Jan. 10, 1950 D. D. BLACKMAN 2,494,161

WINDOW CONSTRUCTION

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3 Sheets-Sheet 1

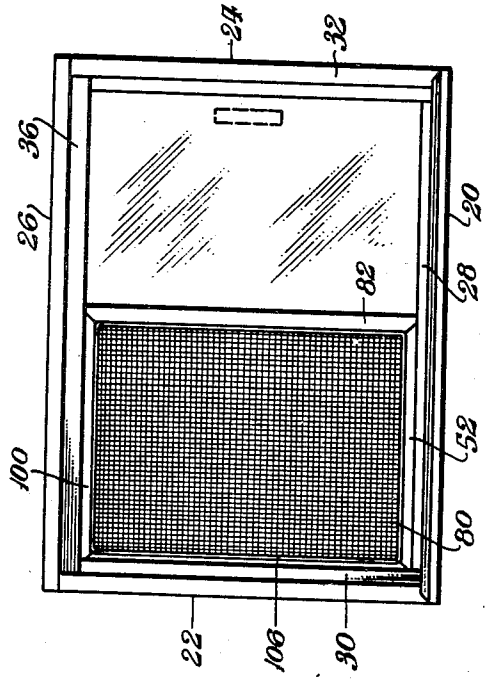

Fig. 7

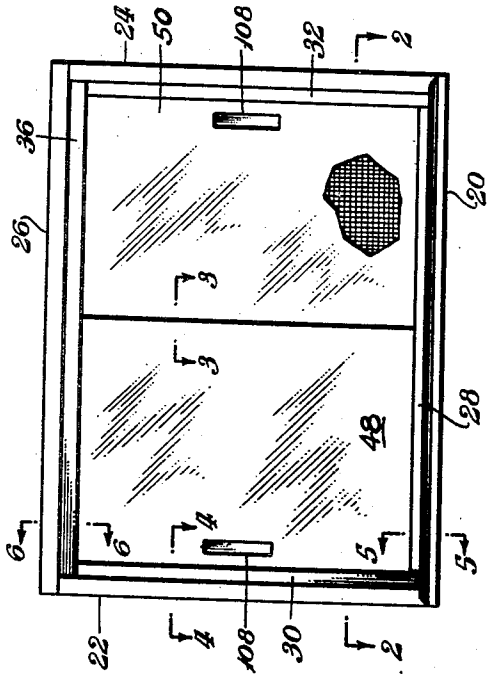

Fig. 1

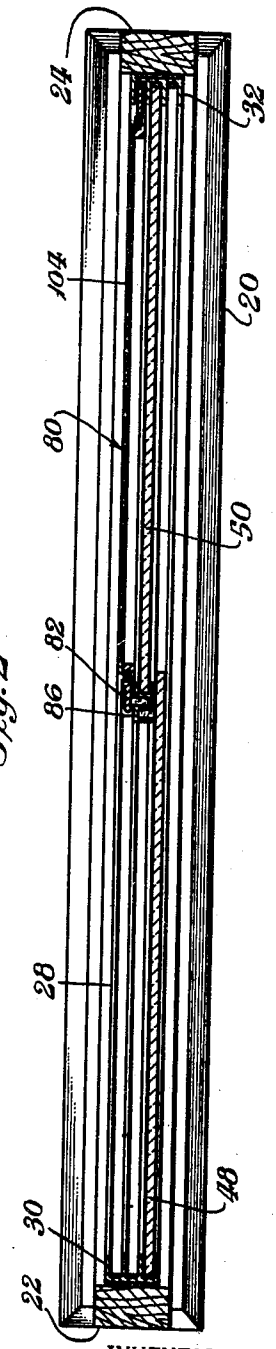

Fig. 2

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Fig. 3

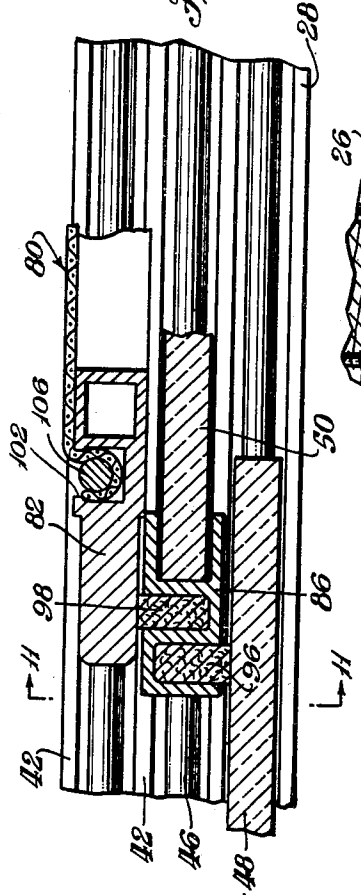


Fig. 6

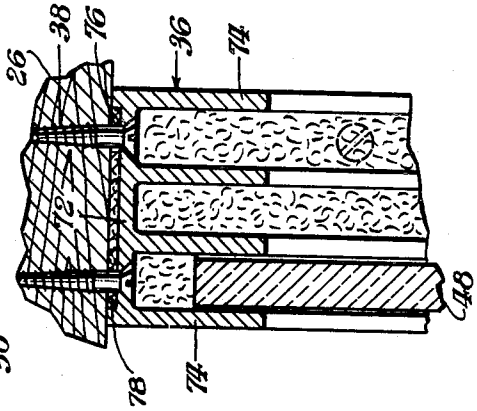


Fig. 5

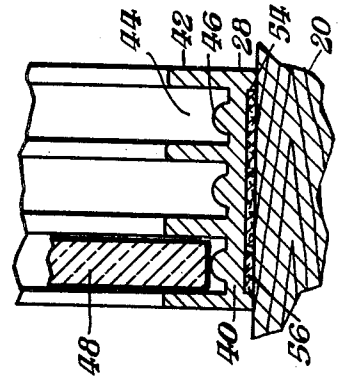
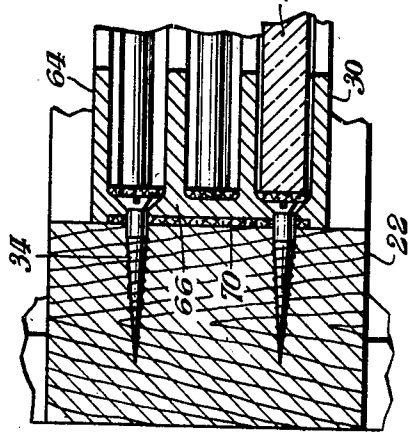


Fig. 4



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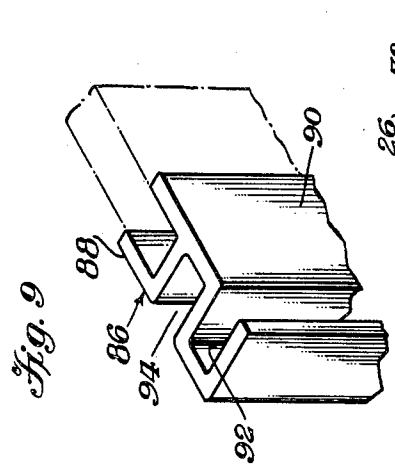

Fig. 9

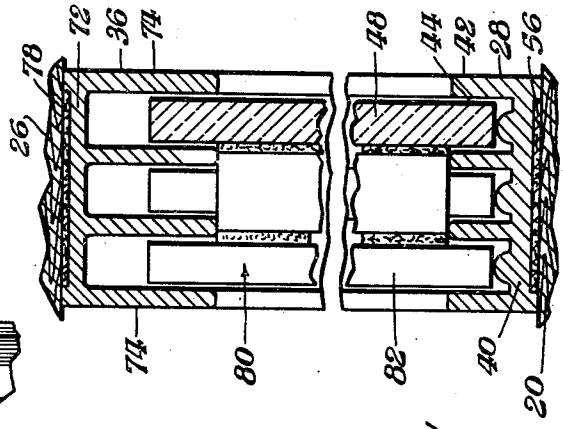

Fig. 11

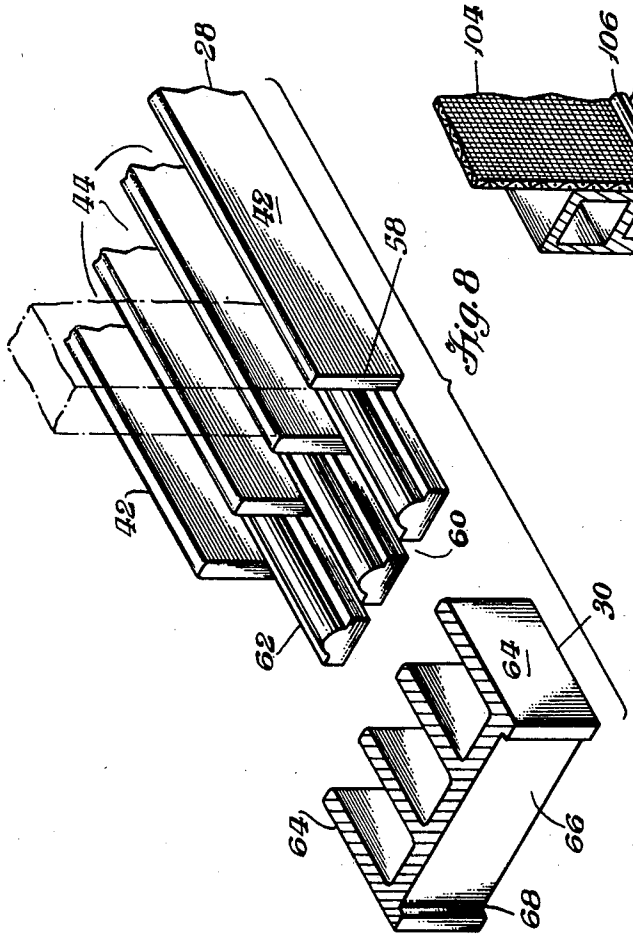

Fig. 8

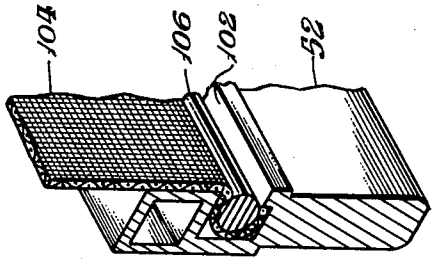

Fig. 10

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WINDOW CONSTRUCTION

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4 Claims. (Cl. 160—43)

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This invention relates to window construction and to combination windows and screens.

An object of the invention is to provide a window construction including a plurality of glass window panes and novel means for mounting them movably in a window frame, the window panes being readily removable therefrom without employment of any tools therefor.

A further object of the invention is to provide a window construction including a plurality of improved rails mountable in a window frame and adapted to form supports and guides for the reception of window panes, said panes being slidable in said guides to permit opening and closing the window, the rails having recesses formed therein to receive draft sealing material.

Another object of the invention is to provide a novel form of window construction embodying four cooperating rails securable in a window frame to the bottom, sides and top thereof, and adapted to slidably receive a pair of window panes which may be moved relative to each other to close said window opening and to open the same, and at the same time including means for supporting therein a window screen, the latter being adapted to cover any desired portion of said window opening, and having means to eliminate drafts between said window panes.

Still another object of the invention is to provide a novel form of window construction which is simple in design, which may be manufactured at low cost, and which is highly effective in operation.

Other objects and advantages of the invention will become apparent from the following description of a preferred embodiment thereof as illustrated in the accompanying drawing, and in which,

Figure 1 is a front elevational view of a window embodying my invention, showing the same in closed position;

Figure 2 is a sectional view taken on line 2—2 of Figure 1;

Figure 3 is a fragmentary sectional view taken on line 3—3 of Figure 1;

Figure 4 is a fragmentary sectional view taken on line 4—4 of Figure 1;

Figure 5 is a sectional view taken substantially along the line 5—5 of Figure 1;

Figure 6 is a sectional view taken substantially along the line 6—6 of Figure 1;

Figure 7 is a rear elevational view of the window shown in Figure 1;

Figure 8 is an enlarged exploded perspective

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detail view of one of the lower corners of the window construction;

Figure 9 is an enlarged fragmentary perspective detail of one draft sealing molding mounted on one of the panes;

Figure 10 is a fragmentary sectional detail in perspective showing the method of mounting the screen in the screen frame; and

Figure 11 is a sectional view taken on line 11—11 of Figure 3.

In the construction of windows, it is desirable to allow them to be opened and closed easily, and to be covered with screens when needed. The present invention discloses a novel form of window in which there is the additional advantage that the window panes may be easily removed for cleaning if desired. In order to understand clearly the nature of the invention and the best means for carrying it out, reference may now be had to the drawings, in which like numerals denote similar parts throughout the several views.

As shown, there is a window frame including a window sill 20, made of wood or other suitable material, left and right sides 22 and 24, and a top member 26. In this standard type window frame I mount a bottom rail 28, which rests upon the window sill 20, upright left and right side rails 30 and 32, which are secured to the left and right sides of the window frames by means of screws 34 (see Fig. 4), and a top rail 36 which is secured to the top member 26 of the window frame by means of screws 38 (see Fig. 6). These rails 28, 30, 32 and 36 are made of any suitable material such as aluminum or other metal.

As seen best in Figures 1, 3, 5 and 8, the bottom rail 28 has a base 40 surmounted by four upstanding spaced walls 42 integral therewith and extending longitudinally along the base, so as to form between adjacent walls 42 three elongated recesses or channels 44, the floors of the channels including central integral longitudinal ridges or ribs 46. The bottom rail channels are thus adapted to receive slidably the lower edge portions of the glass inner and outer window panes 48 and 50, and the lower molding 52 of the screen frame, these all resting upon the upraised ribs 46 and thus minimizing friction and enhancing the draft sealing effect.

As seen in Figure 5, the bottom rail 28 also has a recess 54 in its lower surface to receive suitable draft sealing material such as felt 56. As seen best in Figure 8, the walls 42 of the bottom rail do not extend the entire length of the bottom rail, being cut away at each end 58, to allow the base

40 to project beyond the ends 44. Slots 60 are cut into the projecting portions of the base 40, to form base end fingers 62 which are adapted to extend into the channels formed between the adjacent spaced walls 64 of the left and right side rails 30 and 32. In this manner, the bottom rail is held by the left and right side rails securely in position upon the window sill, and need not be otherwise secured thereto.

The left and right side rails 30 and 32, like the bottom rail, have a base 66 (see Fig. 4) integral with the spaced four walls 64 thereof, the base having a recess 68 formed therein as seen best in Figure 8, to receive a felt window sealing strip 70. The top rail 36 of the window construction, as shown best in Figures 6 and 11, also includes a base 72 with integral depending spaced walls 74 depending therefrom, and a recess 76 formed in the upper surface of the base 72, to receive a draft sealing felt strip 78 as shown in Figure 11. As shown in Figures 2, 3, 6 and 11, the glass panes 48 and 50 and the screen 80 are so dimensioned that their upper edges do not reach upwards sufficiently to touch the base 72 of the top rail, being normally spaced therefrom.

This permits the panes and screen to be lifted for easy insertion and removal, these members being lifted sufficiently to clear the upper edges of the walls 42 of the lower rail, and then dropped into the spaces between the walls 42 or removed therefrom. As seen in Figure 3, the side edges of the window panes and the side moldings 82 of the window screen are adapted to slide in between the side walls 64 of the left and right side rails 30 and 32.

Referring now to Figures 3 and 9, it will be seen that a window pane molding 86 formed of the same material as the other window rails, such as aluminum or other metal, has a rightwardly open channel formed between its walls 88 and 90 to receive and grip firmly the left edge of the outer window pane 50, being thus movable therewith. The molding 86 also has two oppositely facing vertically elongated recesses 92 and 94, to receive draft sealing felt strips 96 and 98 which have their outer edges bearing respectively against the outer surface of the inner window pane 48 and against the inner surface of either of the edge moldings 82 of the screen when either of the moldings overlies the felt 98.

As seen best in Figures 3, 7 and 10, the screen includes a bottom molding 52, left and right side moldings 82 and a top molding 100, which are joined together at their ends to form the window screen frame. These moldings have elongated recesses 102 formed in their outer surfaces to receive edge portions of the screen mesh or fabric 104, being held therein by means of a wire bead 106 in the manner shown.

As shown in Figure 1 the window panes may have hand hold recesses 108 formed therein to receive the fingers when they are to be moved. It is apparent that the window panes may be moved into the window closing positions of Figure 1, or may be moved substantially into registry, so as to open the window by about half. Th open portion of the window may be covered by moving the screen into registry therewith, to block entry of insects therethrough.

From the above description, it will be seen that such a window is quite practical and easily installed and operated. Although I have described my invention in specific terms, it will be understood that various changes may be made in size, shape, materials and arrangement without departing from the spirit and scope of the invention, as claimed.

Having described my invention, what I claim and desire to secure by U. S. Letters Patent is:

1. A window construction for installation in a window frame, comprising a bottom rail adapted to be supported upon a window sill, and having a plurality of upstanding spaced walls defining upwardly open guide recesses, the floor of each of said open guide recesses being provided with a raised ridge adapted for supporting a window pane, each of said ridges being of such width as to provide a space between it and each of the said upstanding spaced walls on opposite sides thereof, a top rail adapted to be secured to the top member of said window frame and including depending spaced walls defining downwardly open guide recesses, side rails connecting said bottom and top rails, a pair of inner and outer window panes having their lower edges respectively receivable in said guide recesses in said lower rail so as to be supported upon said raised ridges, and having their upper edges respectively receivable in the guide recesses in said upper rail, whereby said panes may be slidably moved in individual guide recesses to cooperatively cover said window opening and may be moved into at least partial registry with each other to at least partially uncover said window opening, said bottom and top rails being formed of substantially non-yielding material and being provided with recessed areas in their rear surfaces in which draft sealing material is disposed.

2. A window construction for installation in a window frame, comprising a bottom rail adapted to be supported upon a window sill, and having a plurality of upstanding spaced walls defining upwardly open guide recesses, the floor of each of said open guide recesses being provided with raised ridges adapted for supporting window panes, a top rail adapted to be secured to the top member of said window frame and including depending spaced walls defining downwardly open guide recesses, side rails connecting said bottom and top rails, a pair of inner and outer window panes having their lower edges respectively receivable in said guide recesses in said lower rail and being supportable upon said guide ridges, and having their upper edges respectively receivable in the guide recesses in said upper rail, whereby said panes may be slidably moved in individual guide recesses to cooperatively cover said window opening and may be moved into at least partial registry with each other to at least partially uncover said window opening, a draft sealing molding carried on one vertical edge of one of said window panes and movable therewith, said draft sealing molding having at least two recesses formed in said molding to receive draft sealing material, one of said recesses with said draft sealing material sealing the space between said window panes against air leakage, a window screen slidable in one of said guide recesses in said top and bottom rails, and in which the other of said recesses in said draft sealing molding with its draft sealing material opens upon said window screen with its draft sealing material bearing against the screen to block passage of insects.

3. A window construction for installation in a window frame, comprising a bottom frame adapted to be supported upon a window sill, and having a plurality of upstanding spaced walls defining upwardly open guide recesses, the floor of each of said open guide recesses being pro-

vided with raised ridges adapted for supporting window panes, each of said ridges being of such width as to provide a space between it and each of said upstanding spaced walls on opposite sides thereof, a top rail adapted to be secured to the top member of said window frame and including depending spaced walls defining downwardly open guide recesses, side rails connecting said top and bottom rails, a pair of inner and outer window panes having their lower edges respectively receivable in said guide recesses in said lower rail, and being supportable upon said raised ridges, and having their upper edges receivable in the guide recesses in said upper rail, whereby said panes may be slidably moved in individual guide recesses to cooperatively cover said window opening and may be moved into at least partial registry with each other to at least partially uncover said window opening, said bottom and top rails being formed of a single piece of substantially non-yielding material.

4. In a window construction for a building for installation in a window frame wherein there is provided, bottom, top and side rails of metallic material, and in which each of said rails is provided with a plurality of integral upstanding walls spaced from each other to define open guide recesses, and a substantially flat bottom wall, and

wherein window panes are operably received in said guide recesses, the improvement which comprises extending said upstanding walls of the two outermost walls to project beyond the said bottom wall to define a recess therebetween, and draft sealing material in said recess.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
251,426	Forbes	Dec. 27, 1881
920,158	Kurz	May 4, 1909
1,326,676	Lunken	Dec. 30, 1919
1,637,367	Zimmers et al.	Aug. 2, 1927
1,821,674	Shapiro	Sept. 1, 1931
2,114,896	Axe	Apr. 19, 1938
2,174,180	Rand	Sept. 26, 1939
2,379,111	Spickelmier	June 26, 1945
2,463,238	Bissell	Mar. 1, 1949

FOREIGN PATENTS

Number	Country	Date
486,935	Germany	1927