B. L. ROTHSTEIN.

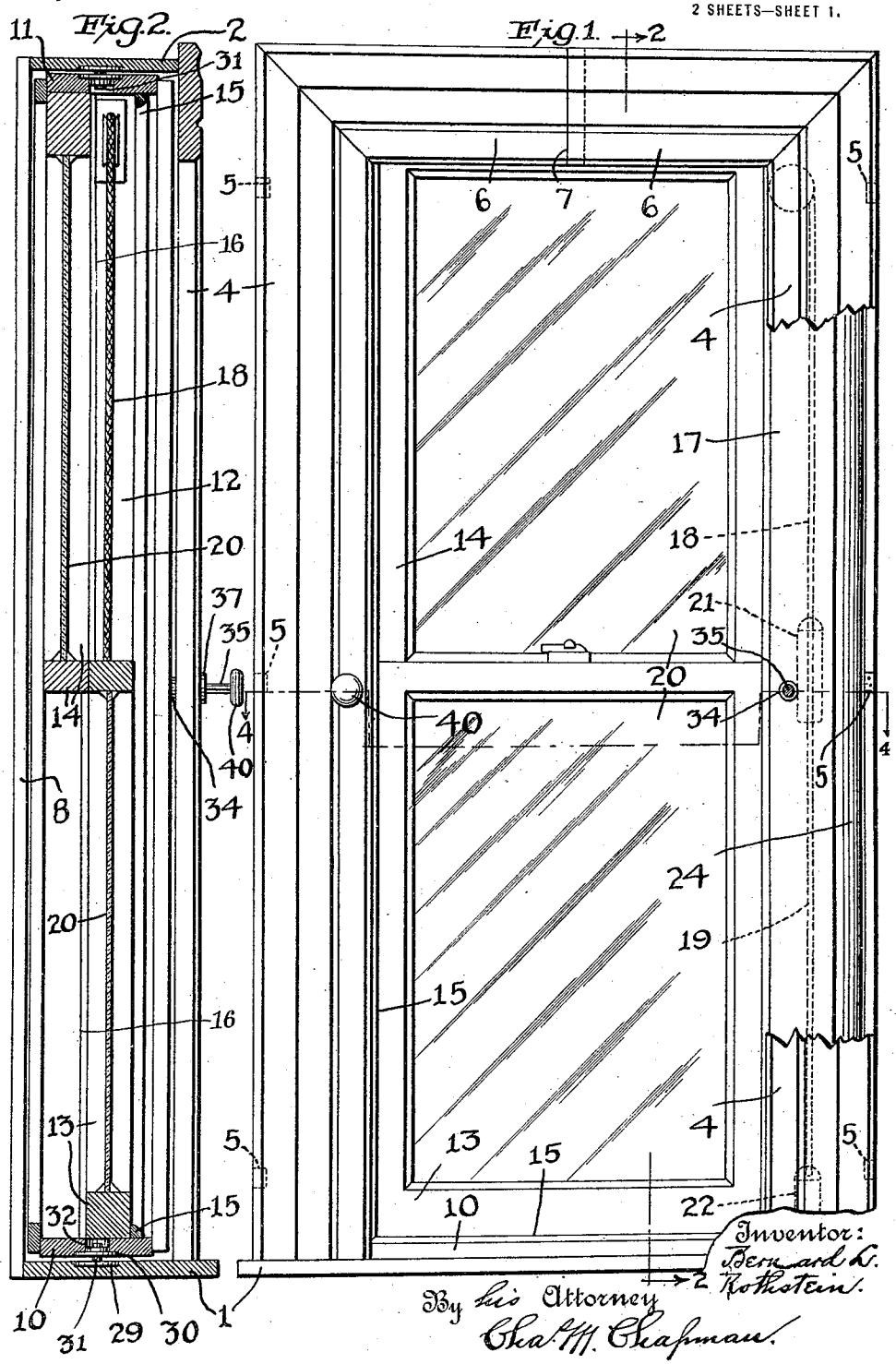
WINDOW CONSTRUCTION FOR BUILDINGS.

APPLICATION FILED JAN. 4, 1921.

1,414,583.

Patented May 2, 1922.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

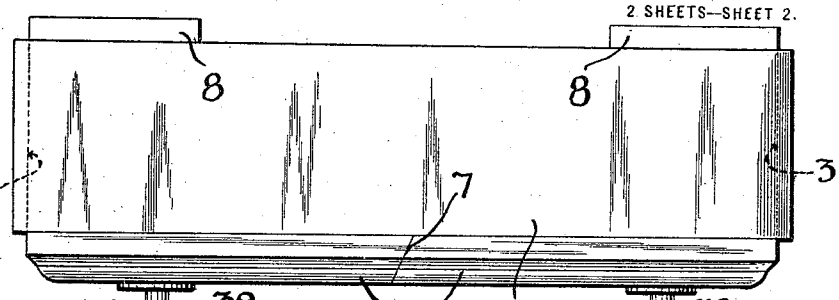


Fig. 4.

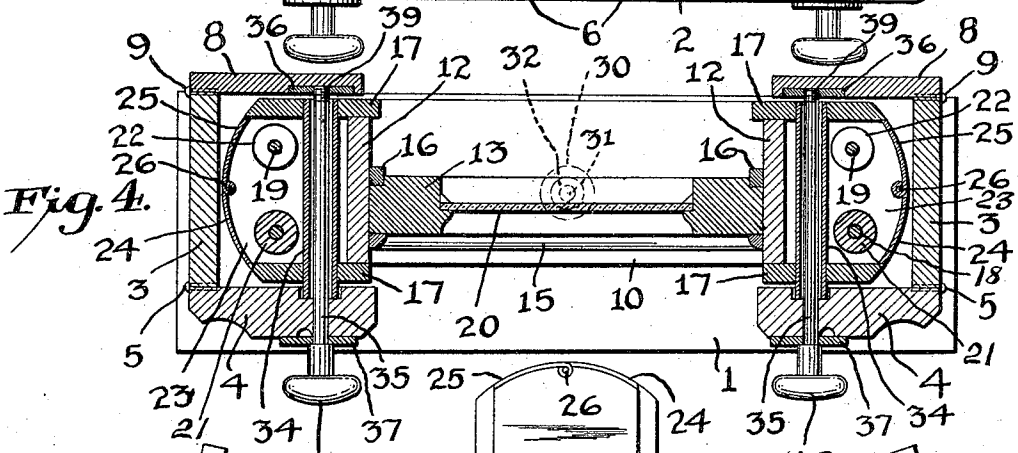


Fig. 5.

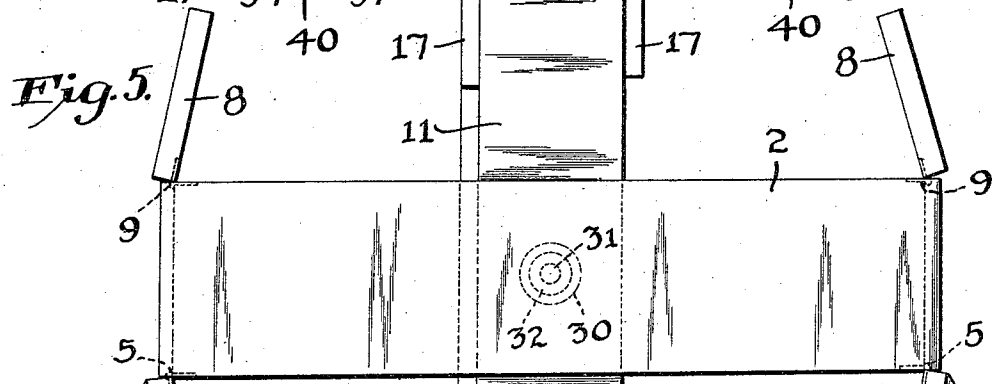


Fig. 6.

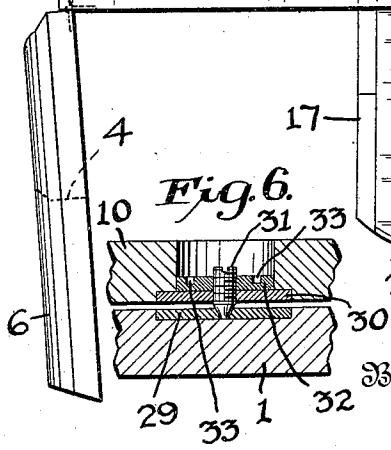
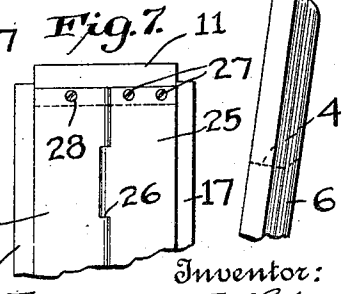


Fig. 7.



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UNITED STATES PATENT OFFICE.

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WINDOW CONSTRUCTION FOR BUILDINGS.

1,414,583. Specification of Letters Patent. Patented May 2, 1922.

Application filed January 4, 1921. Serial No. 434,899.

To all whom it may concern:

Be it known that I, BERNARD L. ROTHSTEIN, a citizen of Russia, residing in the borough of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Window Construction for Buildings, of which the following is a description.

This invention relates to building construction, and, particularly, has reference to window structures so designed as to enable the entire sash frame to be either bodily removed for certain purposes, or rotated in place so as to enable the windows to be cleaned and broken glasses to be replaced by the operator from inside of the building and without leaning out of the window or otherwise endangering himself.

Among the objects of my invention may be noted the following: to provide a window structure such that the entire sash frame, carrying sashes, weights, cords, pulleys and all necessary appliances, may be turned inside out or swung around pivotally so that the inside of the glass can be washed and then the outside, without the necessity of the operator sitting on the window sill, getting out of the window, or leaning out of the window for the purpose; to provide a structure such as noted in the foregoing which will enable a glazier to replace the window panes or a carpenter to repair the sashes or sash frame, weights, cords, etc., without leaning out of the window or getting out of the window for the purpose; to provide a window structure such that the entire sashes, sash frame, weights, cords, pulleys and all parts attached to the windows and to the sashes and sash frames may be bodily removed from the window frame, for the purpose of passing furniture and other large objects through the opening, this mode of operation incidentally increasing the size of the opening due to the peculiar construction of the window framing or parts surrounding the sash frame; to provide certain details of construction whereby sash cords and weights may be renewed, repaired and readjusted without removing any of the frame structure, such as moldings, strips and other parts which now are held in place by screws and which have to be entirely removed by a skilled operator for the purposes noted; to provide means whereby the sash cords and weights may be readily inspected from the inside of the room and all work of repair, substitution, etc., which may be necessitated may be done from the inside of the room, and without endangering life or limb of the operator; and to provide certain details of construction, which enable the foregoing objects to be accomplished, which are simple, economical to produce and operated with facility.

With the foregoing objects in view and others which will be detailed during the course of this description, my invention consists in the parts, features, elements and combinations thereof hereinafter described and claimed.

In order that my invention may be clearly understood I have provided drawings wherein:

Figure 1 is a front elevation of my entire structure constituting window frame, sash frame, sashes, etc., the view being broken away on one side to show details of construction and normal arrangement of parts;

Figure 2 is a vertical section substantially on the line 2—2 of Figure 1 looking in the direction of the arrows;

Figure 3 is a top plan view of the structure shown in Figure 1;

Figure 4 is a section in two horizontal planes substantially as indicated by the line 4—4 of Figure 1;

Figure 5 is a top plan view of the Figure 1 structure with the front and rear closures of the window frame swung wide open and the sash frame swung half way round or at a right-angle to the window frame;

Figure 6 is a sectional detail showing the structure of the pivotal mounting of the sash frame and the mode by which the same may be adjusted vertically to cause the same to swing freely in the window frame; and

Figure 7 is an elevation of a detail of the closures for the weight chamber showing the mode of securing the same.

Referring to the drawings, the numeral 1 indicates the base board of the window frame, 2 the top board, and 3 the opposite side boards of said window frame. The window frame thus composed may be of any suitable size and material such as metal, wood, etc., found suitable and the details of construction may be in accordance with the requirements of building construction. This

frame is usually set in the window opening of the building and arranged so as to properly cooperate with the window sill, both inside and outside, as may be required, and, when once set in place, may be cemented or plastered in, or otherwise anchored, so as to close all chinks, openings, cracks, etc. To the window frame, at the front or inside the building, are secured two face-plates or moldings indicated by 4, hinged at 5 to the opposite sides of the window frame uprights or side pieces 3 so as to swing inwardly into the room, each of the moldings carrying top-piece moldings 6, the cooperating edges of which are beveled or otherwise constructed, as shown at 7, so as to overlap and smoothly close one against the other without showing any appreciable parting or line of separation. Two back plates or closures 8 are hinged at 9 to the uprights or side pieces 3 of the window frame so as to cover the exposed rear or outside portions of the sash frame and thus keep out air, snow, rain, dust, etc., the front moldings having like functions, in addition to their ornamental or finishing characteristics, for the inside of the window frame.

Set within the window frame, as described in the foregoing, is a sash frame composed of bottom, top and side members 10, 11 and 12, in which the window sashes 13 and 14 slide vertically, inside guide strips 15 being provided to prevent the lower sash from being shifted inwardly, and middle guide strips 16 being provided to prevent the upper sash from being shifted inwardly, side strips 17 being also provided inside and outside for finish and, at the outside, to guide the outside window sash. Cords 18 are secured to the lower sash, cords 19 to the upper sash, and 20 indicates the glass or lights in the two sashes. The weights 21 and 22 connected to the respective sash cords (shown on one side only, Figure 1) hang and operate in chambers 23 formed by the side members 17 of the sash frame, and two members 24, 25 hinged together at their inner edges at 26 and cooperating with the side members 17 of the sash frame. At top and bottom, the hinged members are secured by screws to the top and bottom members respectively of the sash frame, the outer member of each set having two screws 27 passed through both its top and bottom, while the inner member of each set has one screw 28 passed through both its top and bottom, the removal of the one screw facilitating the entry to the chamber for the purpose of replacing weights and cords, repairing, etc.

The entire sash frame is journaled and pivotally mounted for adjustment in and centrally of the window frame, details of construction being shown in Figure 6, wherein is indicated a structure which is duplicated at top and bottom of the window frame and sash frame. As shown in Figure 6, the bottom member 1 of the window frame is provided with a socket plate 29 securely held in position by suitable means and provided centrally with a conical aperture. The adjacent cooperating member of the sash frame is provided with a complemental socket plate 30 secured to the bottom thereof by suitable means and through the central, screw-threaded opening of which passes a screw 31, one end of which is tapered and smooth so as to cooperate with the socket in the socket-plate 29, thus providing a journal-bearing which is adjustable. The adjustment is provided for by turning the screw 31 one way or the other; raising or lowering the sash frame relatively to the window frame and thereby enabling the freedom of movement of the one relatively to the other. When the proper position of the one frame relatively to the other has been secured by adjustment of the screw, the latter is locked by the locking nut or plate 32 which has a central, screw-threaded opening cooperating with the body of the screw and provided with a plurality of openings 33 for the reception of a spanner-wrench. By turning the locking nut or plate upon the screw, it can be firmly set against the member and thus prevent the screw from turning, losing its adjustment, and having any vertical movement. For adjusting the screw, the locking plate or nut must be first loosened. By this means, the entire sash frame may be swung within the window frame, carrying with it sashes, cords, weights and all members or parts secured to it, thus enabling an operator to replace broken glass, reputty the glass, replace broken cords, substitute weights, etc., etc., without leaning out of the window or getting out of the window, and enabling every operation to be performed from the inside of the building and with perfect safety.

To secure the sash frame in normal position fixedly relatively to the window frame, the sash frame, on opposite sides, substantially midway between top and bottom, is provided with a tubular passage which may be framed with a piece of piping 34, if desired, in order to prevent wear and provide for smoothness of operation and for direction of a long screw-bar 35 without hitch or retardation to the passage of the latter. The outside hinged members or closures 8 are each provided with a screw-threaded socket-plate 36 in position to register with the outer end of the tubular passage in the sash frame, and each of the molding or inside members 4 of the window frame is provided with a similar plate 37, with smooth central bore, applied thereto in register with the inner end of the passage tube of the sash frame. A long bar 35 having one end screw-threaded

at 39 and the other end provided with a knob or handle 40 of any suitable form or design, is passed through the plate in the molding, the passage tube 34 in the sash frame, and into the socket-plate 36 of the closure member at the outside of the window frame. By turning the bar, the closure 8 is drawn tightly against the outer side of the sash frame and the molding 4 is pressed tightly against the inner side of the sash frame, and thereby the sash frame, window frame, closures and molding are all rigidly locked together in proper operative position. These locking bars are preferably arranged midway of the window and sash frames so that the sash weights will not interfere with them, and so that the weights cannot be jammed between them and the sash frame; and, by viewing Figure 4, it will be seen that there is ample room in the weight and cord chamber for the operation of the weights, and, by viewing Figure 1, it will be seen that, whatever may be the position of the sashes, the weights are so disposed that they cannot interfere with the passage tubes. This is also true when the window sashes are raised and lowered.

From the foregoing detail description, it will be readily understood that, when the windows are to be washed, or panes of glass are to be replaced, or reputtying or painting is to be done, or if it is desired to repair, readjust or substitute weights and cords, or inspect the latter, the locking bars 35 are first removed by unscrewing the same and pulling them out of the passage tubes 34, thus releasing the front molding 4 and back closures 8. The moldings and closures can then be swung clear open on their hinges, Figure 5, whereupon the entire sash frame is capable of being swung or rotated on its journal bearings, so as to get at the weight chambers or wash the window panes, or do such painting as may be required on the outside. At this time, also, or at any time, readjustments may be made to the sash frame relatively to the window frame by first loosening the locking plate or nut 32 with a spanner-wrench and then turning the screw 31 as desired in either or both the top and bottom journal members. All this work can be done from the inside of the building without any danger to the operator. If large pieces of furniture, a safe, a piano, etc., have to be brought through the window, the entire sash frame can be removed by sufficiently retrieving the journal screws 31 and entirely removing the sash frame from the window frame, including weights, cords, pulleys and all other features of construction, leaving only the window frame and its front and back closures in wide open position, thus providing an unusually large passage for the particular article to be brought into the building.

While I have disclosed my invention with reference to so-called windows or window-openings for buildings, I desire it understood that it is not confined to such openings, since it may be found desirable to construct door openings and other passageways in similar manner, it being obvious that, instead of the window sashes, one or two doors may be provided hinged to the side members of the inner frame or sash frame, as hereinbefore described. This will enable the entire inner frame structure to be either rotated in, or entirely removed from, the outer frame structure, as may be desired.

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

1. In building construction, a window frame having front and back hinged members, in combination with a sash frame inclosed by the window frame; and means passing through the front and back hinged members and the sash frame for rigidly locking the two frames together in operative relation.

2. In building construction, a window frame in combination with a sash frame, the sash frame being set within the bounds of the window frame, the sash frame having opposite side chambers, and a locking bar passing through opposite sides of the window frame and through the chambers of the sash frame to rigidly secure the frames together in operative position.

3. In building construction, a window frame in combination with a sash frame, the window frame having front movable members the tops of which are provided with right-angular extensions which, at the center of the window frame, overlap each other, and said window frame also having back movable members, said sash frame being pivotally mounted on the window frame, and locking means passing through the front movable members, through the sash frame, and into the back movable members and adapted to lock the said several members rigidly together.

4. In building construction, a window frame having movable front and back members on each side thereof, in combination with a sash frame pivotally mounted in the window frame and having at its opposite sides passage tubes extending transversely thereof, and locking bolts passing through the front movable frame members, through the said passage tubes, and into the back movable frame members and adapted to lock the said members rigidly together.

BERNARD L. ROTHSTEIN.