

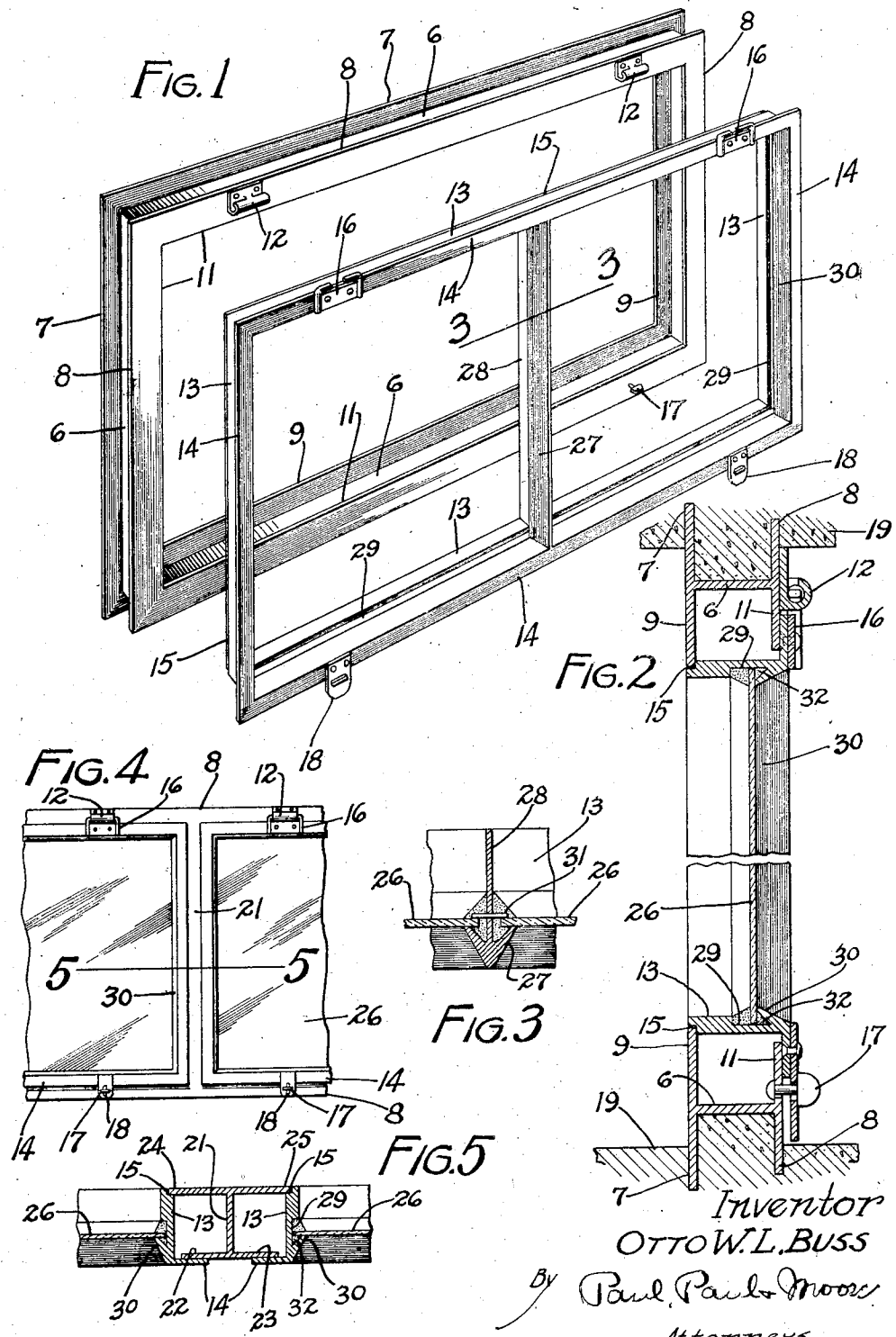
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WINDOW STRUCTURE

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UNITED STATES PATENT OFFICE.

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WINDOW STRUCTURE.

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This invention relates to window frames and sashes which may be economically produced in large quantities and which may be readily and inexpensively installed in buildings of different types. While various kinds of material may be used for this novel frame and novel sash, its structure is one which may be conveniently made of metal. The embodiment of the invention here shown is of the type which is commonly used as a so-called basement window wherein the sash is mounted upon hinges having a horizontal axis although it is to be understood that this window structure is equally well adapted for use with vertically pivoted hinges or for use wherein the sash is substantially permanently secured to its frame. This sash and frame construction is further one which may be used in duplicated units. For example, a plurality of these structures may be assembled in a series of adjacent connected units whether superposed or laterally placed. Furthermore, the construction of the frame by means of this novel supporting member is such that it may be readily employed to receive a plurality of sashes while the sash constructed of this novel member, in turn, is such that it may be employed to contain a plurality of glazings or panes.

The object therefore of this invention is to provide a new and improved window structure.

Other objects of the invention will more fully appear from the following description and the accompanying drawings and will be pointed out in the annexed claim.

In the drawings, there has been disclosed a structure designed to carry out the objects of the invention, but it is to be understood that the invention is not confined to the exact features shown as various changes may be made within the scope of the claim which follows.

In the drawings:

Figure 1 is a perspective view of one form of the novel frame and the novel sash, the pane being omitted from the sash;

Figure 2 is a vertical section through an installed frame and sash, the sash being shown as glazed and in closed locked position;

Figure 3 is a cross-section on the line 3—3 of Figure 1 with the portions of panes and glaze material added;

Figure 4 is a partial view in elevation of a modified form of frame adapted for use with a plurality of sashes; and

Figure 5 is a cross-section on the line 5—5 of Figure 4.

In this selected embodiment of the invention, the frame is formed of a material, preferably of metal, made into a form which is substantially H-shaped in cross-section, thus providing a body portion or base 6 and outwardly projecting flanges or edge portions 7 and 8. These edge portions 7 and 8 outwardly extend around the periphery of the frame. The inner portion of the frame is also provided with the inner edge portions 9 and 11 which inwardly project around the frame from the base 6. In the form shown in Figure 1, a sash is adapted to be seated within this frame, the sash being adapted to be received at the side of the frame to which the fixed members 12 of the hinges are secured. The inner edge portion 11 of the frame on the sash-receiving side thereof is continuously of less width than its adjacent oppositely spaced edge portion 9.

The sash which may conveniently be used with this novel frame is likewise preferably of metal. The sash here shown comprises an enclosing base 13 dimensioned to be received within the frame with which it is co-operatively employed. This base is provided with a preferably integral flange 14 which continuously and peripherally projects outwardly from the base on the side away from the frame. The major purpose of this flange is to overlap the less wide inner edge portion 11 on the sash-receiving side of the frame as shown in Figure 2. The other side of this sash base 13 is provided with a peripherally cut-away portion or recess 15 to receive the inner marginal part of the edge portion 9 of the frame. This construction affords a weatherproof sealing of the sash and frame at this side which is usually the out-door side of the frame because windows of this type are usually inwardly opened. The sash base 13 is provided with an inwardly presented recess 29 to receive the marginal portions of the pane. This recess 29 is preferably wider than the thickness of the pane, which is to be inserted as is shown in Figure 2 and the resultant space is adapted to be filled with glazing material such, for example, as

the usual putty. The pane is preferably positioned against one wall of the recess and the base 13 adjacent one side of this recess 29 may be advantageously provided with a marginal built-up portion or shoulder 30 so that the shoulder presents a backing for the marginal portion of the pane. In this novel sash structure, this wall of the sash-recess 29 is preferably undercut beneath the shoulder 30 to form the additional recess portion 32. This additional portion 32 provides space for the reception of putty to adhere to the other side of the pane-margin as is shown in Figure 2. This putty material is thus held in an enclosed space and more effectively resists wear and impairment in use. Another advantage of this undercut recess is that in the glazing operation, the glass pane may be inserted diagonally. That is, one edge of the pane may be placed within the undercut recess and then the whole pane pushed into position so that a slightly larger pane may be used with the result that, with such full-size pane and putty on both sides, the liability of the pane becoming loose and dropping out is practically rendered impossible. It may also be noted that this construction and the employment of putty on both sides renders unnecessary the use of the common metallic clip. This advantage will be obvious to those skilled in this art as substantially fifteen per cent of the glass panes are broken in the usual glazing with metal clips.

The pivotal member 16 of the hinger is shown as carried by the projecting flange 14 of the sash. As the sash and frame construction here shown is of the hinged type, locking means are preferably provided for holding the two parts in closed position. A simple means of locking consists of a pair of turn-buttons 17 pivotally mounted on the frame and adapted to cooperate with the slotted plates 18 secured to the sash. As is common in locks of this type, the slot is made elongated so that the similarly elongated button 17 may be turned so as to be received within the plate slot and thereafter rotated through an arc of ninety degrees to straddle the plate slot and thus to hold the sash in the locked position shown in Figure 4. It may be noted that the particular form of hinge shown in the accompanying drawings is novel and forms the subject-matter of another application filed by the inventor hereof.

An added advantage inhering in this double-flanged frame construction is that the outwardly projecting edge portions 7 and 8 are convenient for the present common form of masonry construction. As is suggested in Figure 2, the concrete or similar material 19 may be positioned around the portions 7 and 8 and may also enter within the channel formed between the

spaced flanges so that a rigid and accurately fixed installation is assured. In the form of frame construction particularly shown in Figures 2, 4 and 5, not only is the inner edge portion 11 of the frame on the sash-receiving side of less width than its opposite portion 9, but the outwardly projecting edge portion 8 on the sash-receiving side is likewise formed continuously of less width than its adjacent portion 7. An advantage of such construction is that when one of the vertical edges of this frame is placed in exposed position, the outside edge portions 7 and 8 may be employed similarly to the inner edge portions 9 and 11. In other words, the edge portions 7 and 8 function to receive the side of another sash as for example, when the window structure is employed in a lateral series of windows.

In figures 4 and 5, there is shown one of these novel frames having an intermediate frame member 21 extending across the frame. This intermediate frame member is substantially H-shaped in cross-section and has both of its inner edge portions 22 and 23 on the sash-receiving side thereof continuously of less width than their respectively adjacent oppositely spaced edge portions 24 and 25. This intermediate portion is preferably formed integrally with the frame member and is used when it is desired to employ a plurality of sashes in the same frame. The two edge portions 22 and 23 of this intermediate member, being of less width than their edge portions 24 and 25, permit the passage of two bases 13 of the sashes so that the sashes may assume the closed position shown in these Figures 4 and 5 wherein the overlapping flanges 14 of each of the sashes overlap the edge portions 22 and 23 and the marginal recess 15 of the bases receive the edges of the portions 24 and 25 whereby a doubly lapped weatherproof closing is effected.

In the form of sash shown in Figures 1 and 3, the sash is provided with a partition so that more than one glazing or pane 26 may be positioned in the sash. While only one such partition is here shown, it is obvious that a plurality of such partitions may be employed, if desired. The novel partition here shown extends across the sash opening and terminally extends across the base 13 of the sash. The partition comprises a longitudinally enlarged section 27 and a relatively thin median strip portion 28. The partition is so formed and placed that its enlarged section is at one side of the plane of the pane-receiving-recess 29 of the base 13. This enlarged portion is so positioned in order that the marginal portions of adjacent panes may be positioned against the abutting faces of the section upon opposite sides of the strip portion as is shown in Figure 3. Means are provided to hold the panes in such assembled position. A form

of such means is here shown as a glazing pin 31. One or more of these pins may be inserted through apertures in the strip-portion 28 outwardly to project upon each side thereof securely to retain the positioned panes.

Preferably, the longitudinally extending enlarged section of this partition is recessed in order that the glazing material may enter the recess and provide an adherent partial backing for the positioned panes of glass. As shown in Figure 3, this enlarged section 27 is recessed upon each side of the median strip 28 and is likewise there shown as filled with a glazing material such as the usual putty. This glazing material is also preferably placed around the other side of the pane margins, and covers up the glazing pins so that an efficient and workmanlike glazing is provided.

Having thus described my invention what I claim as new and desire to secure by Letters-Patent, is:

A window-structure consisting of a frame

having its several sides formed of a centrally disposed web-portion and flanges projecting from the opposite edges of the web-portion, the flanges projecting from one edge being shorter than the flanges projecting from the opposite edges, whereby is produced a channeled frame encircling a central opening adapted to receive a sash frame through the opening defined by the shorter flanges of the frame and have it bear against the longer flanges, and a sash-frame consisting of a body portion formed with a flange projecting from one edge of the body portion and with a recess in the opposite edge, said frame being of a dimension adapting it to fit in the smaller defined opening of the first mentioned frame and have its recess receive the longer flanges of said first mentioned frame and its projecting flange to seat against the shorter flanges of the same frame.

In witness whereof, I have hereunto set my hand this 21st day of November 1923.

OTTO W. L. BUSS.