May 24, 1932. W. R. RIX 1,859,798

CABINET CONSTRUCTION

Filed Oct. 5, 1929

Fig. 1

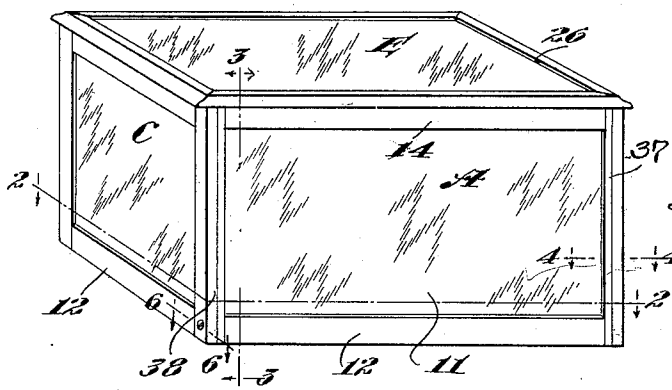
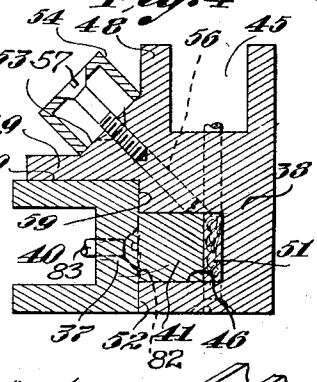


Fig. 4



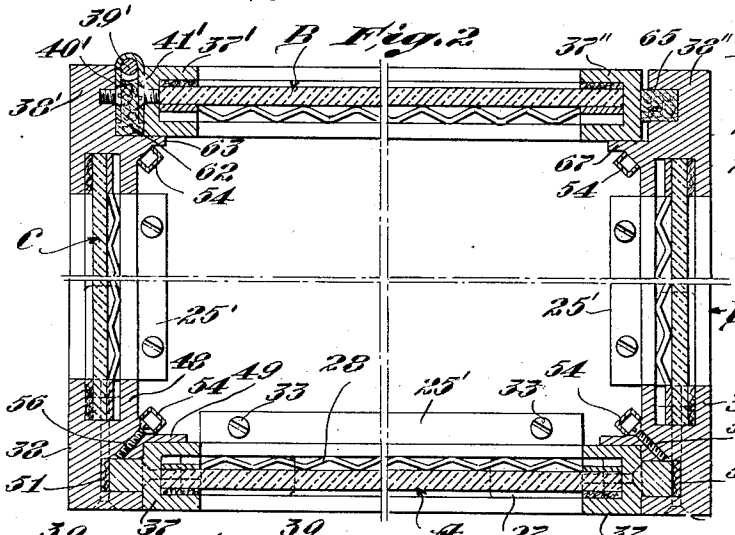


Fig. 2

Fig. 5

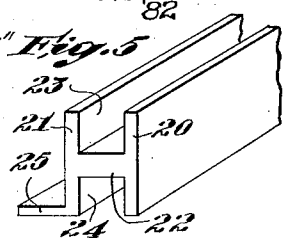
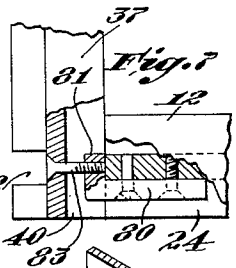


Fig. 7



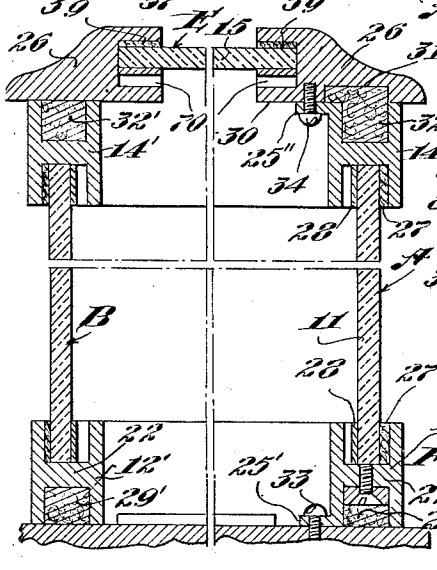


Fig. 3

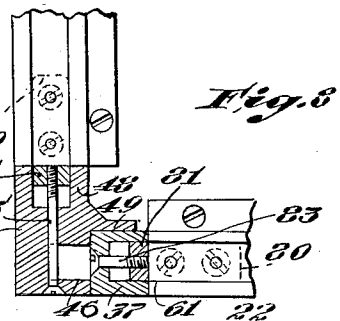
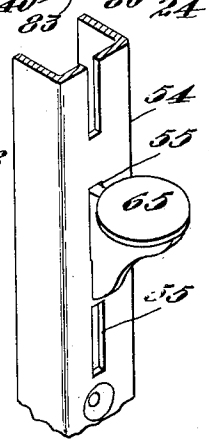


Fig. 6



Inventor
William R. Rix.
by Roberts, Cushman & Woodberry,
Attorneys

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UNITED STATES PATENT OFFICE

WILLIAM R. RIX, OF ILION, NEW YORK, ASSIGNOR TO A. N. RUSSELL & SONS COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK

CABINET CONSTRUCTION

Application filed October 5, 1929. Serial No. 397,520.

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.

Objects of the invention are to provide a panel construction which is easy to assemble, which has 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 drawings illustrate one embodiment of my invention wherein the novel panel construction is utilized in a museum cabinet. In the drawings:

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;

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

Fig. 8 is a perspective view of one of the vertical hanger bars adapted for use in supporting shelves within the cabinet and a removable shelf bracket adjustably supported thereon.

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. As shown in Fig. 3, the horizontal upper and lower margin pieces are reversed in position. In the lower horizontal margin piece, the flange indicated by the numeral 25′ is at the bottom of the piece and is secured by screws 33 to a base such as a floor or table upon which the cabinet rests, while in the upper horizontal margin piece, the corresponding flange indicated by the numeral 25″ is at the top of the piece and is secured by screws 34 to the plane lower surface 30 of the cornice 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 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 cornice margin piece 26 to form an enclosure for compressively holding an elastic packing 32 such as felt. In the lower margin piece 12, the downwardly disposed channel forms an enclosure for similar 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 cornice margin 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 an inwardly offset 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.

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 provided on margin piece 38 between flanges 48 and 49 and is preferably symmetrically disposed between these flanges. A channel member 54, provided with slots 55 as shown in Fig. 8, may be secured to this diagonal surface 53 by screws or other fastening elements 57, as shown in Fig. 4 for adjustably supporting any desired number of shelf brackets 65 within the corners of the cabinet. It will be seen that the symmetrical diagonal configuration of the inside surface of the margin piece permits the use of a simple rectangular channel member instead of the usual bar of more complicated cross-sectional shape.

This diagonal surface is preferably drilled to provide openings to receive one or more diagonally extending panel-locking bolts 56, shown in Fig. 2, and in dotted lines in Fig. 4, adapted to engage the tenon 41 of the abutting vertical margin piece. By means of this bolt, the angularly related panels may be locked against relative movement. A suitable compressible packing 51 is preferably held in a compressed state in channel 46 by the tenon 41.

While the joint shown in Fig. 4, which is the joint between panels A and D, has just been described, the joint between panels A and C is similar, and certain features of this construction are present in the joints between panels C and B, and panels D and B as will be apparent from Fig. 2 of the drawings.

I have provided means for locking together the adjacent abutting horizontal and vertical margin pieces at the corners of each panel. In a preferred 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. Referring 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 vertical 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 therebe-

tween. 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 extending 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 top panel E is held in the horizontal recesses 39 of the cornice member 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 it rests is likewise provided with dust-proof compressed packing.

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.

I claim:

1. A corner construction comprising two margin pieces, each having a channel for the reception of panel material, one piece having a second channel facing at a right angle to the first channel, and the other piece having a tenon extending parallel to its channel and in the opposite direction and fitting into the second channel of the first piece, and an offset flange extending from the inner surface of the first piece parallel to said second channel and in engagement with the inner surface of the other piece.

2. A panel comprising a channeled margin piece, a second margin piece with its end abutting a side surface of the other margin piece and having two flanges and a connecting web, said flanges and web defining oppositely disposed channels, a sheet of panel material adapted to be retained in the channel of the first-named margin piece and in one of said channels of the second margin piece, a block secured to said second margin piece, said block occupying the channel opposite from the panel material and extending into the channel of said first-named margin piece, and a bolt adapted to engage said first margin piece and said block to draw said margin pieces tightly together.

3. A corner construction comprising margin pieces of two panels, one of said margin pieces having an inner flange and an outer flange forming between them a channel for the reception of a panel, a second channel located behind the first channel and facing at a right angle to the first channel, and an inwardly offset third flange extending laterally from the inner side of the margin piece in the direction in which the second channel faces, and the other margin piece having an inner flange and an outer flange forming between them a channel for the reception of a panel and a tenon extending parallel to the last named channel and in the opposite direction and fitting into the second channel of the first margin piece, the inner flange of the second margin piece abutting against the laterally extending flange of the first margin piece.

4. A corner construction comprising margin pieces of two panels, one of said margin pieces having an inner flange and an outer flange forming between them a channel for the reception of a panel, a second channel located behind the first channel and facing at a right angle to the first channel, and an inwardly offset third flange extending laterally from the inner side of the margin piece in the direction in which the second channel faces, the laterally extending flange and the inner flange of the first margin piece being connected by a diagonal surface, and said piece having a transverse opening leading from said surface to said second channel, and the other margin piece having an inner flange an an outer flange forming between them a channel for the reception of a panel and a tenon extending parallel to the last named channel and in the opposite direction and fitting into the second channel of the first margin piece, the inner flange of the second margin piece abutting against the laterally extending flange of the first margin piece, and a bolt received in said transverse opening and bearing against said tenon to hold the two pieces against relative displacement.

5. A corner construction comprising margin pieces of two panels, one of said margin pieces having an inner flange and an outer flange forming between them a channel for the reception of a panel, a second channel located behind the first channel and facing at a right angle to the first channel, and a third flange extending laterally from the inner side of the margin piece approximately midway between the two channels, and the

other margin piece having an inner flange and an outer flange forming between them a channel for the reception of a panel and a tenon extending parallel to the last named channel and in the opposite direction and fiting into the second channel of the first margin piece, the inner flange of the second margin piece abutting against the laterally extending flange of the first margin piece.

6. A frame for a cabinet panel comprising an elongate metal piece having parallel inner and outer flanges providing a longitudinal recess for receiving the edge of panel material, a longitudinal channel opening at right angles to said recess and adapted to receive a tenon of a second frame piece, and an offset flange extending at right angles to said first named flanges intermediate the recess and channel and adapted to seat against the inner side of the second frame piece.

7. A frame for a cabinet panel comprising an elongate metal piece having parallel inner and outer flanges providing a longitudinal recess for receiving the edge of panel material, a longitudinal channel opening at right angles to said recess and adapted to receive a tenon of a second frame piece, and an offset flange extending a right angles to said first named flanges intermediate the recess and channel and adapted to seat against the inner side of the second frame piece, the first frame piece also having a diagonal, transverse opening leading from its inner side between said offset flange and said inner flange to said channel and adapted to receive a bolt for securing the first and second pieces against relative displacement.

Signed by me at Ilion, New York, this 3rd day of October, 1929.

WILLIAM R. RIX.