July 4, 1933. W. R. RIX 1,916,894

CABINET CONSTRUCTION

Filed Oct. 15, 1931

Fig. 1

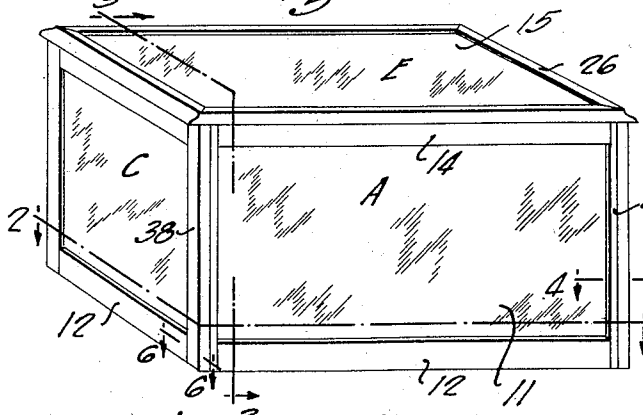


Fig. 4

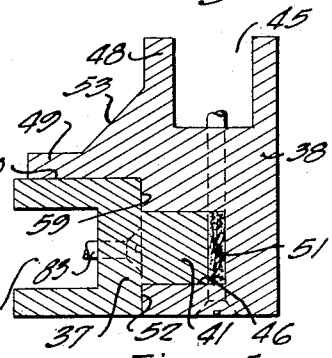


Fig. 2

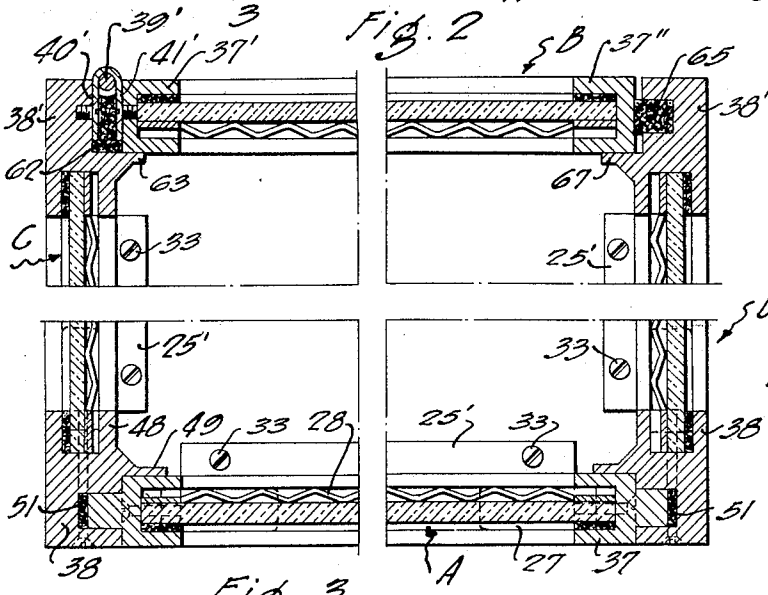


Fig. 5

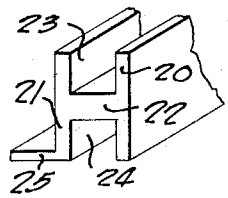


Fig. 7

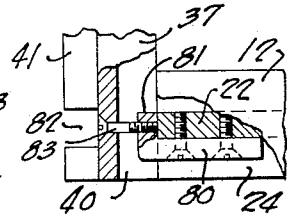


Fig. 3

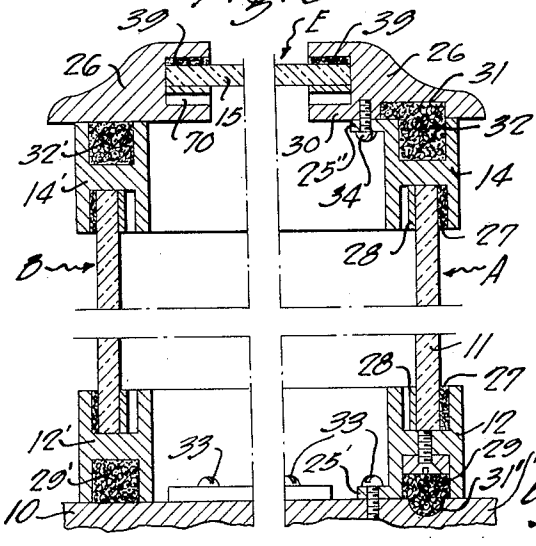
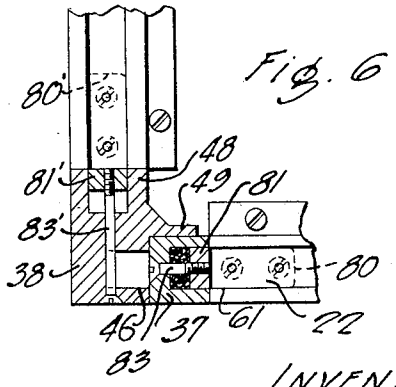


Fig. 6



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UNITED STATES PATENT OFFICE

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CABINET CONSTRUCTION

Application filed October 15, 1931. Serial No. 568,925.

This invention relates to a panel construction especially applicable to museum cabinets but having utility in other structures such as show cabinets and furniture generally, and is a continuation in part of my copending application, Serial No. 397,520, filed October 5, 1929, which has resulted in Patent No. 1,859,798, dated May 24, 1932.

Objects of the invention are to provide a panel construction which is easy to assemble, which has substantially air tight, dust-proof joints, and which comprises but few parts. Structural improvements forming part of this invention are hereinafter fully described and pointed out in the claims.

The panel construction of the present invention includes a number of structural elements of novel shape which it is contemplated will have utility in structures other than the specific structure illustrated and described as one embodiment of the invention.

The accompanying drawing illustrates one embodiment of my invention wherein the novel panel construction is utilized in a museum cabinet.

In the drawing:

Fig. 1 is a perspective view of a museum cabinet embodying my invention;

Fig. 2 is a horizontal section on an enlarged scale on the line 2—2 of Fig. 1;

Fig. 3 is a vertical section on an enlarged scale on the line 3—3 of Fig. 1;

Fig. 4 is a horizontal section on an enlarged scale on the line 4—4 of Fig. 1 with the glass, glass packing and glass retaining springs omitted;

Fig. 5 is a perspective view of one of the horizontal margin pieces of my panel construction;

Fig. 6 is a fragmentary sectional view on the line 6—6 of Fig. 1; and

Fig. 7 is a fragmentary view, partly in section of a joint between horizontal and vertical members of a panel of the cabinet.

The sides and top of the museum cabinet comprise sheets of panel material, such as glass, each having its edges retained in four margin pieces and constituting panels A, B, C, D and E. These panels are joined by connections between their abutting margin pieces to form a rigid structure. Referring to Fig. 2, panel B in the rear of the cabinet, as viewed in the drawings, is hinged to form a door, and hence differs somewhat from the corresponding front panel A in construction and manner of connection to the cabinet.

The vertical panels A, C and D are each provided with lower and upper horizontal margin pieces 12 and 14 of identical cross sectional shape. Each of these horizontal margin pieces, shown separately in Fig. 5, is of a generally H shape in section and is provided with the two vertical flanges 20 and 21 and a web 22, which define the two channels 23 and 24. An integral flange 25 extends laterally outwardly from the edge of flange 21. The vertical panels are mounted between top and bottom frame members 26 and 10 of the cabinet, the relative position of the margin pieces 12 and 14 being reversed so that the side or edge provided with the lateral flange 25 or 25′ abuts a plane, horizontal surface of the respective frames. The juxtaposed elements are formed with complemental recesses receiving compressible packing material and are clamped together to compress the packing and provide a substantially air-tight joint therebetween. In the lower horizontal margin pieces, the flanges indicated by the numeral 25′ are at the bottom of the pieces and are secured by screws 33 to a bottom frame member or base 10 such as a support or table top upon which the cabinet rests, while in the upper horizontal margin pieces, the corresponding flanges indicated by the numeral 25″ are at the top of the pieces and are secured by screws 34 to the plane lower surface 30 of the cornice or frame member 26. As shown in Fig. 3, this plane surface 30 is parallel to the sides of a panel-engaging channel 39, is provided with a downwardly disposed vertical channel or recess 31, and is adapted to abut against the adjacent margin piece 14.

The upwardly disposed channel 23 of the upper margin piece 14 cooperates with the vertical channel 31 in the plane lower surface 30 of frame piece 26 to form an enclosure for compressively holding an elastic packing 32 such as felt. The base is provided with

horizontally extending grooves or recesses 31′ disposed in alignment with each of the panels A, C and D, the recesses cooperating with the downwardly disposed channels 24 in the lower margin pieces 12 to provide an enclosure for the packing 29. The downwardly disposed channel of the upper margin piece 14 and the upwardly disposed channel of the lower margin piece 12 receive the sheet of glass 11.

In the hinged or door panel B, the glass is retained by similar horizontal margin pieces 12′ and 14′ provided with packings 29′ and 32′, but having no horizontal flanges.

The top panel E of the cabinet comprises a sheet of glass 15 retained within the horizontal channels 39 of the four frame pieces 26.

As shown in Figs. 1 and 2, the upper and lower horizontal margin pieces abut at their ends against vertical margin pieces 37 and 38 which engage to form the corner posts of the cabinet. Referring to Fig. 4, which illustrates in section one pair of the vertical margin pieces 37 and 38, margin piece 37 is provided with a channel 40 for the reception of panel material, and on its opposite side a tenon or tongue 41. Margin piece 38 is provided with a channel 45 adapted to receive panel material, and with a channel 46 angularly disposed with respect to channel 45 and adapted to receive the tenon 41 of margin piece 37, the tenon 41 closely engaging the sides of the channel 46. The flange 48 which defines the inner side of the recess 45 is balanced by a flange 49 of similar length and thickness angularly disposed thereto. The plane side surface 50 of flange 49 is adapted to engage the inner side surface of margin piece 37. In addition the plane surfaces 59 and 52 of margin piece 38 are adapted to cooperate with channel 46 in closely engaging the margin piece 37 and retaining it in fixed angular relation to margin piece 38. Suitable packing material 51 is preferably held in compressed state in channel 46 by the tenon 41.

This improved joint construction facilitates the assembly of panels of a cabinet, since two vertical margin pieces may be easily engaged by slipping a tenon 41 of one into a channel 46 of the other, and in this position the two margin pieces are securely held against relative angular movement while other panels are being assembled therewith. In assembling unsupported panels the channel and tenon construction will prevent the panel of which margin piece 37 is a member from falling over sidewise. A diagonal surface 53 is preferably provided on marginal piece 38 between flanges 48 and 49, and is preferably symmetrically disposed between these flanges. This diagonal surface may be drilled to receive fastening elements for adjustably supporting any desired number of shelf brackets such as are shown in my aforesaid copending application. The joint between panels A and C is similar to that between panels A and D above described in connection with Fig. 4. As shown in Fig. 2, certain characteristic features of this construction are present in the joints between panels C and B, and panels D and B.

I have provided means for locking together the adjacent abutting horizontal and vertical margin pieces at the corners of each panel. In the prefered construction shown in Figs. 6 and 7, this function is performed by an L-shaped block 80, affixed by screws to the web 22 of the horizontal margin piece on the opposite side from the glass, and a tensile member, such as a bolt, which engages the vertical margin piece and the vertically disposed portion of the L-shaped block. Refering to Fig. 7 which illustrates one of the connections between horizontal and vertical margin pieces of the front panel A, the L-shaped block 80 mainly occupies the lower packing channel 24 of the horizontal margin piece and is provided with a vertically disposed end 81 occupying the end portion of the glass retaining channel 40 of the vertical margin piece outside of the portion occupied by the glass. Vertical margin piece 37 is cut away at 82 to facilitate the passage of a bolt 83 therethrough, and this bolt 83 engages the vertically disposed portion 81 of the L-shaped block 80. In this manner, the horizontal and vertical margin pieces are locked by tightening the bolt 83 until the abutting edges of the margin pieces are drawn together into a close fit.

This construction also exhibits the advantage of absence of parts which project from either the inner or outer sides of the cabinet or which might interfere in any way with the glass of the panel. The use of the L-shaped block permits the engagement of a tensile member such as the bolt 83 with the H-shaped margin piece without the necessity for forming either the flanges or web of this margin piece of undue thickness.

As shown in Fig. 6, the horizontal and vertical margin pieces of the adjacent panel are locked in the same manner, a bolt 83′ passing through the vertical margin piece and engaging a vertically disposed portion 81′ of an L-shaped block 80′ affixed to the web of the horizontal margin piece to draw the abutting margin pieces tightly together.

The door panel B is hinged to the vertical margin piece 38′ of panel C by means of a vertical strap hinge 39′ having strap members 40′ and 41′ secured respectively to the adjacent margin pieces. Straps 40′ and 41′ of hinge 39′ are spaced apart to receive a suitable compressible packing 62 therebetween. When the hinged panel B is in its closed position as shown in Fig. 2, packing 62 will be under compression and hence render the joint dust-proof. A flange 63 extend-

ing laterally from margin piece 38′ is adapted to engage the inner side surface of margin piece 37′ of the hinged panel. At the opposite end of the hinged panel B a similar margin piece 37″ is provided and suitable packing 65 retained in a channel in margin piece 38″ is adapted to engage therewith to render the joint dust-proof. A flange 67 extends laterally from margin piece 38″ and is adapted to engage the inner side surface of the margin piece 37″ to provide an inner stop for hinged panel B.

A preferable construction for retaining each of the glass sheets within the channels of the respective margin pieces is shown in Fig. 2. A sheet of glass, for example the sheet 11 of panel A, extends into the channel of the margin piece and is held tightly against a strip of rubber, felt, or similar packing 27 by the corrugated spring 28 contained within the channel. Preferably the packing 27 is on the outer side of the panel and the spring 28 on the inner side. In a similar manner the horizontal or top panel E is held in the recesses 39 of the cornice members 26 by corrugated springs 70.

The cabinet illustrated and described herein as an embodiment of my invention is quite dust-proof. The panels of which it is composed are fitted together with dust-proof joints of compressed elastic packing and the joint between the cabinet and the floor or table upon which is rests is likewise provided with dust-proof compressed packing. It will be noted that the screws 33 and 34 (Fig. 3), respectively engaging the flanges 25′ and 25″ which preferably extend the entire length of the margin pieces, firmly and rigidly secure the same to their respective frame members and furthermore retain the packing 29 and 32 in compressed state, thus providing a dust-proof joint.

The margin pieces which are employed in my invention are of such shapes that they may be formed of extruded metal, and in order to provide an attractive finish for the cabinet I preferably utilize metal which is rust-resisting.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

I claim:

1. In a cabinet of the class described, a horizontal corner joint comprising a frame member having a substantially plane, horizontal surface formed with an elongate recess therein, a panel margin piece having spaced flanges abutting said plane surface at opposite sides of the recess, said flanges defining a channel opening toward said frame recess and cooperating therewith to provide an elongate chamber for the reception of packing material, compressible packing in said chamber, and means for fastening the margin piece to the frame member to compress said packing in said chamber.

2. In a cabinet of the class described, a horizontal corner joint comprising a frame member having a substantially plane, horizontal surface formed with an elongate recess therein, a panel margin piece having spaced flanges abutting said plane surface at opposite sides of the recess, said flanges defining a channel opening toward said frame recess and cooperating therewith to provide an elongate chamber for the reception of packing material, compressible packing in said chamber, one of said flanges having an integral, laterally projecting flange juxtaposed to said plane surface, and fastening means passing through said lateral flange and into said frame member, thereby to secure said elements together and compress the packing in said chamber.

3. In a cabinet of the class described, a horizontal corner joint comprising a frame member having a substantially plane, horizontal surface formed with an elongate recess therein, a panel margin piece having spaced flanges abutting said plane surface at opposite sides of the recess, said flanges defining a channel opening toward said frame recess and cooperating therewith to provide an elongate chamber for the reception of packing material, compressible packing in said chamber, and means for fastening the margin piece to the frame member to compress said packing in said chamber, said margin piece having a second channel opening away from the frame member and adapted to receive panel material.

4. In a cabinet of the class described, a horizontal corner joint comprising a frame member having a substantially plane, horizontal surface formed with an elongate recess therein, a panel margin piece having spaced flanges abutting said plane surface at opposite sides of the recess, said flanges defining a channel opening toward said frame recess and cooperating therewith to provide an elongate chamber for the reception of packing material, compressible packing in said chamber, one of said flanges having an integral, laterally projecting flange extending substantially from end to end of the margin piece and being juxtaposed to said plane surface, and fastening means passing through said lateral flange and into said frame member, thereby to secure said elements together and compress the packing in said chamber, said margin piece having a second channel opening away from the frame member and adapted to receive panel material.

Signed by me at Boston, Massachusetts, this 8th day of October 1931.

WILLIAM R. RIX.