Feb. 3, 1959 E. P. RUDA 2,871,520

PANEL SUPPORT

Filed Feb. 1, 1955 2 Sheets-Sheet 1

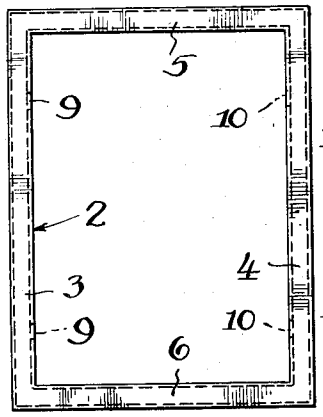

Fig. 1

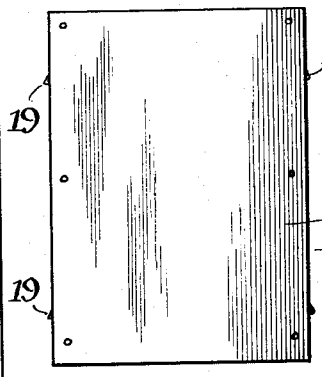

Fig. 2

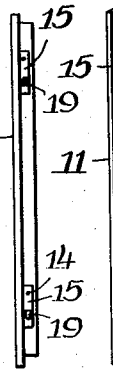

Fig. 3

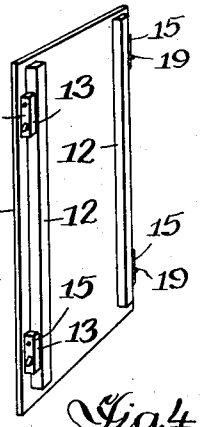

Fig. 4

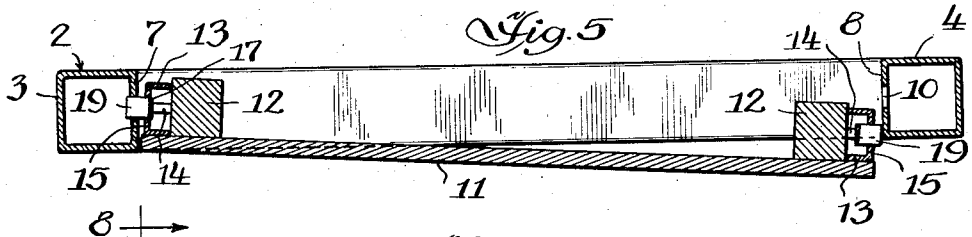

Fig. 5

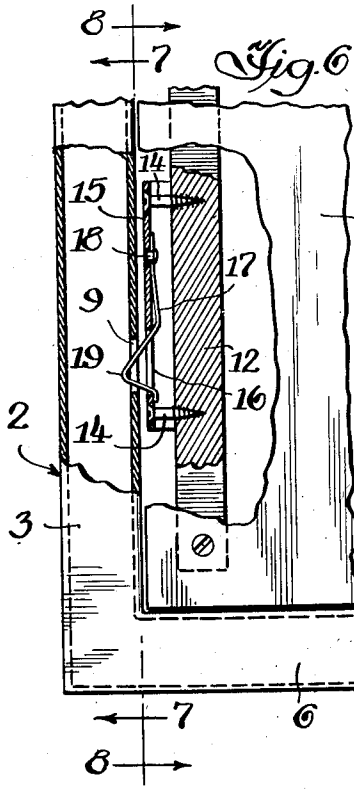

Fig. 6

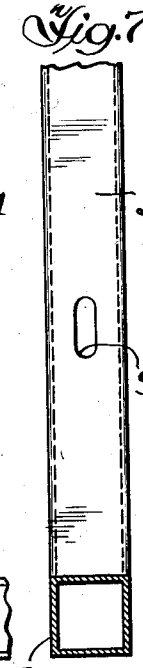

Fig. 7

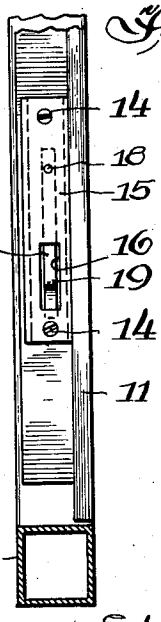

Fig. 8

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Feb. 3, 1959 E. P. RUDA 2,871,520

PANEL SUPPORT

Filed Feb. 1, 1955 2 Sheets-Sheet 2

Fig. 9

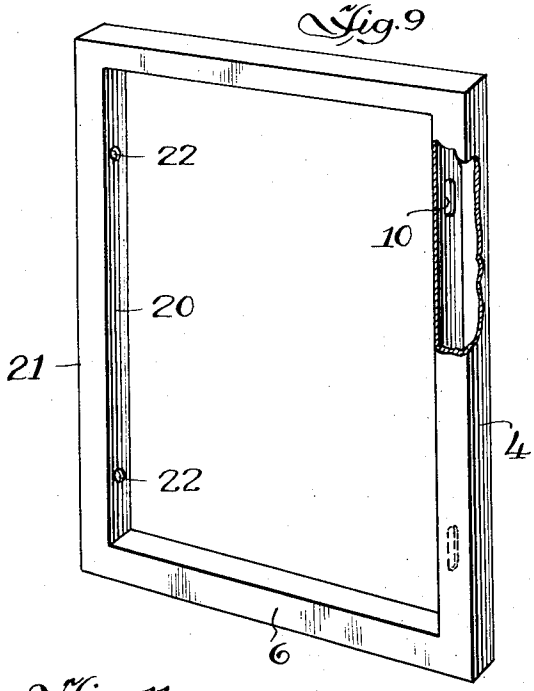


Fig. 10

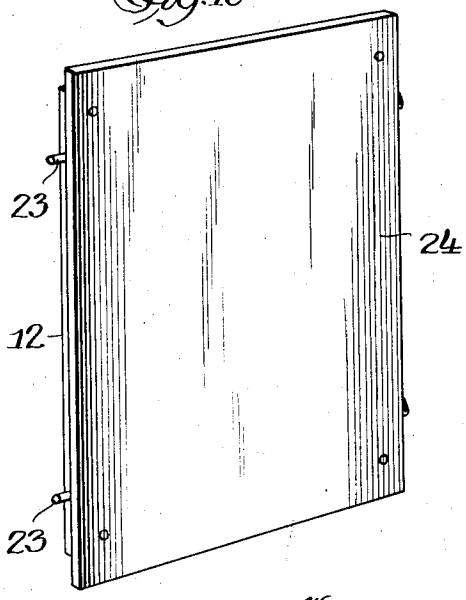


Fig. 11

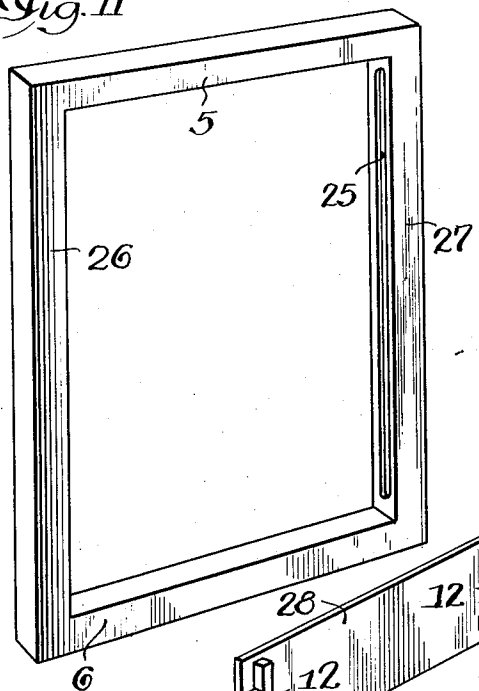
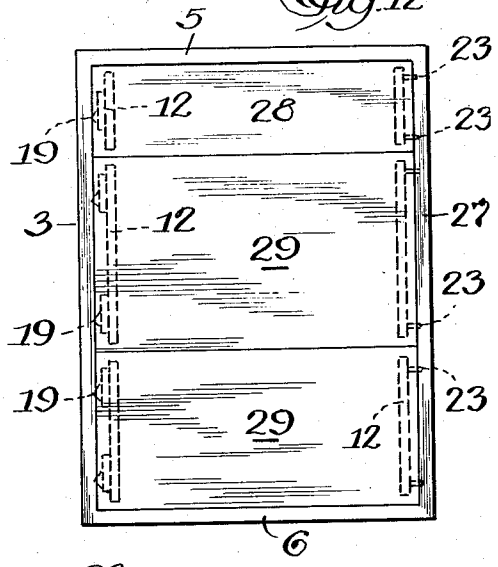


Fig. 12



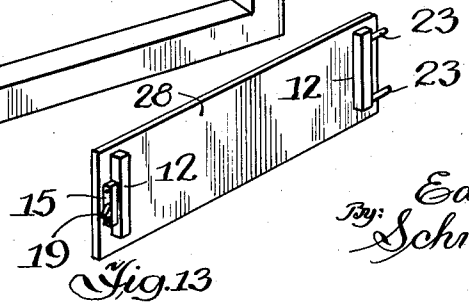


Fig. 13

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2,871,520

PANEL SUPPORT

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Application February 1, 1955, Serial No. 485,403

6 Claims. (Cl. 20—.5)

This invention relates to a panel support and is particularly concerned with means for easily inserting a panel into a frame and securely holding the panel in place, and which may be readily released to permit removal of the panel.

In accordance with the present invention I provide a frame of any desired shape with a plurality of slots on at least one inner wall surface, and a plurality of openings, such as slots or apertures, on the opposed inner wall surface, and provide a plurality of panels adapted to fit within the frame with spring latches engageable with said slots on at least one side of each panel to hold the panel in the frame. The opposite side of the panel is provided either with spring latches or with laterally projecting pins, depending on whether slots or apertures are provided on the inner wall surface of the frame.

The frame which receives the panel may have continuous slots on one or both inner wall surfaces. If continuous slots are provided on both inner wall surfaces the bottom of the panel must be supported by the bottom of the frame or the top of another panel mounted in the frame.

The frame may be a four-sided structure, either square or rectangular, or it may be round or of other shape. The frame may also comprise a pair of spaced uprights, preferably joined by one transverse member, although they may be held in spaced relationship in any suitable manner as, for instance, by being nailed or screwed to a wall.

The panel is shaped to fit within the frame, and may be of wood, metal, glass, cardboard, or other material. Although the panels generally used are provided with advertising matter they may contain directory information, may be used as a bulletin board, or may be perforated for use as pin-up boards. The panel may comprise any suitable backing provided with a display surface on one or both spaces.

The structure by which the above mentioned and other advantages of the invention are attained will be described in the following specification, taken in conjunction with the accompanying drawings showing a few preferred embodiments of the invention, in which:

Figure 1 is a front elevation of a frame constructed in accordance with the invention;

Fig. 2 is a front elevation of a panel adapted to fit within the frame;

Fig. 3 is a side elevation of the panel shown in Fig. 2;

Fig. 4 is a rear perspective view of the panel shown in Fig. 2;

Fig. 5 is a cross sectional view showing the panel partially inserted into the frame;

Fig. 6 is a fragmentary front view, partly in elevation and partly in section, showing the interengagement of the panel with the frame;

Fig. 7 is a sectional view along the line 7—7 of Fig. 6, showing the inner wall surface of the frame in elevation;

Fig. 8 is a sectional view along the line 8—8 of Fig. 6, showing the side of the panel in elevation;

Fig. 9 is a perspective view, partially broken away, of

a frame provided with slots on one inner wall surface and apertures on the opposed inner wall surface;

Fig. 10 is a perspective view of a panel adapted to fit within the frame of Fig. 9;

Fig. 11 is a perspective view of a frame having a continuous slot along the inner wall surface at one side;

Fig. 12 is a front elevation showing a plurality of panels fitted within the frame of Fig. 11; and

Fig. 13 is a rear perspective view of one of the panels shown in Fig. 12.

In the drawings, the reference numeral 2 indicates a rectangular frame comprising two side members 3 and 4, a top member 5, and a bottom member 6. These frame members are each tubular in cross section, as shown in Fig. 5. Although the frame members are shown square in cross section, it will be obvious that the specific shape is not critical. The members are preferably tubular, but may be solid, if desired. In frames having solid members the inner wall surfaces would be provided with notches or recesses large enough to accommodate the portion of the spring that must enter the frame member to hold the panel against accidental displacement. The outer edges of such notches or recesses might be protected by metal plates if the material of the frame is wood or other comparatively soft material that might get chewed up by the sharp edge of the spring if no protection were provided.

The inner wall 7 of side frame member 3 and the opposed inner wall 8 of side frame member 4 are each provided with a plurality of slots 9 and 10, respectively. Although slots 9 and 10 do not have to be aligned transversely, it is preferred to align them and to space them equally from the top and bottom of the frame, so that the panel may be secured in the frame in several different positions. For example, if the matter to be displayed is adhesively secured to the panel, it would make no difference if it were adhered upside down. The panel could then be inserted upside down in the frame, and the displayed matter would appear in proper position.

The panel comprises a flat sheet 11 of any suitable material to the rear surface of which longitudinal strips 12 are secured adjacent opposite lateral edges. The strips 12 are shown as extending substantially the full length of the panel, but if the panel is rigid, short blocks could be used instead of strips 12. If desired, a second flat sheet (not shown) could be secured to the rear edges of strips 12 to provide a double-faced panel.

A channel member 13 is secured to the outer edge of each strip 12 by means of screws 14 or similar fastening members. Each channel member has its web 15 positioned adjacent the inner wall surface of a side frame member when the panel is assembled with the frame. Web 15 is provided with a slot 16 adapted to register with a slot 9 or 10. A flat spring 17 riveted to the inner surface of web 15, as indicated at 18, Fig. 6, has a portion 19 offset to project through slot 16 and act as a latch to hold the panel in frame 2. Web 15 is spaced from the edge of strip 12 to provide room for latch 19 to be depressed when the panel is inserted or removed from the frame.

The panel is inserted into frame 2 by entering latches 19 on either side of the panel into the slots 9 or 10. For the sake of simplifying the description it will be assumed that latches 19 have been entered into slots 9 in side member 3. The opposite side of the panel is then pressed rearwardly and latches 19 on the opposite side of the panel are pressed inwardly to clear the inner wall surface of the opposite side frame member 4. Then a slight additional pressure will force the second mentioned side of the panel rearwardly until latches 19 snap into the opposite slots 10. It should be noted that springs 17 extend longitudinally of slots 9 and 10 with

their thin edges parallel to the faces of the panel so that when latches 19 are positioned in such slots any pressure on the front or rear of the panel acts against the thin edge of the spring and cannot force the latches out of position. In order to remove the panel from the frame, a knife or other thin blade or tool is inserted above the latch and moved downwardly to force latch 19 out of slot 9 or 10. The panel may then be removed merely by pushing it out of the frame while the latch is held against engagement with the slot.

The embodiment of the invention shown in Figs. 9 and 10 is essentially the same as that previously described except that on inner wall surface 20 of side frame member 21 apertures 22 are substituted for slots 9, and laterally projecting pins or studs 23 are substituted for latches 19 on the corresponding side of panel 24. With this structure pins 23 are inserted into apertures 22 and the opposite side of the panel is pushed back into the frame in the same manner as in the first embodiment.

In Figs. 11, 12 and 13 I have shown a frame provided with a continuous slot 25 on the inner wall surface of each side frame member 26 and 27. A plurality of short panels 28 and 29 are substituted for the single panel in the other embodiments. Panel 28 is so short that a single latch 19 is sufficient on one side. A pair of pins 23 is provided on the opposite edge of panel 28 to prevent any tendency of the panel to rotate. Panels 29 each have two latches 19 and two pins 23. In Fig. 12 one panel 29 is supported at its bottom by bottom frame 6 and each other panel is supported by the top of the panel below it. The continuous slots 25 permit the panels 28 or 29 to be inserted at any height.

Although I have described several preferred embodiments of my invention in considerable detail, it will be understood that the description thereof is intended to be illustrative, rather than restrictive, as many details of the structure may be modified or changed without departing from the spirit or scope of the invention. For example, the top or bottom frame member may be omitted to provide a frame having three frame members. It is also possible to make the frame of some other shape than the rectangular shape illustrated. Another embodiment may have a board, such as a bulletin board or a directory provided with grooves for the insertion of removable letters, permanently secured to the frame, and utilize the panel as a transparent protective member which may be removed whenever it is desired to change the information on the board. Accordingly, I do not desire to be restricted to the exact construction described.

I claim:

1. A panel support comprising a pair of spaced members having openings in their opposed inner wall surfaces and a panel adapted to fit between said spaced members with limited clearance to prevent any substantial lateral movement of said panel in the plane of said support, said panel having projecting members extending from opposite edges into said openings to hold said panel against movement at an angle to the plane in which said panel is normally held between said spaced members, the projecting members at one edge of said panel comprising flat spring latches with their thin edges parallel to the front surface of the panel.

2. A panel support comprising a pair of spaced tubular members having slots in their opposed inner wall surfaces and a panel adapted to fit between said spaced members with limited clearance to prevent any substantial lateral movement of said panel in the plane of said support, said panel having flat spring latches projecting from its opposite edges, said latches being aligned transversely with said slots and having their thin edges disposed parallel to the front surface of the panel, a portion of each of said spring latches extending into one of said slots to hold said panel against movement at an angle to the plane in which said panel is normally held between said spaced tubular members.

3. A panel support comprising a tubular frame, the inner wall surface of said tubular frame being provided with a plurality of slots, and a panel shaped to fit within said frame between said inner wall surfaces, a plurality of flat springs secured to the outer edges of said panel with their thin edges parallel to the front of said panel, each of said springs having an offset forming a latch engageable with one of said slots to retain said panel within said frame against pressure exerted against the front or back surface of said panel.

4. A panel support comprising a frame provided with openings on its opposed inner wall surfaces, and a panel shaped to fit within said frame between said inner wall surfaces, said panel comprising a flat sheet and a plurality of longitudinally extending members secured to the rear surface of said sheet, channel members secured to the edges of said longitudinally extending members adapted to face said inner wall surfaces of said frame member when said panel is positioned within said frame, a flat spring secured to each of said channel members in spaced relationship to said longitudinally extending members with its thin edges parallel to the front of said panel, each of said springs having an offset forming a latch engageable with one of the openings on the inner wall surfaces of said frame member to retain said panel within said frame against pressure exerted against the front or back surface of said panel.

5. A panel support comprising a frame provided with openings on its opposed inner wall surfaces, and a panel shaped to fit within said frame between said inner wall surfaces, said panel comprising a flat sheet and a plurality of longitudinally extending members secured to the rear surface of said sheet, channel members secured to the edges of said longitudinally extending members adapted to face said inner wall surfaces of said frame member when said panel is positioned within said frame, a flat spring secured to each of said channel members in spaced relationship to said longitudinally extending members with its thin edges parallel to the front of said panel, each of said springs having an offset forming a latch engageable with one of the openings on the inner wall surfaces of said frame member to retain said panel within said frame against pressure exerted against the front or back surface of said panel, each of said channel members being spaced from the inner wall surfaces of said frame member to permit access to said latches by insertion of a thin tool between said panel and said frame.

6. A panel support comprising a tubular frame provided with a plurality of apertures in one inner wall surface and a plurality of slots in the opposed inner wall surface, a panel fitting within said frame, a plurality of pins projecting laterally from one edge of said panel and aligned transversely with said apertures, and a plurality of flat spring latches projecting outwardly from the opposite edge of said panel and aligned transversely with said slots, said flat spring latches each having its thin edge parallel to the front of said panel, said pins being adapted to enter the aligned apertures and cooperate with said spring latches, which are adapted to enter said slots, to retain said panel within said frame against pressure exerted against the front or back surface of said panel.

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