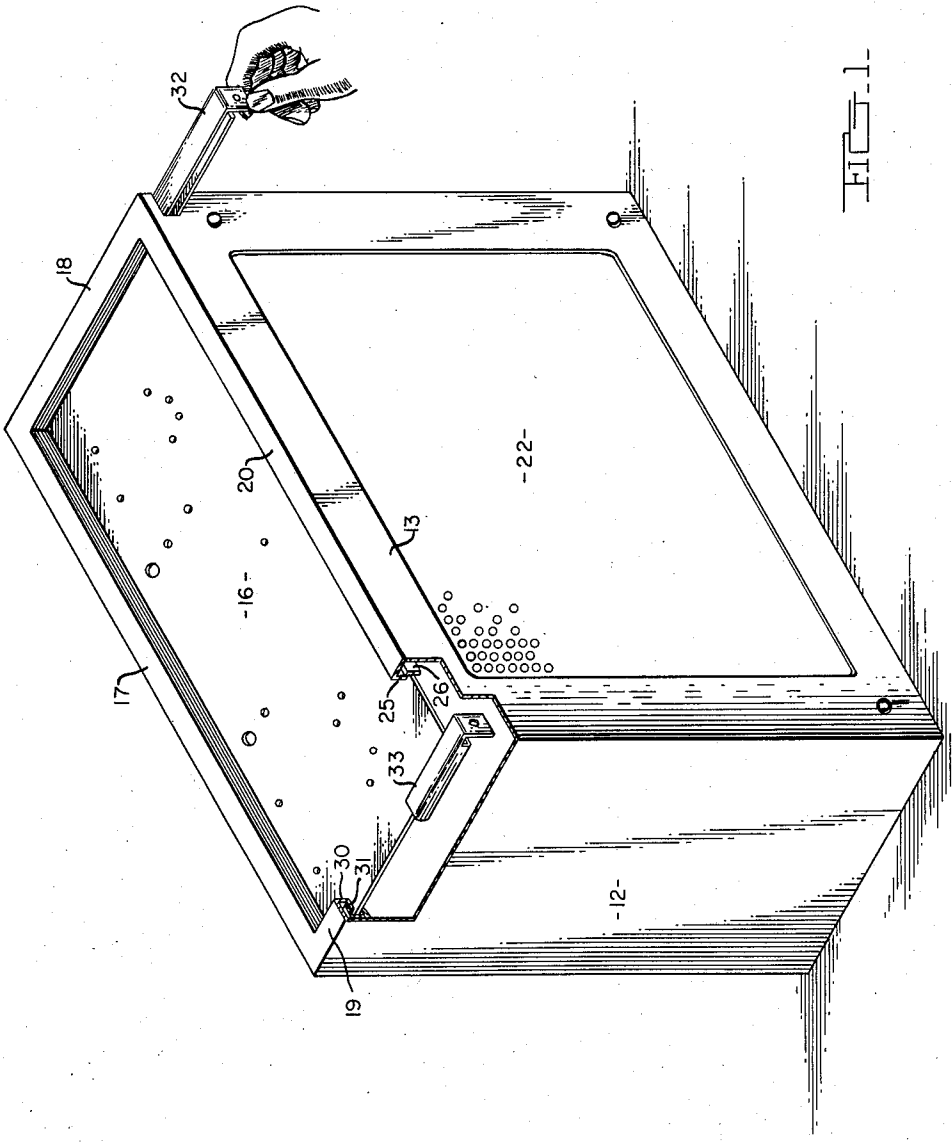
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E. C. ROOME
INSTRUMENT CABINET

2,829,023

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3 Sheets-Sheet 1



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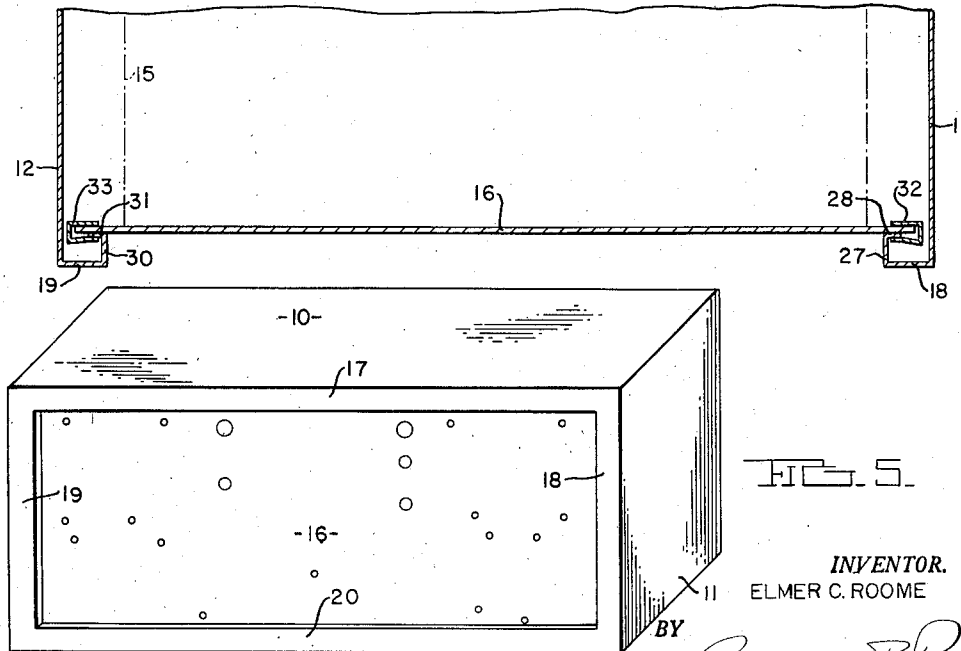
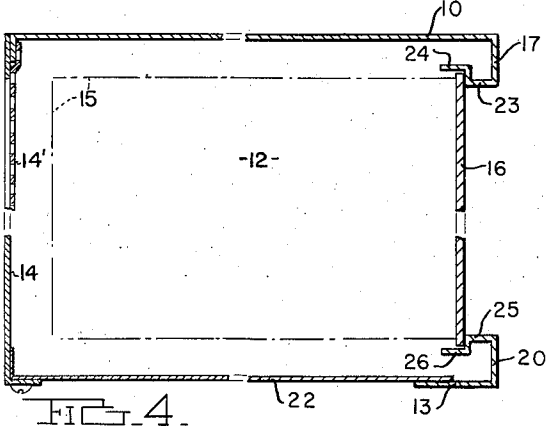
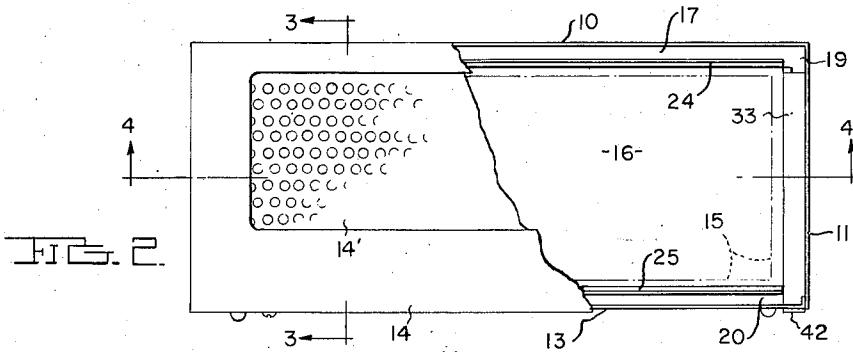
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3 Sheets-Sheet 2



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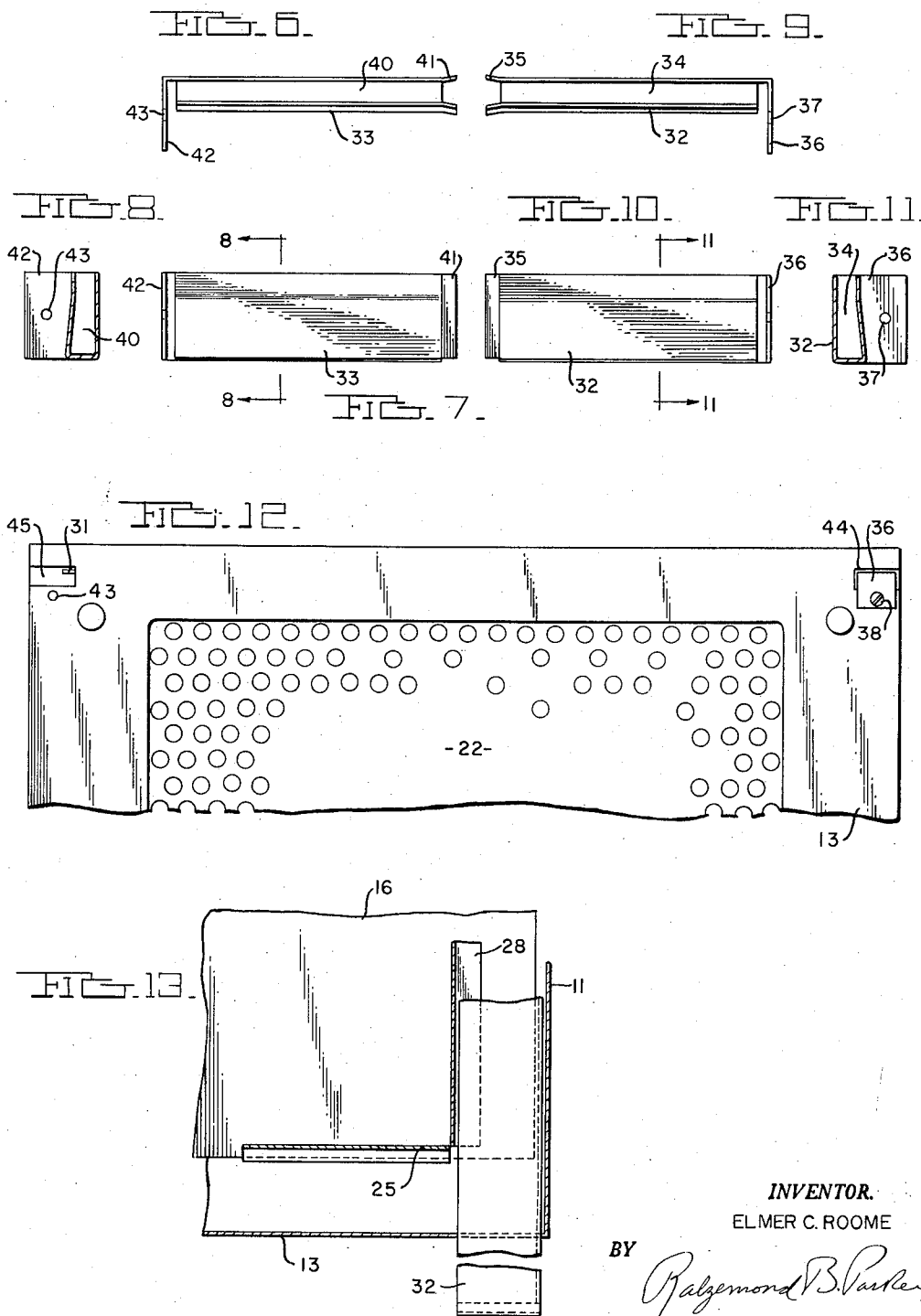
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3 Sheets-Sheet 3



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2,829,023

INSTRUMENT CABINET

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10 Claims. (Cl. 312—257)

The present invention relates to cabinets and more particularly to the mounting of instruments in a cabinet such as are to have an exposed panel.

Heretofore panelled instruments have been designed to fit into protective cabinets of one type or another, or have been designed for rack mounting. For rack mounting the instrument panel has edge slots or holes to receive bolts to fasten the panel and its instrument to the rack frame. By reason of these slots or holes such panels are not suited for cabinet mounting because these attaching means are then exposed to view. Hence it has been necessary for manufacturers, who advertise a certain instrument is available in either cabinet or rack style, must build and stock two different models.

An object of the present invention is to provide an instrument cabinet capable of accommodating numerous types of panelled cabinets.

Another object is to provide an instrument cabinet to house conventional rack mounted equipment in such fashion as to give the appearance of permanently encased instruments.

Another object is to provide a cabinet for panel mounted instruments wherein it is possible to enclose standard rack mounted instruments in an attractive cabinet without changes or modifications of the instrument.

Another object is to provide a cabinet wherein a standard instrument for rack mounting can be housed without exposing the attaching means for such rack mounting and thereby give the appearance of the usual cabinet mounted equipment.

A further object is to provide improved means for removably attaching an instrument panel as a front for a cabinet.

A further object is to provide a concealed spring clip assembly for mounting an instrument and its panel in a cabinet.

A still further object is to provide slidable spring clip fasteners for anchoring an instrument in a cabinet; and to provide other improvements as will hereinafter appear.

In the accompanying drawings:

Fig. 1 is a perspective view, partly broken away in section, of an instrument cabinet constructed in accordance with this invention and showing the cabinet on its back and a fastening clip being manually inserted;

Fig. 2 is a rear elevation view of an instrument cabinet embodying one form of the invention, the back panel being broken away to reveal the interior of the cabinet;

Fig. 3 is a broken sectional view on line 3—3 of Fig. 2;

Fig. 4 is a view on section line 4—4 of Fig. 2;

Fig. 5 is a perspective view of the cabinet with the instrument panel in place;

Fig. 6 is an edge elevation view of the slide fastener for the left side of the panel;

Fig. 7 is a side elevation view of the same fastener;

Fig. 8 is a section view on line 8—8 of Fig. 7;

Fig. 9 is an edge elevation view of the slide fastener for the right side of the panel;

Fig. 10 is a side elevation view of the same;

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Fig. 11 is a section view on line 11—11 of Fig. 10;

Fig. 12 is a fragmentary view of the bottom of the cabinet showing one clip fastener in place; and

Fig. 13 is a fragmentary detail in part section showing the right hand fastener entering the cabinet.

Referring to the drawings the cabinet of the invention is of generally rectangular box shape formed by a top 10, sides 11 and 12, a bottom 13, a back 14, and an apertured front forming a sight opening to expose the panel 16 of the housed instrument. The sight opening is bounded by a molding formed by bending the front edges respectively of the top 10, the two sides 11 and 12, and the bottom 13 at right angles to form four flanges 17, 18, 19, 20 lying in the same plane with angular meeting edges welded to form a continuous finished molding giving the pleasing appearance of an open picture frame. Preferably, as shown in Figs. 1 and 12, the bottom 13 has a large opening covered by an open work metallic insert 22 for ventilation or as an alternative may itself be apertured for the same purpose. The back 14 may also be provided with an apertured plate or screen 14' as shown in Figs. 2 and 3. Also it should be noted that the top 10 and sides 11 and 12 are preferably fabricated from one piece of sheet metal.

The cabinet is designed to house an instrument, such as an electronic component of a computer. The instrument, however, is secured to only one member of the cabinet, specifically the front panel 16. The instrument is indicated in dotted outline at 15, note Figs. 2, 3 and 4. The instrument and front panel form a unitary assembly which may be introduced into the cabinet through the rear of the cabinet when the back 14 is removed.

In order to seat the top and bottom margins of the instrument panel 16, the molding flange 17 of the top 10 is bent inward to form the reveal 23 of the molding and a shouldered seat for the panel paralleling the top 10 and extending substantially throughout the length of the top 10. In the same manner the molding flange 20 of the bottom 13 is bent inward to form the opposite reveal 25 and a like shouldered seat 26 paralleling the bottom 13 and extending substantially throughout the length thereof.

For seating the end margins of the instrument panel 16, the molding flange is bent inwardly to form one side reveal 27 of the molding to terminate in a reversely turned rib 28 spaced from the side 11. Also the molding flange 19 is bent inward to form the other side reveal 30 of the molding to terminate in a reversely turned rib 31 spaced from the side 12. The ribs 28 and 31 lie in the same vertical plane as do the shoulders 24 and 26 and thus form a substantially rectangular vertical seat for the margin of the instrument panel 16, which margin is concealed from the front of the cabinet by the picture frame molding when the instrument is assembled in the cabinet. This is important because it permits instrument panels for racks to be cabinet mounted without showing the edge slots in the panel which are essential for rack mounting. Thus the same panel can be used for both rack and cabinet mounting and it is now no longer necessary to stock two different instrument models.

For anchoring panel 16 in place with its attached instrument, right and left slide clip spring fasteners 32 and 33 are provided, each comprising an elongated flat strip of generally U-shaped cross section having a length substantially equal to the length of the vertical width of the panel 16. Thus the right hand fastener 32 has an elongated relatively narrow slot or channel 34 terminating at one end in diverging guides 35. At the other end, one side wall of the channel is extended beyond the other and bent laterally inwardly to form an ear 36 having an aperture 37 to receive a screw 38 by which the fastener is attached to the bottom 13 of the cabinet, when prop-

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erly assembled. Similarly the left hand fastener 33 has a slot or channel 40 having diverging guides 41 at one end and also having one side bent laterally at the opposite end to form an ear 42 having an aperture 43 to receive an attaching screw as will be understood. The width of each channel 34 and 40 is such as to receive both the margin of the panel 16 and the seating rib 28 or 31 in resiliently gripping relation as the respective guides meet these parts and yieldingly spread the slot sides. This spring gripping action is aided by a relatively slight inward bending of one side wall of the clip towards the other side as shown in Figs. 8 and 11. Each fastener is thus spring clipped about a rib and a panel margin as a firm supporting anchor for the panel 16.

The fastener 32 is dimensioned to slide freely through a hole 44 provided in the bottom 13 in alignment with the panel side and the panel seating rib as a telescoped assembly. Similarly, the fastener 33 is likewise dimensioned to slide freely through a hole 45 provided in the bottom 13 in alignment with the other panel side and panel rib as a telescopic assembly. When both fasteners are in assembled position the respective ears 36 and 42 close the respective holes 44 and 45. In Fig. 12, clip 32 is shown installed in place with its ear 36 in overlapping relation to the hole 44. In this figure, the other hole 45 is shown exposed with the clip 33 removed.

For assembling an instrument in housed condition, the cabinet is placed front down, the two slide fasteners and the back removed whereupon the instrument can be lowered to position with the margin of its front panel 16 seating upon the two opposite shouldered flanges 24 and 26, and upon the two opposite side ribs 28 and 31. The two fasteners 32 and 33 are now respectively inserted through the two bottom slots 44 and 45, so that the respective guides 35 and 41 meet and straddle the ribs 28, 31 and the seated margins of the panel 16. As each fastener is pushed in its slot it telescopes with its rib and panel margin to yieldingly spread its channel side walls as a snug fit anchor. Thus each side of the panel is firmly gripped throughout its length and ensures the weight of the instrument being evenly distributed along the entire length of the slide fasteners. Thus heavy instruments can be taken care of. With the instrument mounted, the back is replaced and the cabinet turned to rest on the bottom 13, where preferably supporting feet hold the cabinet spaced from a support to permit circulation of air into the cabinet.

It will now be apparent that a complete unitary cabinet has been devised for housing instruments having conventional panels or panels for rack mounting whereby a rack panel when assembled into the cabinet has the same appearance as a conventional type of panel. Furthermore, the novel clip anchoring means for the panel forms not only a firm anchor throughout the length of two opposite panel margins but also provides means for ready release of a panel by withdrawing the clip means from panel engaging position. Also the molding about the sight opening gives a pleasing finish while at the same time concealing the clips and panel attaching slots present in panels for rack mounting.

What is claimed is:

1. A cabinet for mounting panelled instruments com-

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prising a box formed by a top, a bottom, two sides, a back and a front having a sight opening, a panel to close said opening, two ribs respectively carried by said front in offset relation therewith and on opposite sides of said opening, said ribs being disposed to form seats for two opposite panel margins and spaced respectively from the adjacent walls of the box to provide two passages, two elongated spring clips respectively slidable in said passages, each clip having a linear slot for telescopic engagement with a rib and the seated panel margin for anchoring said panel, and said box having holes respectively aligned with said passages for admitting and removing said clips.

2. A cabinet according to claim 1, wherein said ribs respectively parallel the box sides and have a length substantially equal to the width of said panel.

3. A cabinet according to claim 2, wherein each clip has a length substantially equal to the length of a rib.

4. A cabinet according to claim 3, wherein said holes are in the box bottom.

5. A cabinet according to claim 3, wherein each clip has a hole closing ear with means for connecting the ears to the bottom.

6. A cabinet according to claim 3, wherein two flanges are carried by the front to respectively parallel the top and bottom of the sight opening, said flanges terminating in the plane of said ribs, whereby said panel is marginally supported by the flanges and the ribs.

7. A cabinet according to claim 6, wherein a molding frames said sight opening to conceal the panel margin and the clip assemblies.

8. A cabinet according to claim 7, wherein the molding has a continuous reveal bounding the sight opening.

9. A cabinet for mounting panelled instruments comprising a box including a front having a sight opening and two sides, a panel to close said opening, two ribs respectively carried by said front in offset relation therewith and on opposite sides of said opening, said ribs being spaced respectively from said sides to provide two passages and disposed to form seats for two panel margins, said box having holes respectively aligned with an end of said passages, and with the ribs and margins, and elongated clips arranged to enter said passages through said holes, each clip having a longitudinally disposed slot for telescoping with said rib and panel margin, said slot having a side converging towards the other side for spring gripping action.

10. In a cabinet having an opening therein, flanges extending around the margins of said opening, each of said flanges including a rib attached thereto and in spaced relation therewith, a panel to close said opening and having marginal portions thereof in seating engagement with said ribs, and spring clip means telescopically engaging said ribs and said marginal portions of said panel to secure said panel to said ribs.

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