Dec. 20, 1955 O. STOTZ 2,727,285

WINDOW STRUCTURE

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Fig. 1.

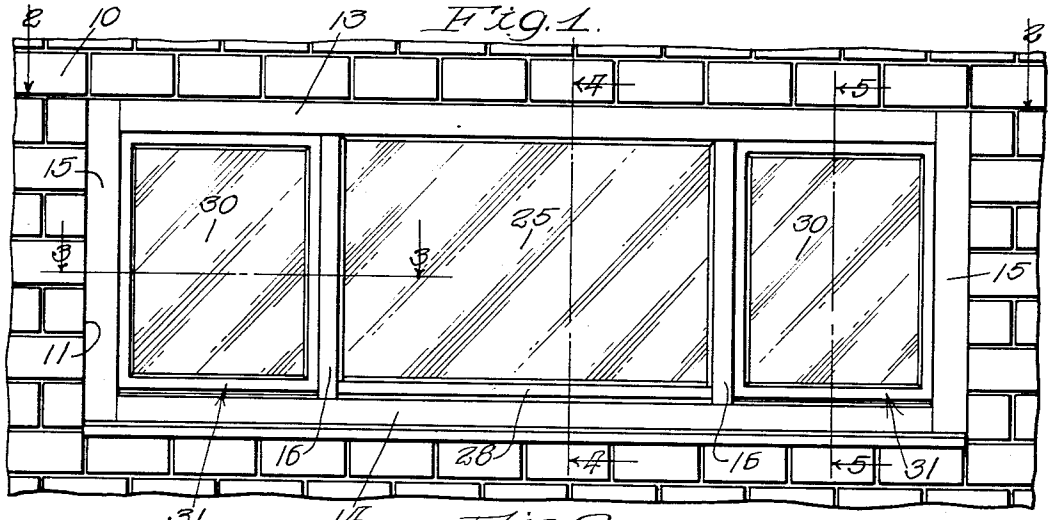


Fig. 2.

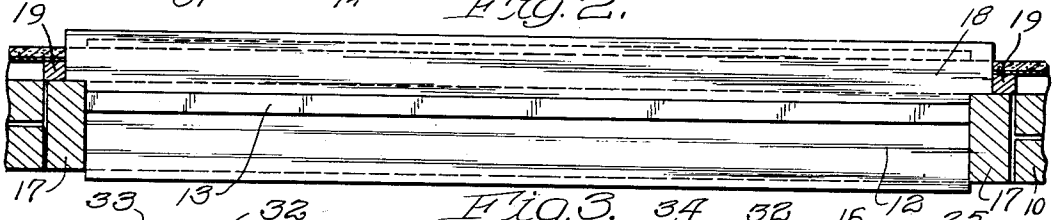


Fig. 3.

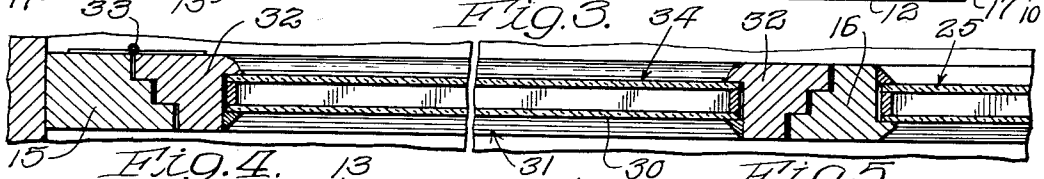


Fig. 4.

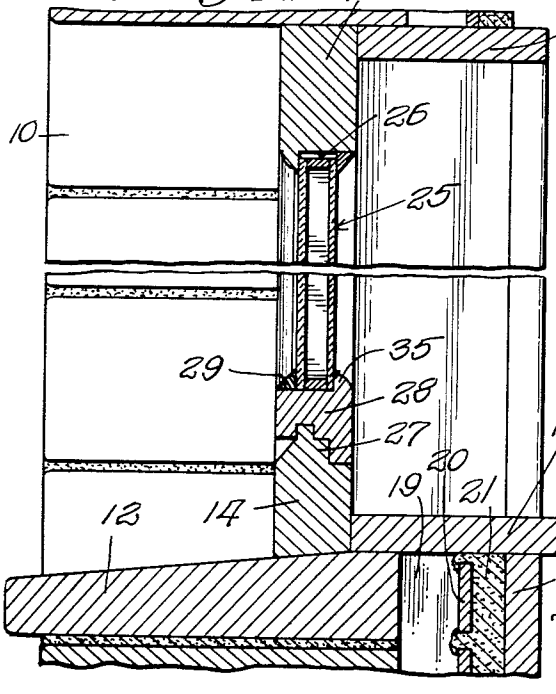
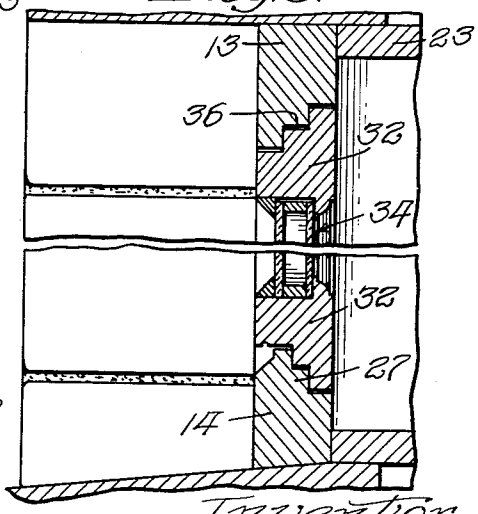


Fig. 5.



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WINDOW STRUCTURE

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1 Claim. (Cl. 20—40)

This invention relates to a window construction for habitable buildings and particularly to a window frame construction which eliminates the necessity of an outer frame.

The desirability of window ventilation over the height of window openings has been recognized and provided by the use of casement hung windows. These windows have been combined with relatively large panes of fixed glass commonly known as picture windows.

A number of disadvantages in window construction of this type have been known. Casement windows have generally been constructed of metal framing which transmits temperature changes from outside to inside very rapidly. The use of wood which is a better insulation, is desirable but has heretofore been expensive due to the necessity of framing about the rough window opening and the inclusion of relatively thick sashes to support the relatively heavy weight of glass panes. The expense of construction has therefore been greater than desirable for casement windows of wooden construction.

In buildings having a number of floors above the ground level, there has been the problem of inserting the glass in the frames since this procedure usually follows the major portion of the construction and therefore most scaffolds have been removed by the time the glaziers perform their part in the building construction.

The present invention is intended to provide a wooden frame structure for use in buildings which accomplishes the result of providing an economical framing for windows both of the picture window type and for casement hanging. In addition, fixed pane windows may be inserted into the frame from inside the building, thus eliminating the need of scaffolding on the outside at the upper floor levels.

A particular embodiment of the present invention is illustrated in the accompanying drawings, in which:

Figure 1 is a broken side elevational view of a portion of a building wall having a window frame of the present construction inserted in the window opening provided in the wall. The frame as illustrated includes a central fixed pane and two side casement hung sashes and is viewed from the exterior;

Figure 2 is a broken horizontal sectional view looking down on the window frame and taken substantially along line 2—2 in Figure 1;

Figure 3 is a broken horizontal sectional view through one of the casement windows and adjacent the frame members taken substantially along line 3—3 in Figure 1;

Figure 4 is a vertical broken sectional view through the central section of the window frame and adjacent wall structure taken substantially along line 4—4 in Figure 1; and

Figure 5 is a broken vertical sectional view through one of the casement hung windows and adjacent wall portions taken substantially along line 5—5 in Figure 1.

The commercial manufacture of wooden frame members is conducted on a volume production basis wherein

the frame members are put through cutting machines at high rates of speed to form the faces of the frame members in a prescribed manner. These frame members are then mortised together to complete individual window frames. A sufficient number of the so formed frames are brought to a building site and inserted in the building walls at the proper window openings during the raising of the building walls. Following the finishing of the interior of the building as well as the exterior, glaziers arrive on the job to insert the glass panes. Usual practice at the present time includes the placing of sash frames including the glass light. Usual construction ordinarily includes a frame in the rough opening of the building and an inner frame mounted within the first frame. For windows that open there is an additional sash mounted within the inner frame.

In the present invention a building wall **10** may be provided with a rough opening **11** for inclusion of a window. The rough opening **11** is usually provided with a sill **12**, in the present instant shown as a stone since the building illustrated is one of masonry construction. The frame members referred to herein include a top member **13**, a bottom member **14**, a pair of side members **15** and in the particular instant, a pair of dividing rails **16**. The top, bottom and side frame members are joined together so that they rest directly against the masonry work of the building wall. In Figure 2, the top member **13** is shown as ending directly against bricks **17** at either side of the window openings. The sill **12** may be seen on the outside of the window and the inner sill **18** correspondingly on the interior of the building.

The particular placement of the frame of this invention in the rough window opening is generally adjacent the inside of the masonry wall. In Figure 4, the construction of the interior of the building may be noted. Furring strips **19** are fastened to the masonry wall for supporting lath **20** upon which plaster **21** is applied. A trim strip **22** is placed directly under the inner sill **18** over the plaster **21** to complete the inside trim of the window opening. It is contemplated that a wooden trim strip **23** may be placed around the window opening on the inside merely for providing a neat and finished appearance.

The construction described above includes only an outer frame positioned directly in the rough opening in the building wall. The frame members previously described are formed to receive directly a window glass pane in the case of fixed windows such as are often found in picture windows. Such a pane **25** is shown in Figures 1 and 4 and is a double pane of known manufacture including a sealed air space between the two panes.

In order to receive the glass pane **25**, the upper frame member **13** is formed with a recess **26** against which the glass **25** may be inserted from the inside. The recess **26** is formed in a machine much like the rabbets **36** on the top rail **13** over the side casement windows **30**. The center rabbet is removed and the outer portion of the frame member face trimmed to the shape shown in Figure 4. This is done in the center section of the frame without disturbing the multiple rabbets **36** of the frame member over the casement windows.

The lower rail **14** is formed with multiple rabbets **27** in the same manner as will be found on the bottom rail for the casement hung side windows **30**. This multiple rabbeting may be seen more clearly in Figures 4 and 5. The dividing rails **16** are formed on the side facing the fixed pane **25** in a manner similar to the top rail **13** and may more clearly be seen in Figure 3. Thus, as far as the top frame member and side dividing rails are concerned, the pane **25** may be inserted from the interior of the building.

Multiple panes of glass often come in stock sizes where-

as variations in building construction may result in a window opening at variance with such stock sizes. In order to accommodate only stock sized panes, a bottom frame member **28** is placed under the center panes **25** and on top of the bottom frame member **14** to extend between the dividing rails **16**. The cross sectional shape of this bottom rail may be seen in Figure 4. The rail has rabbets closely fitting the rabbets of the bottom frame member **14** and has a groove for receiving the glass pane from the outside. A member **29** may be placed against the glass on the exterior to weather seal the fixed pane **25** in the frame. The vertical height of the bottom rail **28** may be varied as desired or necessary to make a standard sized pane fit in the window opening. The procedure to be followed in inserting the fixed pane **25** into the frame requires that the bottom rail **28** be formed of the correct vertical dimension and placed on the bottom frame member **14**. The pane of glass is then inserted into this bottom member over the raised ledge portion **35** against which the glass will repose. The top of the glass is held down by the window frame when the bottom edge is thus placed. The window may be eased into the side and top frame members by pushing the glass toward the frame. The sealing strip **29** may then be applied to the outside of the window as desired and may well be placed by a workman having access thereto from the casement openings.

To complete the window structure, casement panes **30** each mounted in a sash frame **31** are hingedly supported in the side panels of the frame. The sashes **31** are provided with side rails **32** having rabbets to fit into corresponding rabbets of the frame members and are hinged at **33** so that the casements may swing inwardly. The particular casements shown are provided with a double glaze **34** which is preferred for weather insulating purposes. A single pane may be substituted as is obvious.

By the use of the present construction, a single frame in the rough opening of a building is used to support glass panes directly which are intended to be fixed in naturally and also to support sashes which are intended to be opened. The size of the rough window opening is not materially reduced by having wooden frames and

sashes as is ordinarily the case. The construction is less expensive than those heretofore employed and has the additional advantage of presenting a frame capable of being glazed from the interior of the building in which it is used.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claim.

I claim:

Window construction for a habitable building having walls providing a rough opening to receive a window, comprising, a wood frame having a top, bottom and side members with an outer peripheral configuration and size to fit against the walls of the building within said rough opening, a pair of spaced dividing rails dividing said frame into a central panel and two similar side panels, said dividing rails and top frame member having inner faces having a recess facing inwardly of the frame to receive a glass pane directly from the interior of the building and without sash within the central panel, a bottom rail member positioned over the bottom frame member within the vertical central panel to adjust the size of the central panel to fit said glass pane, said rail member having an upper face formed with an outwardly facing recess to receive said glass pane, and casement hung sashes secured in said similar side panels to completely enclose the window opening.

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