

June 19, 1934.

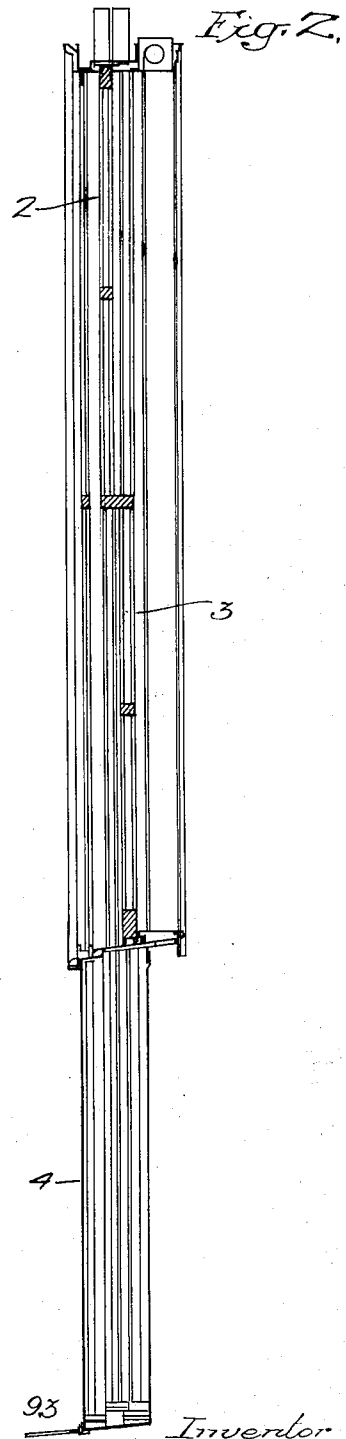
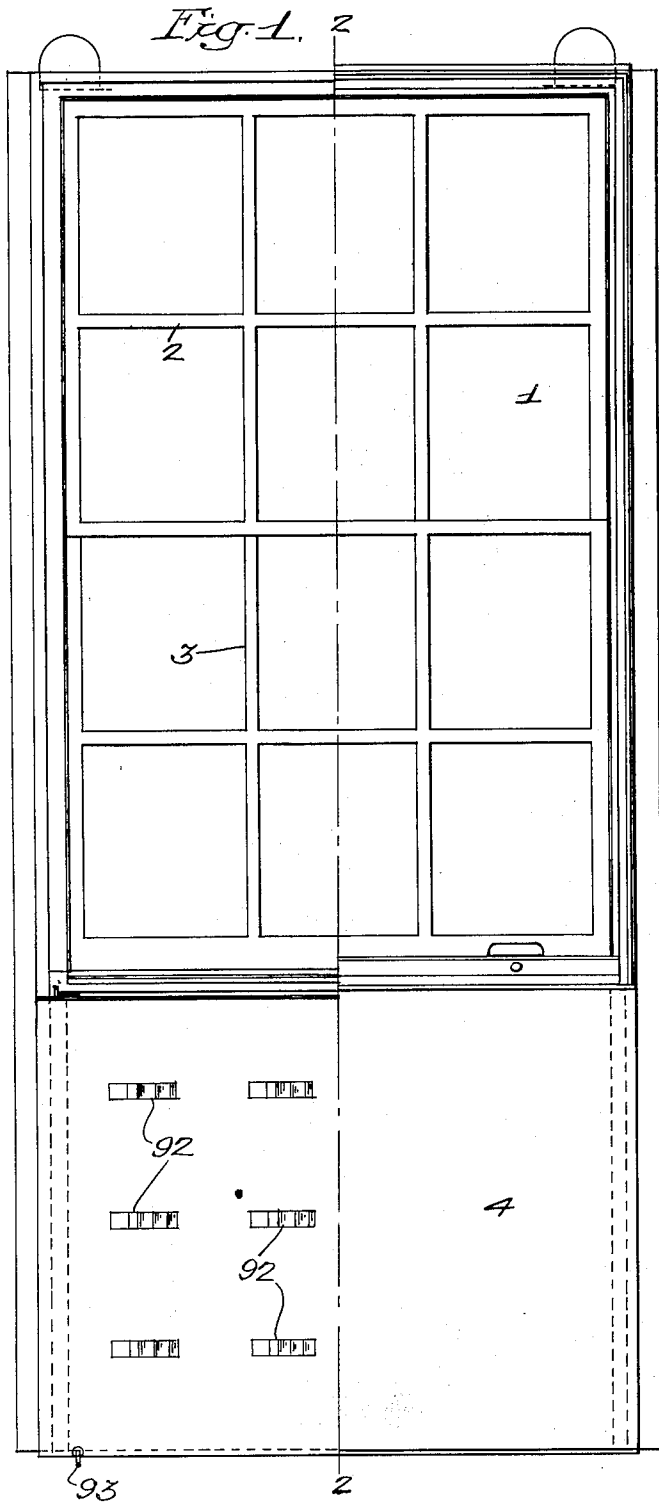
E. N. EDWARDS

1,963,839

WINDOW STRUCTURE

Filed June 17, 1933

4 Sheets-Sheet 1



Inventor
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by his Attorneys
Hawson & Hawson

June 19, 1934.

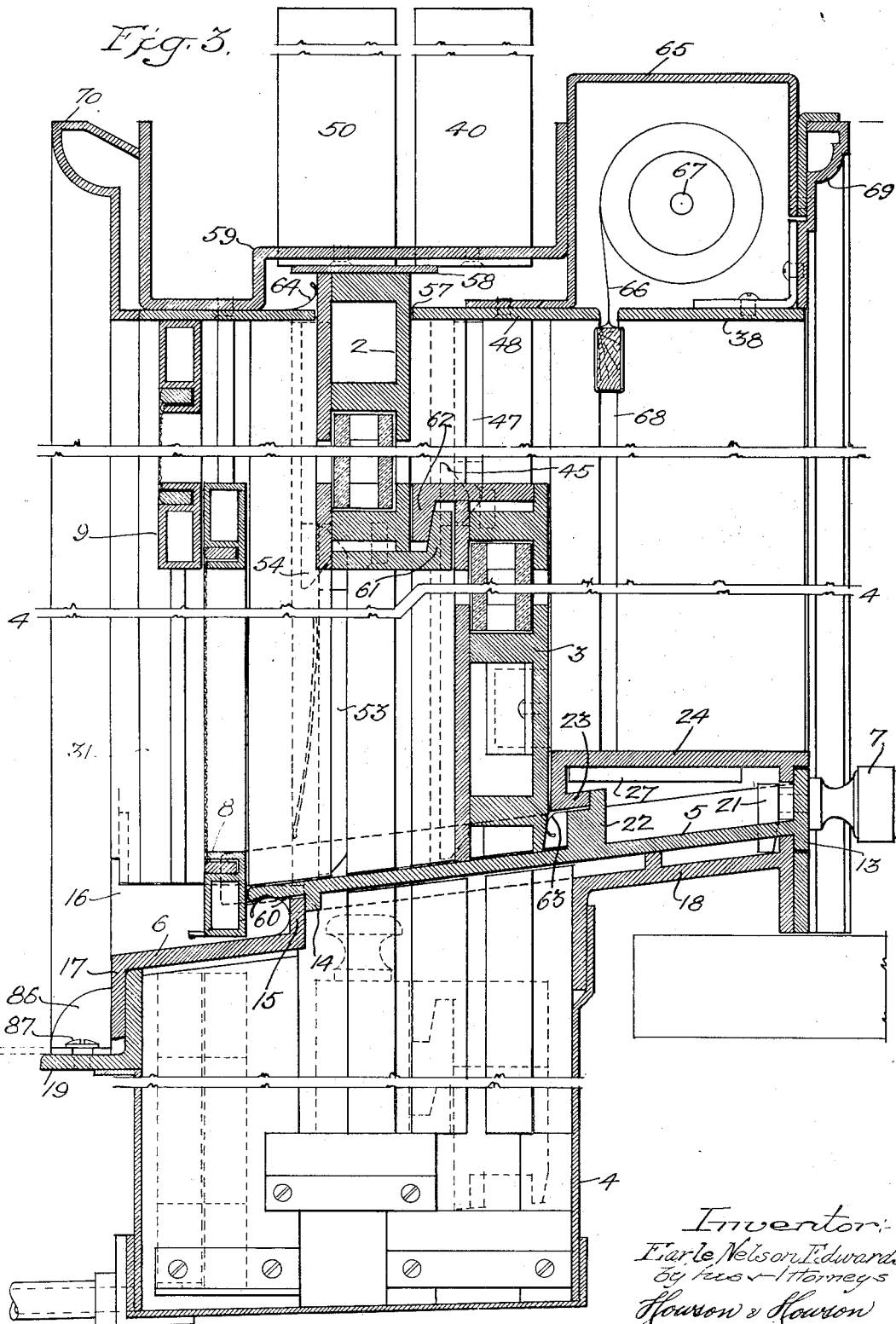
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1,963,839

WINDOW STRUCTURE

Filed June 17, 1933

4 Sheets-Sheet 2



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June 19, 1934.

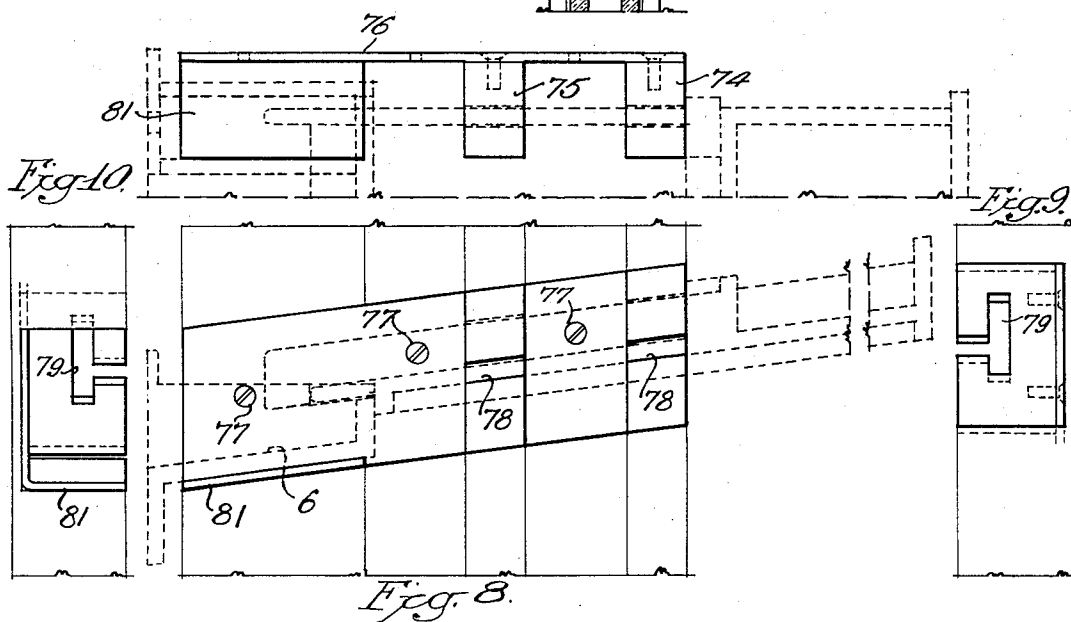
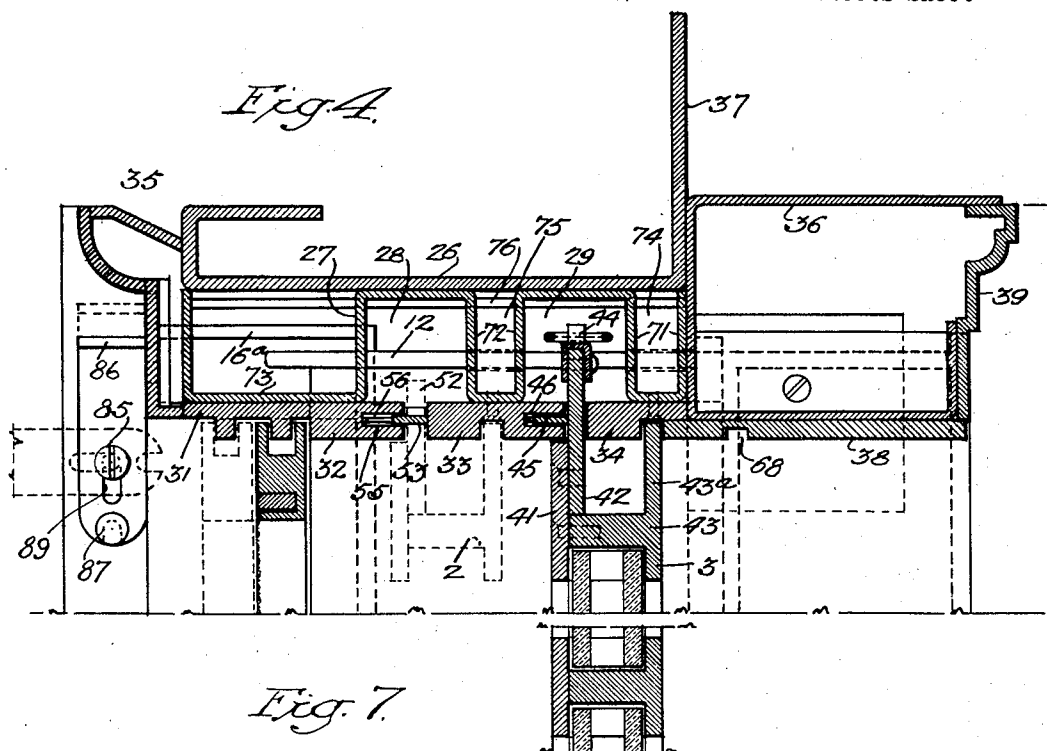
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WINDOW STRUCTURE

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4 Sheets-Sheet 3



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WINDOW STRUCTURE

Filed June 17, 1933

4 Sheets-Sheet 4

Fig. 5. Fig. 6.

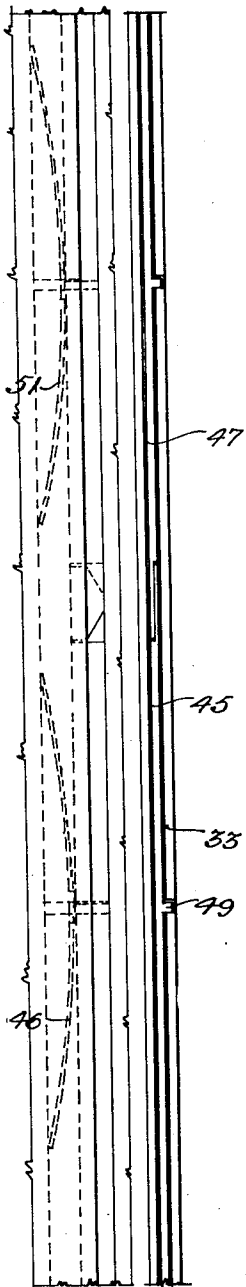


Fig. 11

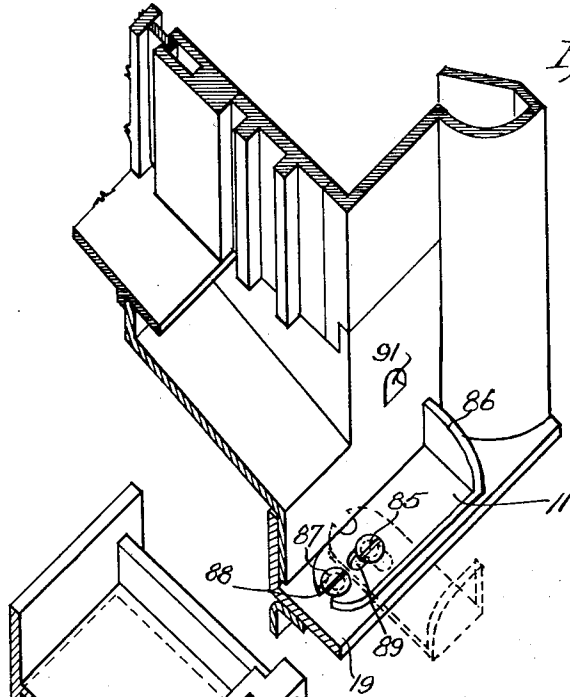


Fig. 12.

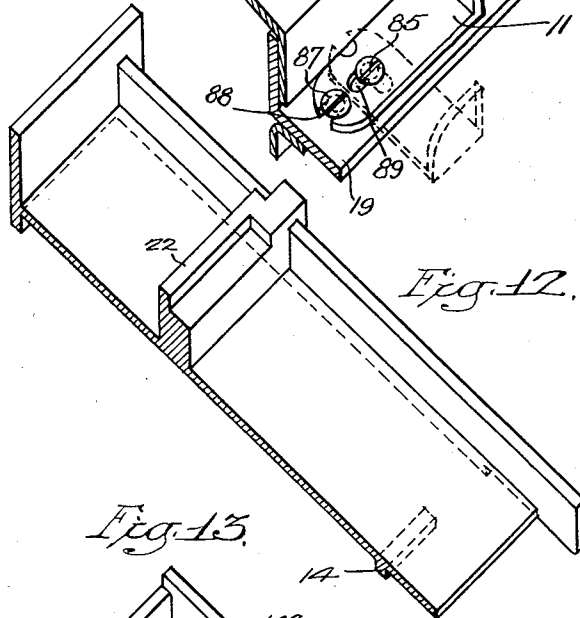
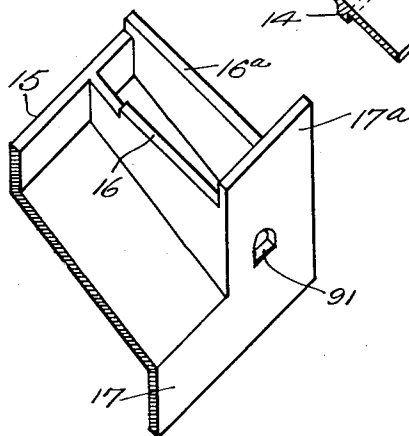


Fig. 13.



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UNITED STATES PATENT OFFICE

1,963,839

WINDOW STRUCTURE

Earle Nelson Edwards, Paoli, Pa.

Application June 17, 1933, Serial No. 676,364

18 Claims. (Cl. 189—72)

This invention relates to improvements in window structures, and a principal object of the invention is to provide a window of the double-hung type which shall take the form of a practicable and readily manufactured unit, the window being so constructed as to afford all the advantages both of the double-hung and casement types of window, while lacking the disadvantages inherent in either type. The window unit constituting my invention shall be capable of manufacture in the factory as a complete unitary structure, and is so designed as to be readily mounted in any type of building structure. My window is well adapted to manufacture out of metal.

The invention further resides in certain structural and mechanical details, such, for example, as the method of sealing against the weather, and these various novel details are illustrated in the attached drawings, in which

Figure 1 is a view combining interior and exterior elevations;

Fig. 2 is a diagrammatic section on the line 2—2, Fig. 1;

Fig. 3 is an enlarged sectional view similar to that of Fig. 2;

Fig. 4 is a transverse sectional view on the line 4—4, Fig. 3;

Figs. 5 and 6 are fragmentary elevational views illustrating a detail of the structure;

Figs. 7 and 8 are fragmentary views showing a detail of the structure in plan and elevation, respectively;

Figs. 9 and 10 are end elevational views of the parts shown in Fig. 8; and

Figs. 11, 12 and 13 are fragmentary perspective views showing other details of structure.

It has been proposed to construct double-hung windows having provision for lowering both the upper and lower sashes into a well located below the window opening. The prior window structures of this character, however, have generally constituted a built-in fabricated part of the structure of the building in which the window is installed, and attempts to provide such structures in the form of a finished unit have proved unsuccessful by failure to make provision for practical requirements and for the various appurtenances constituting essentials of a practical window structure. By the present invention I have provided a window of the stated character in the form of a unitary structure of entirely practical design, and in which provision is made for all of the appurtenances which go to make up the present modern window structure.

With reference to the drawings, the window structure comprises in a preferred embodiment what in effect is a fabricated metallic frame of substantially rectangular form. The upper part 1 of this frame is normally closed by the upper and lower sashes 2 and 3, respectively; and the lower part of the frame is enclosed by a casing to provide a pocket or well 4. A pair of sliding plates 5 and 6, see Fig. 3, mounted in the frame jointly constitute the sill of the window opening and a cover for the casing 4. The sill plate 5 has at its inner edge one or more knobs 7, by means of which the plate, which is slightly downwardly inclined towards the outer side of the window frame, may be drawn inwardly to permit adjustment of the upper and lower sashes 2 and 3 into the pocket 4, the latter being so proportioned as to receive the sashes in their entirety. The plate 6, which occupies a plane parallel to the plane of the plate 5 but somewhat lower, is adapted to be slid outwardly to uncover the outer portion of the pocket 4 which is adapted to contain the upper and lower frames 8 and 9 of a double-sliding screen, this screen as hereinafter set forth being adapted to assume a position within the window opening outwardly of the sashes 2 and 3, as shown in Fig. 3. Normally outward movement of the plate 6 is prevented by pivoted latches 11 on the outside of the window frame which are adapted to be adjusted on their pivots to release the plate.

The general form of the plates 5 and 6 is best shown in Figs. 3 and 4 and 11 to 13 inclusive. At each side edge, the plate 5 has a vertical flange 12 which extends both above and below the upper and lower edges of the plate and beyond the outer end thereof. The flange 12 joins a corresponding vertical flange 13 at the inner end of the plate, the upper edge of the flange 13 extending slightly above the top of the flanges 12. Adjacent the outer end of the plate 5 is a shallow depending flange 14 which terminates short of the side edges of the plate, and the lower portions of the side flanges 12 of the plate terminate on a line corresponding with the flange 14, see Fig. 12. This depending flange 14 normally abuts a vertical flange 15 at the inner end of the sill plate 6. The flange 15 at its opposite sides joins side vertical flanges 16, 16^a, the upper edges of which extend above the upper edge of the flange 15, and the plate 6 terminates at its outer edge in a depending flange 17. The depending portion of the vertical flange 13 at the inner end of the plate 5 and the depending flange 17 of the plate 6 constitute stops determining the normal

positions of the respective plates in the frame, the said flange 13 engaging the face of a fixed sill member 18 in the fabricated framework of the window structure, and the flange 17 engaging the face of a transverse frame-piece 19, also constituting an element of the fabricated framework of the window structure.

By reference to Fig. 3, it will be noted that the handle 7 is pivotally mounted in the flange 13 of the plate 5, and carries at the inner end of the pivot shaft a latch 21 which engages behind an upstanding flange at the inner edge of the frame member 18, to thereby releasably lock the plate in its normal position. The plate 5 further comprises a transverse upstanding cross-bar 22 which, when the plate is in the normal position, engages the edge of an inwardly projecting flange 23 of a transverse frame member 24. It will be noted that the plate 5 slides between the frame members 18 and 24 and that the flange 13 of the plate 5 constitutes a closure for the space between these two plates at the inner side of the frame.

The construction of the jamb portions of the window structure is shown in Figs. 3, 4 and 11. The jambs individually comprise an outer angular member 26, to the inner face of which is secured a channeled member 27. The member 27 is so formed as to provide two inwardly opening channels 28 and 29. To the inner face of the channel plate 27 are secured a series of guide strips 31, 32, 33 and 34, respectively, the adjoining plates 32 and 33 being spaced to afford a slot opening into the channel 28, while the adjoining edges of the plates 33 and 34 are similarly spaced to afford admission to the interior of the channel 29. An outer moulded finishing plate 35 in the form of a channel embraces the edges of the plate 31, of the outer end of the channel plate 27, and a portion of the outer edge of the outer plate 26. At the inner edge of the jamb is a rectangular channel member 36, the outer face of this channel member engaging the outwardly projecting flange 37 of the plate 26, and also the inner surface of the channel plate 27 and the inner edge of the jamb-plate 34. An inner finishing plate 38 is secured to the inner face of the channel member 36 and overlaps the inner vertical edge of the plate 34. A molding strip 39 may be provided at the inner end of the channeled member 36 as illustrated. It will be understood that the opposite jamb of the window structure is identical in construction but reversed.

As indicated in Figs. 3 and 4, the sashes 2 and 3 are in the present instance of the double-glazed type, with two panes of glass spaced from each other. The sashes in general are formed of T-sections 43 with detachable plates 41 on the outer faces permitting mounting of the glass in the sash. Secured to the inner face of this detachable plate 41 is a strip 42 continuous from top to bottom of the sash which projects transversely beyond the outer edge of the plate 41 and through the space between the plates 33 and 34 into the channel 29. The other vertical side strip 43a of the sash projects at its outer edge into a groove formed between oppositely disposed vertical edge surfaces of the plates 34 and 38. To the outer edge of the strip 42, which occupies a position within the channel 29, is attached one end 44 of a spring balance device which is housed in a casing 40 at the top of the window frame.

It will be noted that that edge of the plate 33 which abuts one side of the strip 42 is slotted in-

wardly for reception of a sealing strip 45, which is forced outwardly from its recess by a plurality of flat springs 46 confined between the bottom of the slot and the inner edge of the strip 45 and adjacent the ends of the latter. The strip is thereby resiliently held against the face of the strip 42 to seal the joint between the outer face of the strip 42 and the inner adjacent edge of the plate 33. As shown in Fig. 3, the strip 45 extends continuously to the sill plate 5 from a point adjacent the top of the inner sash 3 when the latter is in the normal closed position as illustrated. A second strip 47, corresponding to the strip 45, extends from the upper end of the last-named strip to the top cross-member 48 of the frame, as shown in Fig. 3. The upper and lower ends of the strips 45 and 47 overlap and are rabbeted as shown in Fig. 6, and the strips are provided with offset lugs 49 which project into slots in the plate 33, so as to support the strips in their proper positions. A second set of flat springs 51 is provided in the upper end of the slot behind the strip 47 for holding this strip resiliently outwardly of the slot, and the meeting ends of the upper and lower strips 45 and 47 and the lower end of the strip 45 are beveled, as also are those portions of the upper and lower edges of the strip 42 which engage the strips 45 and 47, to provide for a cam-like engagement between the ends of the sashes and the ends of the strips, whereby the latter are readily displaced inwardly in their slots by the sash and are prevented from acting as stops to the normal movement of the sashes in the frame.

The upper sash 2 is constructed similarly to the lower sash 3, as described above, this upper sash being provided with a strip 52 corresponding to the strip 42 of the lower sash, the strip 52 projecting through the slot between the adjacent edges of the plates 32 and 33 into the channel 28. The inner projecting edge of the strip 52 is associated with a spring balance (not shown) housed at the top of the frame within a casing 50. Provision is also made for sealing the joint between the outer face of the strip 52 of the upper sash and the adjoining edge of the plate 32, this means being in the form of strips 53 and 54 corresponding to the strips 45 and 47 previously described and located in a slot 55 in the edge of the plate 32. Springs 56 are provided for resiliently retaining the strips 53 and 54 in the advanced or projected position in which they engage either the outer face of the strip 52 of the sash or the opposed face of the plate 33, the slot between the plates 32 and 33 being effectively sealed to the weather regardless of whether the sashes are elevated or lowered into the casing 4.

As shown in Fig. 3, the lower edge of the lower sash 3 normally abuts the upper surface of the plate 5, while the upper edge of the upper sash 2 extends through a slotted opening 57 in the upper transverse plate 48 and engages with an abutment plate 58 secured to the inner face of the upper transverse frame-piece 59. Means is provided for interlocking the meeting edges of the upper and lower sashes respectively, this means as shown in Fig. 3 being in the form of reverse interlocking tapered hook portions 61 and 62 which, when interlocked, form an effective seal between the adjoining edges of the upper and lower sashes. Also as shown in Fig. 3, the transverse bar 22 of the plate 5 carries an outwardly and downwardly extending sealing strip 63 which engages the inner face of the lower edge of the lower sash 3 when the latter is in the normal position, to thereby seal the joint between the

lower edge of the sash and the plate 24, and a correspondingly formed resilient strip 64 is provided at the top of the plate 48 to engage the outer face of the upper sash 2, whereby the joint between the upper sash and the plate 48 is effectively sealed against passage of air from the outside of the frame past the sash. The joint between the meeting edges of the sill plates 5 and 6 is sealed in like manner by a resilient strip 60 secured to the plate 6 in position to engage the overhanging outer end of the plate 5. It will thus be apparent that I have provided by extremely simple means an effective and complete weather seal for the window sashes precluding the passage of any substantial quantities of air when the window is closed.

As shown in Fig. 3, the upper transverse frame-piece comprises the outer channeled frame member 59, to the under surface of which is secured one section of a double frame strip 48. To the inner end of the cross-bar 59 is secured a box member 65 which carries the intermediate element of the top plate 48 and also the inner portion of this top plate, these two plate portions being separated to provide a slot extending transversely of the frame for passage of a shade 66, which may be mounted on the roller 67 within the box 65, the sides of this shade operating in recesses 68 in the jamb plate 38 as illustrated. A finishing strip 70 is provided at the outer end of the frame-piece 59, this strip corresponding with the finishing strip 35 at the outer edges of the jambs, and the inner edge of the box 65 may be provided with suitable molding 69 corresponding to the molding 39 and extending across the top of the frame. This part of the frame may be modified to suit any form of shade desired, such for example as Venetian blinds.

As previously set forth, the sill plate 5 intersects the guide strips 31, 32, 33 and 34 and the finishing plate 38, and also intersects the inwardly projecting portions 71, 72 and 73 of the channel plate 27, see Fig. 4. This sill plate is confined and slides in guide slots formed in jamb blocks 74 and 75, see Figs. 4 and 7 to 9, inclusive, which project inwardly from a plate 76 suitably secured as by screws 77 to the channel plate 27 at the bottom of the channels. The blocks 74 and 75 are of the same width as the inwardly projecting portions 71 and 72 of the plate 27 and occupy recesses formed in these inwardly projecting portions.

As shown in Fig. 8, the plate 76 is inclined and parallels the normal plane of the sill plates. Each of the blocks 74 and 75 has a transverse diagonal slot 78 which terminates in a vertical similarly inclined slot 79. The flange 12 of the sill plate occupies the vertical slot 79, the body of the sill plate extending outwardly through the slot 78, the relative positions of the plate with regard to the blocks 74 and 75 and the guide slots in the latter being shown in broken lines in Figs. 7 and 8. It will be apparent that the plate is supported and is so guided in the slots 78 and 79 that it is positively maintained in its normal plane and position relative to the other parts of the window structure. It will be noted from Figs. 7 to 10 inclusive and Fig. 12 that the ends of the cross bar 22 of the sill plate are so formed that when the plate is in the normal position, the said cross bar constitutes closures for the ends of the slots 78 and 79 which they abut.

As illustrated in Figs. 3 and 7 to 10 inclusive, the side edge portions of the sill plate 6 intersect the projecting portion 23 of the channel plates

27 and are supported upon transversely and inwardly projecting flanges 81 at the lower edge of the plates 76. As shown in Fig. 4, the sill plate 6 is of greater length than the inner sill plate 5, so that normally the outer edge of the latter sill plate lies entirely over the sill plate 6. As previously set forth, the sill plate 6 has at its inner end an upstanding flange 15 and a depending flange 17 at its outer edge, and this plate also has side flanges 16, 16a previously mentioned. The inner side flanges 16 lie flush with the body of the plate 31, see Fig. 11, and normally fill the gap between the lower edges of this plate 31 and the body of the sill plate 6. The flanges 16 and 16a are joined at their outer ends by an extension 17a of the flange 17, which, when the sill plate 6 is in its normal retracted position, as shown in Fig. 11, lies flush with the outer face of the finishing strip 68, a recess being provided in the latter for reception of the said flange extension. In order to retain the plate 6 in the retracted position, I provide the latches 11 pivoted at 85 to the angle member 19. Each latch has an upstanding flange 86, which, when the element is in the normal operative position, as shown in Fig. 11, lies against the face of the flange 17. The latch is held in this position by a screw 87 in the member 19 which enters a slot 88 in the end of the latch. The pivot screw 85 also occupies a slot 89 in the latch, and by sliding the latch longitudinally, the screw 87 may be cleared from its slot, thereby permitting the latch to turn on its pivot to the dotted line position. The sill plate 6 is now free to move outwardly to an extent limited by the flange 86 of the latch, this flange acting to prevent complete withdrawal of the sill plate from the frame. Any water entering the space between the flanges 16 and 16a of the plate 6 will pass off through a port 91 in the flange extension 17a.

Attention is particularly directed to the casing 4 which constitutes the lower part of the structure. The solid walls of this casing constitute a highly desirable backing for the outer relatively thin masonry wall or spandrel where the window frames are set, and also for the inner walls. Preferably, the outer walls, at least of the casing 4, are provided with projecting strips 92 which, when embedded in the outer wall structure or panel, constitute anchors or ties by means of which the wall or panel may be united securely to the window structure. The lower closed casing 4 also prevents accidental water entering through the sill openings from going down into and damaging the wall. Any water collecting in the casing is free to pass out of the drain pipe 93, see Figs. 1 and 2, to the outside of the wall structure in which the window is mounted. A still further advantage of the casing construction resides in the fact that it prevents moisture penetrating the outer wall from damaging the screens, which over a substantial period of the year may be stored in the casing.

It will be understood that the foregoing description has been confined to one side only of the window structure, and that this description is sufficient by reason of the symmetrical form of the structure. There may be modification in the details of construction without departure from the invention.

I claim:

1. A window in the form of a structural unit consisting of a substantially rectangular frame, means for encasing the sides and bottom of the lower portion of said frame, displaceable means

forming the covering of said casing and the sill of the window opening formed by the upper portion of said frame, and sash means in said frame adapted to close said window opening and adjustable in said frame to a position within said lower casing portion, leaving the window opening unobstructed.

2. A window in the form of a structural unit comprising a substantially rectangular frame, said frame comprising upright side members; a transverse member joining the tops of said side members and lower transverse members extending between said side members intermediate the ends of the latter, said lower transverse members being spaced apart to leave a portion of said side members unobstructed; means secured to the lower ends of said side members and to said lower transverse members and forming a closed casing at the bottom of said frame, access to which is provided between said lower transverse members; sill means adjustably mounted on said lower transverse members and constituting a cover for said casing and a sill for the overlying window opening; and sash means adapted to close said opening between the sill, the upper transverse members and the upper portions of said side members; said sill means being displaceable to permit adjustment of said sash means between the side members of the frame into said lower casing to thereby leave the window opening substantially unobstructed.

3. A window in the form of a structural unit comprising a substantially rectangular frame, said frame comprising upright side members and a transverse top member and also lower transverse members secured in spaced relation at opposite sides of said side members and defining the bottom of the window opening, said side members extending below the said lower transverse members and having guideways therein, elements secured to said lower transverse members and to the lower portions of said side members and forming a substantially enclosed casing below said lower transverse members, sash means adjustable in said guideways between positions respectively closing said window opening and substantially completely enclosed within said casing, and sill means adjustably mounted in said frame in operative association with said lower transverse members and constituting both the sill of the window opening and a cover for said casing, and means for displacing said sill means to permit adjustment of the sash means into and from said casing.

4. A window in the form of a structural unit comprising a substantially rectangular frame, said frame comprising vertical side members, a top transverse member and spaced lower transverse members extending between the said side members intermediate the top and bottom of the latter, said lower side members defining the bottom of the window opening, plates secured to said lower transverse members and to the lower portions of said side members and forming with the latter an enclosed casing below the window opening, a still plate slidably supported in said side members and forming a closure for said casing, and sash elements slidably supported in said side members and adjustable between positions respectively closing said window opening and enclosed within said housing, in which latter position the window opening is left substantially unobstructed, said sill plate being displaceable to permit adjustments of the sash elements into and from said casing.

5. A window in the form of a structural unit comprising frame elements defining a window opening and a substantially closed casing positioned below said opening, sash means displaceable between positions respectively closing said window opening and housed within said casing, a sill plate defining the bottom of said window opening and constituting a cover for said casing, said plate being displaceable to permit adjustment of said sash means into and from said casing, and a port at the bottom of said casing adapted for connection with a suitable drain and providing for elimination from the casing of water entering at the top when the sill plate is retracted.

6. A window structure comprising upright side members and a transverse top member, each of said members comprising inner and outer spaced walls, guideways in said inner walls for reception of adjustable sash means, a sill plate intersecting said inner walls at a point intermediate the top and bottom of said side members and defining the bottom of the window opening normally closed by said sash means, and guide blocks supported on said outer walls and having guideways in which said sill plate is slidably supported and guided, said plate being retractible in said guides to a position permitting adjustment of said sash means to a position below said plate whereby the said window opening is left substantially unobstructed.

7. In a window structure, the combination with upright side members each comprising an inner and outer wall, of a sill plate intersecting said inner walls, elements secured to said outer wall and having guideways in which said sill plate is adjustably supported, sash elements adjustably mounted in said side members and normally occupying a position above said sill plate, and means for retracting the sill plate in its guides to permit adjustment of said sash elements between the side members to positions below said plate to thereby leave the window opening substantially unobstructed.

8. In a window structure, the combination with vertical side members each comprising inner and outer walls, of a sill member intersecting the said inner walls and defining the bottom of the window opening, said side members extending below said sill member and having longitudinal guideways therein, sash elements slidably mounted in said guideways and having portions projecting through slots in said inner walls, suspension means for said sash elements operative in the space between said inner and outer walls and secured to the projecting portions of said sash elements, and elements secured between said inner and outer walls in positions offset from said projecting portions of the sash and having guides for reception of the edge portions of said sill plate, said sill plate being adjustable in said guides to a retracted position permitting adjustment of the sash elements in said side members to alternate positions above and below the sill member.

9. In a window structure, the combination with side members each comprising an inner and outer wall, of a sill plate extending between said side members and intersecting each of the inner walls thereof, said sill plate having at the opposite edges upright flanges, and means projecting inwardly from the outer walls and having guideways embracing the edges of said plate and the said flanges and constituting guide supports in which said sill plate is adjustable to a retracted

position leaving the inner faces of said side members substantially unobstructed, and sash means adjustably supported in said side members to alternative positions above and below said sill plate.

10. In a window structure, the combination with upright side members each having an inner and outer wall, said inner walls having longitudinal guideways, sash elements adjustably mounted in said guides, inner and outer sill plates extending transversely between said side members and each intersecting the inner walls thereof, guide means for said plates within the space between said inner and outer walls, said plates inclining downwardly towards the outer side of said structure and the inner plate being of lesser width than the outer plate and overlying the inner edge of said outer plate when said plates are in the normal position, upwardly extending flanges at the side edges of each of said plates, and means for displacing said plates to leave the side members unobstructed for adjustment of the sash elements to alternative positions above and below said plates.

11. In a window structure, the combination with upright side members each having an inner and outer wall, said inner walls having longitudinal guideways, sash elements adjustably mounted in said guides, inner and outer sill plates extending transversely between said side members and each intersecting the inner walls thereof, guide means for said plates within the space between said inner and outer walls, said plates inclining downwardly towards the outer side of said structure and the inner plate being of lesser width than the outer plate and overlying the inner edge of said outer plate when said plates are in the normal position, upwardly extending flanges at the side edges of each of said plates, means for displacing said plates to leave the side members unobstructed for adjustment of the sash elements to alternative positions above and below said plates, and means for locking said plates in their normal positions, said means including a latch element normally engaging the outer edge of said outer plate and adjustable to an extended position to permit outward displacement of said plate from the said normal position, said latch member in the extended position occupying a position in the path of said plate to thereby constitute a stop limiting the outward movement of the plate in the displacement operation.

12. In a window structure, the combination with upright side members each having an inner and outer wall, said inner walls having longitudinal guideways, sash elements adjustably mounted in said guides, inner and outer sill plates extending transversely between said side members and intermediate the ends of the latter and each intersecting the inner walls of said members, and guide means adjustably supporting said plates, said inner plate being displaceable inwardly and said outer plate being displaceable outwardly to leave the longitudinal guideways of said inner walls unobstructed for adjustment of the sash elements to alternative positions between the side members above and below said plates.

13. In a window structure, the combination with upright side members each having an inner and outer wall, said inner walls having longitudinal guideways, sash elements adjustably mounted in said guides, inner and outer sill plates extending transversely between said side members and intermediate the ends of the latter and each intersecting the inner walls of said members, guide

means adjustably supporting said plates, said inner plate being displaceable inwardly and said outer plate being displaceable outwardly to leave the longitudinal guideways of said inner walls unobstructed for adjustment of the sash elements to alternative positions between the side members above and below said plates, and stop means for limiting the displacement movements of said plates to prevent accidental retraction of the plates from the structure.

14. In a window structure, the combination with a frame comprising upright side members and transverse upper and lower members connecting said side members and defining the top and bottom respectively of the window opening, said upper transverse member having spaced walls, a sash element adjustably mounted between said side members and adapted in an elevated position to project through an opening in the inner wall of said upper transverse member, and resilient means within the space between said spaced walls for engaging the inwardly projecting portion of said sash to seal the joint between the outer face of said sash and the upper transverse member.

15. In a window structure, the combination with upright side members each having an inner and outer wall, said inner walls having longitudinal guideways and slots paralleling said guides, a sash mounted in said guides and having a portion thereof projecting through said slots into the space between said inner and outer walls, suspension means secured to the projecting portions of said sash, said inner wall being recessed from a side of said slot, a strip adjustable in said recess, and resilient means for forcing said strip outwardly of said recess and into engagement with the opposite side of said slot to thereby seal that portion of the slot unoccupied by the projecting portion of the sash, said strip having at least one beveled end portion to provide for displacement of the strip inwardly of its recess when the sash is adjusted in the side members.

16. In a window structure, the combination with upright side members having parallel sets of guideways, of upper and lower sash elements mounted in said guideway, recesses in the outer walls of the guideways, a pair of strips in each recess, the strips of each pair being arranged substantially end to end and corresponding individually in length to the heights of the respective sash elements, and resilient means tending to project said strips from their recesses whereby said strips are effective either to extend completely across and seal the guideways or to engage the sides of the sashes to provide a seal for the joints between the said sashes and the respective guideways.

17. In a window structure, the combination with upright side members having parallel sets of guideways, of upper and lower sash elements mounted in said guideway, recesses in the walls of the outer guideways, a pair of strips in each recess, the strips of each pair being arranged substantially end to end and corresponding individually in length to the heights of the respective sash elements, and resilient means tending to project said strips from their recesses whereby said strips are effective either to extend completely across and seal the guideways or to engage the sides of the sashes to provide a seal for the joints between the said sashes and the respective guideways, the ends of said strips being beveled to provide for automatic inward displacement thereof when the said sashes are adjusted in their guideways.

18. In a window structure, the combination with upright side members having longitudinal slots, of a sash slidably mounted between the uprights and having portions projecting into said slots, sealing means adjustably supported in said side members and normally resiliently engaging the sides of said projecting sash portions, said means being adapted to substantially completely close the slots when the said sash is adjusted in	the guides to a position in which the said sash projections are displaced beyond the ends of said sealing means, and means operative automatically when the sash is returned to a position in which the sash projections enter the slot areas embraced by the sealing means for displacing the sealing means from the slot-closing position.
10	EARLE NELSON EDWARDS. 85
15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150