Sept. 25, 1951 E. PEREMI ET AL 2,569,386

SEALING DEVICE

Original Filed Feb. 14, 1946 5 Sheets-Sheet 1

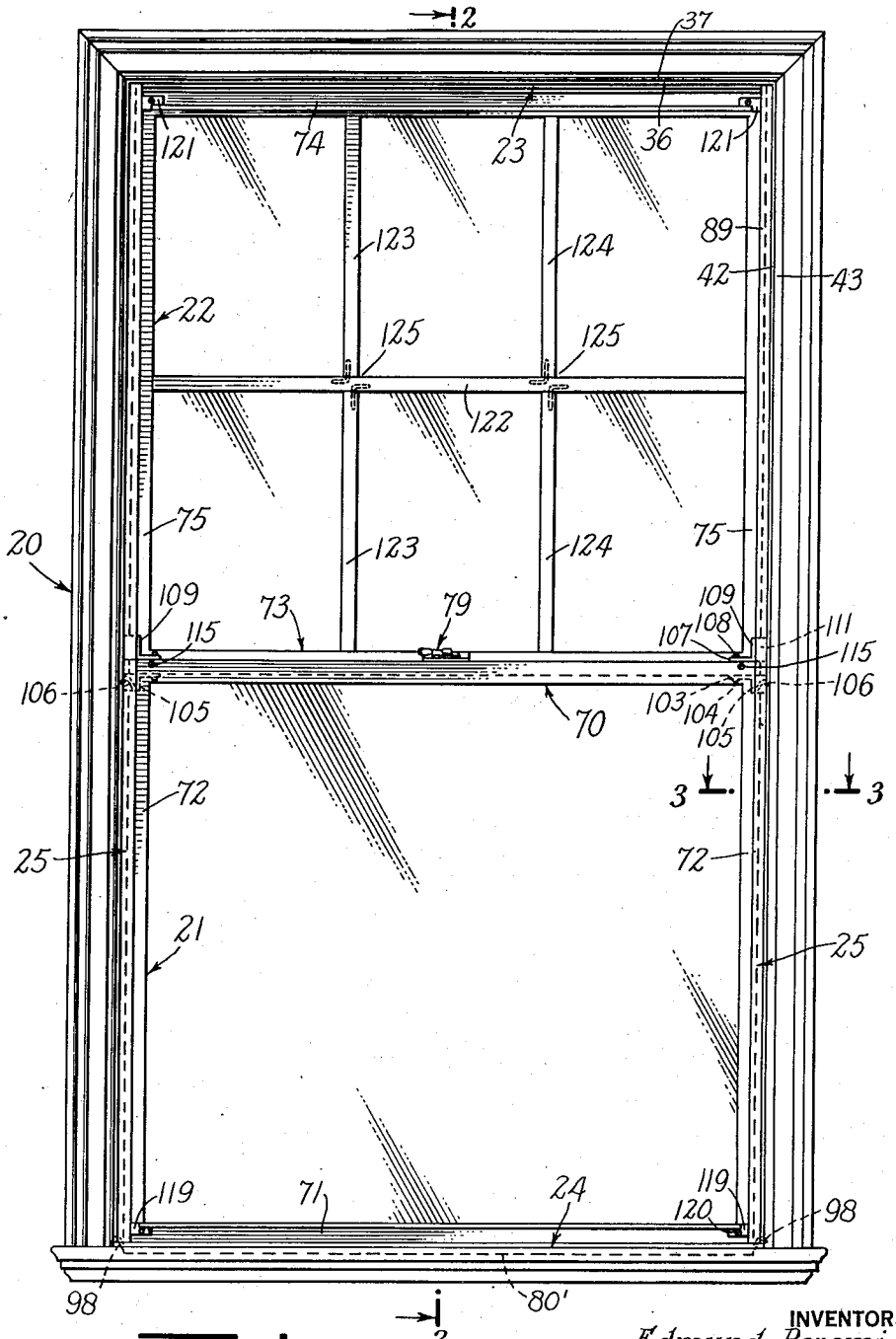


Fig. 1.

INVENTORS
Edmund Peremi
Henry Weimann

BY Curtis, Morris & Safford

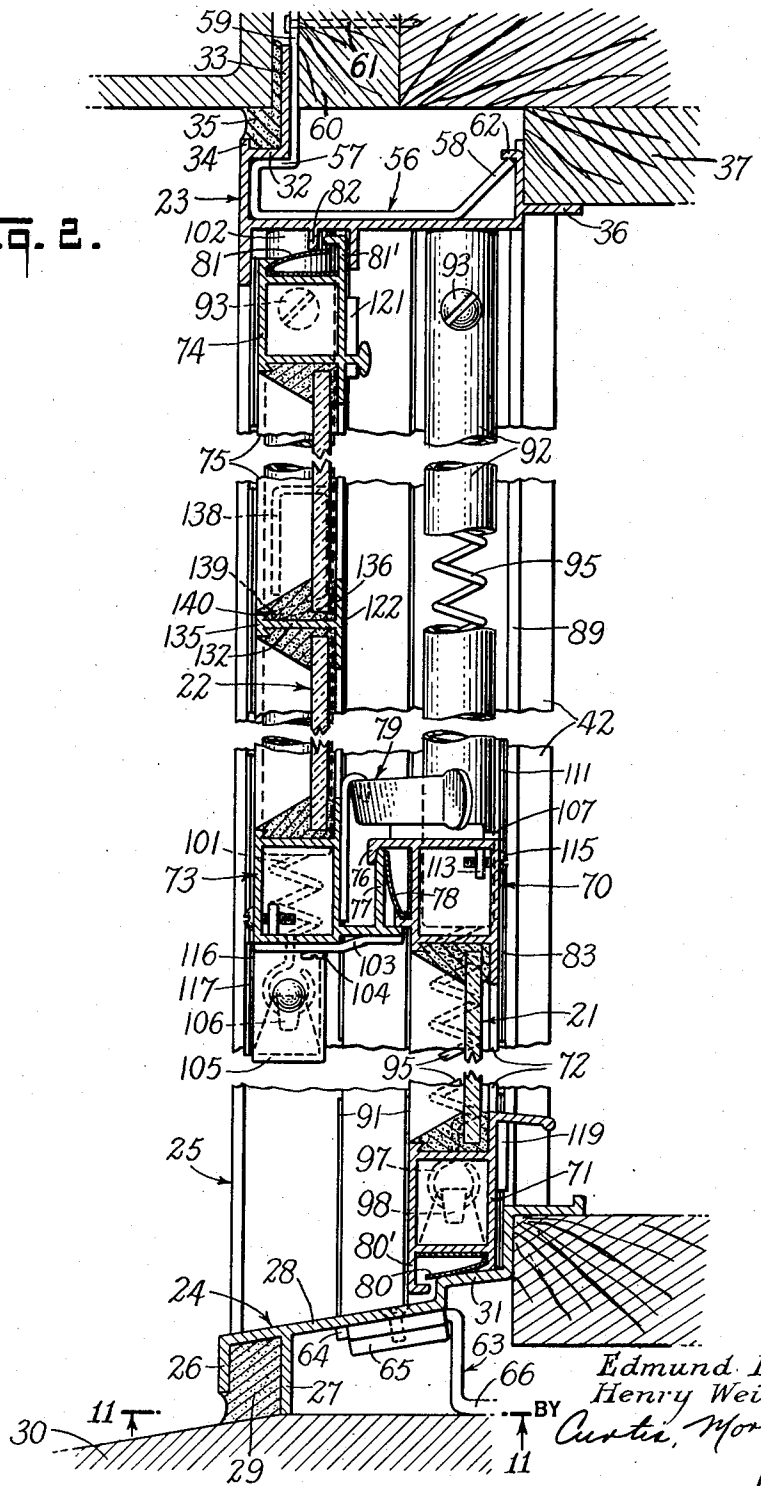
ATTORNEYS

Sept. 25, 1951 E. PEREMI ET AL 2,569,386

SEALING DEVICE

Original Filed Feb. 14, 1946 5 Sheets-Sheet 2

Fig. 2.



INVENTORS
Edmund Peremi
Henry Weimann
BY Curtis, Morris & Safford
ATTORNEYS

Sept. 25, 1951 E. PEREMI ET AL 2,569,386

SEALING DEVICE

Original Filed Feb. 14, 1946 5 Sheets-Sheet 3

Fig. 3.

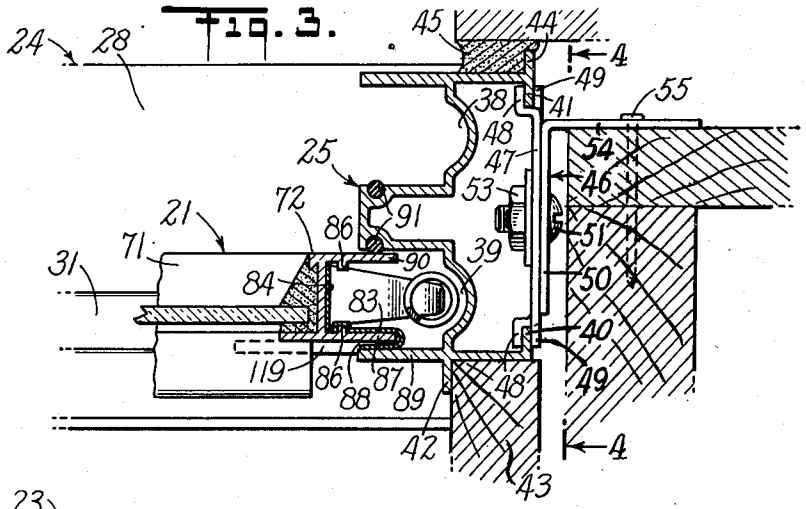


Fig. 5.

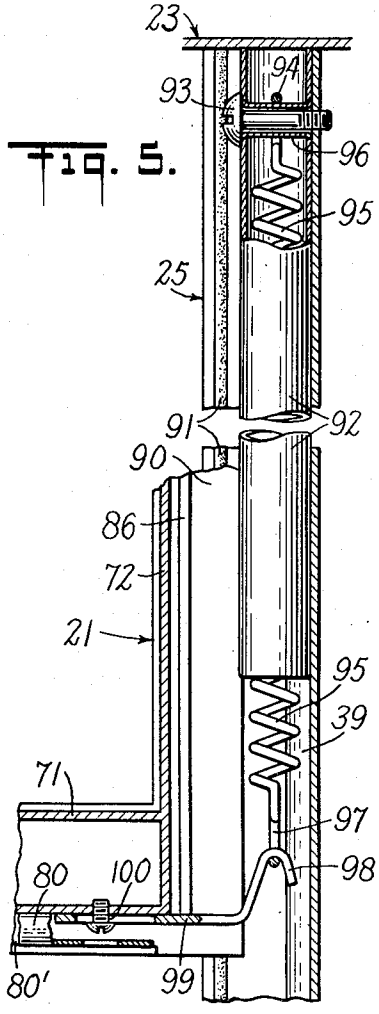


Fig. 4.

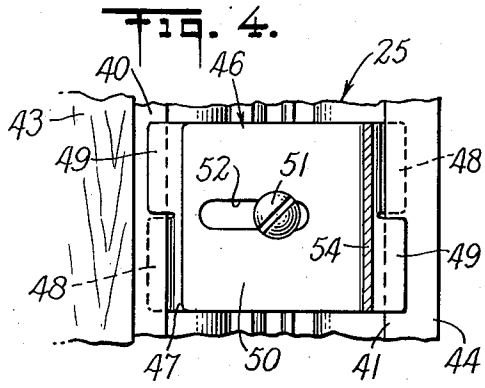
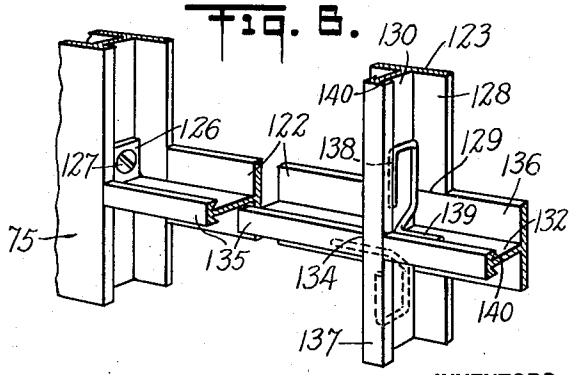


Fig. 6.



INVENTORS
Edmund Peremi
BY Henry Weimann
Curtis, Morris & Safford
ATTORNEYS

Sept. 25, 1951 E. PEREMI ET AL 2,569,386

SEALING DEVICE

Original Filed Feb. 14, 1946 5 Sheets-Sheet 4

Fig. 7.

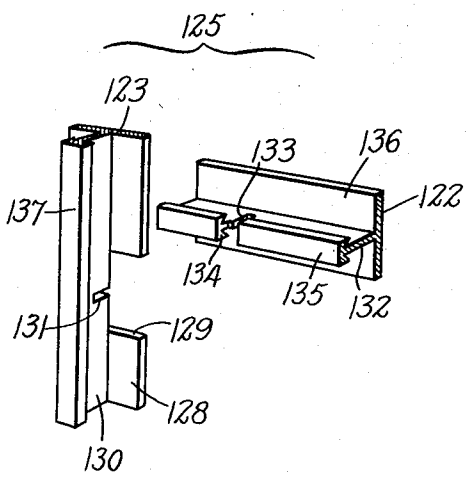


Fig. 14.

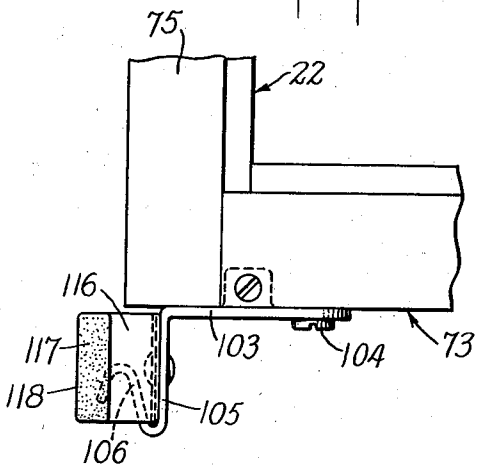


Fig. 15.

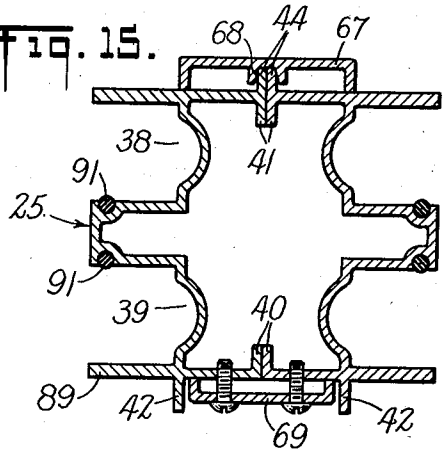
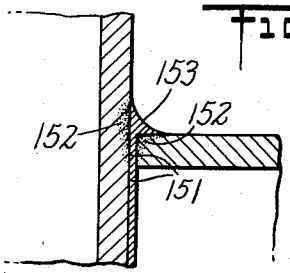


Fig. 16.



INVENTORS
Edmund Peremi
BY Henry Weimann
Curtis Morris & Safford
ATTORNEYS

Sept. 25, 1951 E. PEREMI ET AL 2,569,386

SEALING DEVICE

Original Filed Feb. 14, 1946 5 Sheets-Sheet 5

Fig. 8.

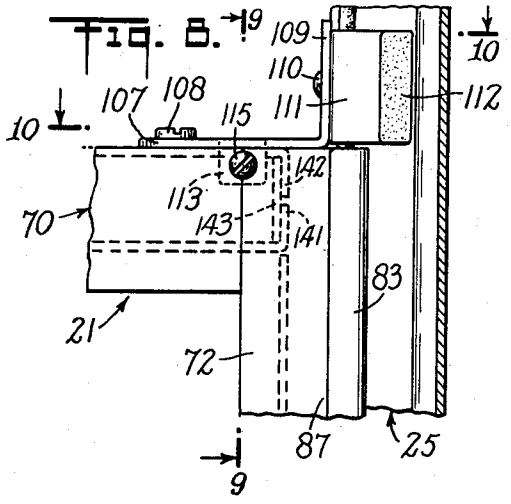


Fig. 9.

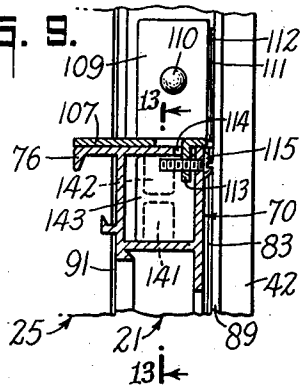


Fig. 10.

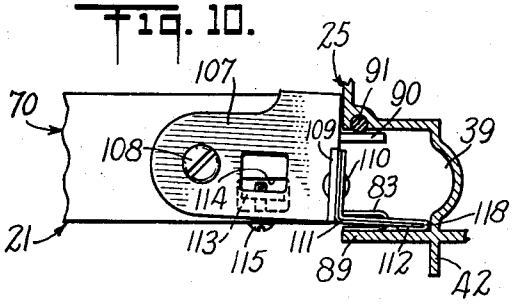


Fig. 13.

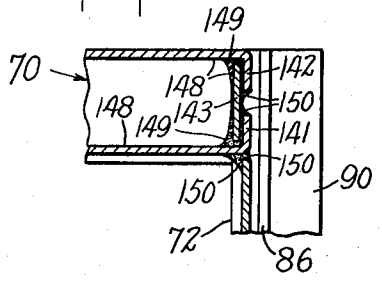


Fig. 11.

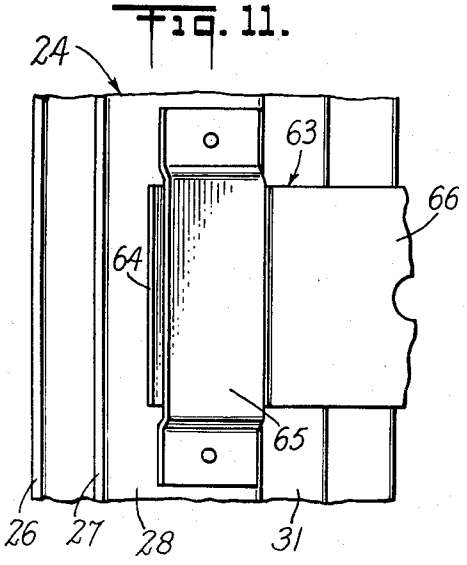
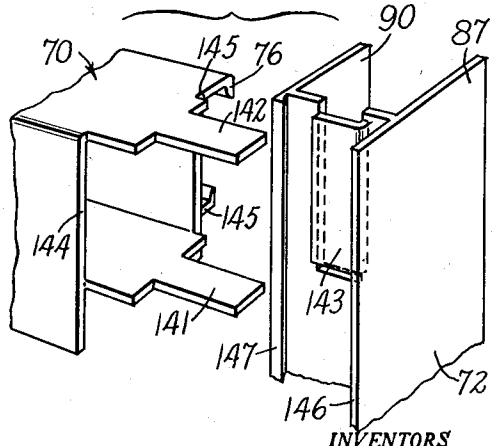


Fig. 12.



INVENTORS
Edmund Peremi
BY Henry Weimann
Curtis, Morris & Safford
ATTORNEYS

Patented Sept. 25, 1951

2,569,386

UNITED STATES PATENT OFFICE

2,569,386

SEALING DEVICE

Edmund Peremi, Bayside, N. Y., and Henry Weimann, Brentwood, Mo., assignors, by mesne assignments, to General Bronze Corporation, Garden City, N. Y., a corporation of New York

Original application February 14, 1946, Serial No. 647,560. Divided and this application June 8, 1948, Serial No. 31,805

3 Claims. (Cl. 189—65)

1

The subject matter of this application is divided out of our copending application Serial No. 647,560, filed February 14, 1946 now Patent No. 2,473,298 issued June 14, 1949.

This invention relates to a metal window sash and frame construction.

An object of the invention resides in the provision of a window frame and sash construction that lends itself to standardization to such an extent that the frame may be used with various window opening constructions and so that the muntin patterns may be arranged or rearranged by the builder after the window frames and sashes have been delivered to the job.

A still further object of the invention resides in an improved construction for the corners of the sash and frame wherein the meeting members are securely locked together and are sealed against leakage.

It is another object of the invention to provide, in such a construction, one type of frame anchor that is constructed and arranged for attachment to the sheathing or to the masonry of the building construction as the particular case requires, and to provide other types of frame anchors that will adapt themselves to window openings of different construction.

Another object of the invention resides in the provision of window balancers that are so constructed and associated with the sashes that the raising and lowering of the sashes readily may be accomplished, with the application of little force, and in so associating these balancers with spring equalizers that the sashes will be maintained in their various raised or lowered positions.

A still further object of the invention lies in the provision of novel weather stripping that is so constructed and arranged that it will seal the sashes in the frame against leakage even under extremely adverse weather and wind conditions and regardless of the usual dimensional frame variations.

With these and other objects in view, such as will appear as this description progresses, the invention resides in the combination and arrangement of parts illustrated in the drawings, described in the specification and recited in the claims.

In the drawings, wherein we have shown one form of the invention:

Figure 1 is a vertical elevation of the inside of a window frame and sashes constructed in accordance with our invention;

Figure 2 is an enlarged fragmentary sectional elevation on line 2—2 of Figure 1;

Figure 3 is an enlarged fragmentary horizontal section on line 3—3 of Figure 1;

2

Figure 4 is a sectional view on the line 4—4 of Figure 3;

Figure 5 is an enlarged fragmentary elevation, partly in section, showing the method of attaching a window balancer to the lower sash and the window frame, the lower sash being shown in a partly raised position;

Figure 6 is a fragmentary perspective view of a typical muntin construction;

Figure 7 is an exploded view showing the manner in which the muntins are secured together at their intersection;

Figure 8 is an enlarged fragmentary elevation, partly in section, of an upper corner of the lower sash;

Figure 9 is a vertical sectional view on line 9—9 of Figure 8;

Figure 10 is a horizontal sectional view on line 10—10 of Figure 8;

Figure 11 is a bottom plan view on line 11—11 of Figure 2, showing the attachment of the anchor to the sill;

Figure 12 is a large fragmentary exploded perspective view of a corner of the sash;

Figure 13 is a sectional view showing the manner of securing the corners of the sashes together;

Figure 14 is a fragmentary view of a lower corner of the upper sash showing the mounting of the spring attachment and the spring equalizer;

Figure 15 is a fragmentary view disclosing the manner in which two frames of the construction of this invention may be secured together to enable the placing the windows side by side; and

Figure 16 is a fragmentary sectional view disclosing the means for securing the corners together and for sealing the corners against leakage.

Referring to Figure 1, the window construction, the sashes of which are of the double hung type, comprises a frame 20, a lower sash 21, and a muntined upper sash 22. As disclosed in Figures 2, 3 and 5, the window frame includes a head 23, a sill 24 and jambs 25.

Each of these frame and sash elements may be formed of an extruded aluminum section.

The sill 24 includes flanges 26 and 27, which extend downwardly from the top 28 of the sill to form a horizontal recess for the reception of the caulking 29, whereby the frame may be sealed with respect to the masonry sill 30 of the building structure.

The sill 24 also includes a ledge 31, against which the lower rail of the lower sash abuts when the latter is in its ultimate lower position. The head 23 includes an inwardly extending shoul-

der 32, from which an upwardly extending flange 33 projects. A second and shorter flange 34 cooperates with the flange 33 and the shoulder 32 to form a recess for the reception of the caulking 35. The inner longitudinal side of the head 23 is provided with an extension 36 for the reception of the wood trim 37. Each jamb 25 includes channels 38 and 39 (see Figure 3) adapted, respectively, slidably to receive the upper and lower sashes and to receive the spring balancers and spring equalizers.

Each jamb 25 is also provided with inwardly directed flanges 40 and 41, the purposes of which will later be described. It also includes an extension 42, which is adapted to cooperate with the trim 43. A caulking flange 44 is provided, against which the caulking 45 may be placed.

The head 23, the sill 24 and the opposite jambs 25 are secured together at their adjacent ends by means later to be described, so that the frame becomes, in effect, an integral unit of standard dimensions that can be stocked in different sizes by suppliers of building material and yet that can be adapted to various building constructions.

In order that the head 23 of the window frame may be secured to different types of building constructions, we have provided one type of anchor that may be secured to the stud or to the masonry, depending upon which is available for securement, and other adjustable types of anchors that will accommodate themselves to different types of window openings.

Referring to Figures 3 and 4 of the drawings, we have illustrated the anchor for the jambs of the window frame. In this construction an anchor is pivotally and adjustably attached to each jamb so that it may be adjusted vertically, transversely and angularly to assume positions for attachment to the sheathing or to the masonry.

Describing now this structure and its associated parts:

Each of the jambs 25 is provided with an anchor 46, by which it can be attached to the building structure. This anchor 46 includes an inner plate 47 having inwardly struck lips 48 which, with the adjacent edges 49 of the body of the plate 47, slidably embrace the jamb flanges 40 and 41, so that the anchor 46 may be adjusted vertically on the jamb to the desired position for attachment to the building structure.

An outer plate 50 is adjustably fastened to the inner plate 47, by means such as a screw 51 which, as shown in Figure 4, extends through a slot 52 in the plate 50, and through a hole in the inner plate 47. The outer plate 50 may be secured in its adjusted positions on the inner plate 47 by means of a nut 53 which cooperates with the screw 51 for such securement.

Thus it will be seen that the plate 50 may be adjusted horizontally and angularly with relation to the plate 47, and that the plate 47 may be adjusted vertically for proper positioning in respect of the sheathing or masonry and secured in its various adjusted positions.

Extending outwardly from the plate 50 (see Figure 3) and in angular relation thereto is an attaching flange 54 by means of which the anchor may be secured to the sheathing by suitable means such as a screw or nail 55 when such sheathing is available for attachment.

When it is desired, however, to attach the anchor 46 to the masonry rather than to the sheathing the screw 51 may be loosened and the outer plate 50 moved horizontally and angularly to adapt itself to the masonry, after which the screw may be tightened and the anchor will be secured tightly to the window frame.

Thus it will be seen that the anchor 46 may be attached to the sheathing of the building structure when desired or necessary, or to the masonry when desired or necessary. This construction, of course, lends adaptability to the window frame so that it may be used in building constructions that have different types of window openings.

The head, sill and jambs are, also, each provided with adjustable anchors for securement of the window frame to the window opening. As shown in Figure 2, the head 23 has an anchor 56 slidably supported therein for lateral adjustment. This head anchor includes a ledge 57 adapted to underfit the ledge 32 of the head 23. This anchor 56 is provided with an upwardly extending plate 59 which may be secured to the sheathing 60 by a suitable means such as a nail 61. The anchor is also provided with an upwardly extending flange 58 that is adapted to engage beneath and have a slight degree of sliding movement beneath the lip 62 which maintains the anchor in assembled relation with the head.

The sill 24 is also provided with an anchor 63. This anchor includes a tongue 64, slidably engaged in a bracket 65 that is secured to the under side of the sill 24. Anchor 63 also has a lower plate 66 for attachment to the studding or masonry by any suitable means. Thus the anchor 63 and the window frame are capable of relative movements to assist in the adaptation of the window frame to the particular window opening with which it is used.

With this construction it will be seen that the frame may be secured to the building structure by anchors which afford sufficient adjustment to permit the use of the frame with various constructions of window frame openings and for attachment to the sheathing, studding or masonry.

In the standardization of the window frame we have so constructed the frame that several may be assembled to produce a row of windows without altering the structure of the frames.

Referring to Figure 15, which shows adjacent portions of two window frames assembled in a row, and to Figure 3, it will be seen that the flanges 40 and 41 on the mullions may be assembled with corresponding flanges of an adjacent window frame in an abutting relation (see Figure 15). To secure these two frames together we have provided a cover plate 67, which has a chamfered groove 68, which serves to force the flanges 44 together and to maintain them in their assembled and cooperating relationship. Also at the back of the mullion a filler strip 69 of wood or metal is disposed between the adjacent extensions 42 (see Figure 15) and secured to the mullion by any suitable means, the strip serving to hold the inner portion of the window frames in alignment with each other.

Each of the sashes 21 and 22 includes upper and lower rails and vertical side rails, which rails may be formed of extruded sections, and each being flanged so as to provide weather stripping and glazing channels.

The lower sash 21 (Figure 2) comprises an upper or meeting rail 70 and a lower rail 71, both of which are, preferably, of tubular form and may be of extruded aluminum, and side rails 72 which are, preferably, of channel form and may, also, be of extruded aluminum.

Similarly the upper sash 22 comprises a lower or meeting rail 73 and an upper rail 74, both, preferably, of extruded aluminum and of tubular form, and side rails 75, which latter are preferably of channel form and of extruded aluminum. The meeting rails 70 and 73 are flanged as at 76 and 77 for interengagement and to provide an opening for the reception of a metallic weather stripping 78, which is carried by the meeting rail 70.

The resilient weather stripping 78 serves to normally maintain the flanges 76 and 77 in interengaging relationship when the sashes are closed and to seal the joint between the meeting rails of the sashes even when there is relative movement between the flanges 76 and 77.

The meeting rails also carry the complementary parts of the conventional sash fastener 79.

The lower rail of the lower sash 21 is provided with an extension 80' to form a channel in the lower sash of this rail, which extension is normally spaced from the sill top 28 and the ledge 31. A resilient weather stripping 80 is mounted in this channel and is adapted to engage said ledge 31. The upper rail of the upper sash 22 includes an extension 81' and is provided with a channel for receiving a resilient weather stripping 81. The head of the frame is also provided with a flange 82. Normally the end of the resilient weather stripping 80 engages the inturned portion of the extension 80' and the end of the weather stripping 81 engages the out turned portion of the extension 81'. However, when both the upper and lower sashes are closed the weather stripping 80 engages, as has been heretofore pointed out, with the ledge 31 while the weather stripping 81 engages with the flange 82, thus sealing the spaces between the lower rail of the lower sash and the sill, and the upper rail of the upper sash and the head.

The provision of these resilient weather strips 80 and 81 and their engagement respectively with the ledge 31 and the flange 82 insures a sealing at these points irrespective of the normal dimensional variations encountered in the manufacture of the sashes and frame.

Each of the side rails of the sashes is provided with a weather stripping 83 that is formed (see Figures 3 and 10), preferably, of polished resilient stainless steel so that it will not drag and mar the aluminum surface with which it contacts when the frame is constructed of aluminum. This weather stripping is secured to the side rail by means of a portion 84 that is sprung into a channel formed by beads 86 on the side rail. A portion of this weather stripping surrounds the flange 87 on the side rail of the sash and is spaced at 88 from the flange 87 so as to seal the joint between the sash and the adjacent portion 89 of the jamb, as illustrated in Figure 3, and to urge the sash toward the opposite side of the jam channel to effectuate a seal at this point and to prevent rattling.

Each of the sashes is also provided with an extending flange 90 which engages a wire insert 91 formed preferably of self-lubricating metal, such as disclosed in United States Letters Patent 2,250,723, issued to Edmund Peremi and Louis Toth on July 29, 1941, and which insert 91 is carried by the parting strip of the jamb 25.

Thus the sash and frame are not in direct engagement with each other but, because of the cooperation between the weather stripping 83 and the insert 91 and the urging of the rail into engagement with the insert by the resilient weather stripping, the space between the sash and the frame is sealed against leakage.

As hereinbefore noted, the invention includes spring balancers which cooperate with spring equalizers to permit the sashes easily to be moved and yet positively to be maintained in adjusted positions. Thus, as shown in Figures 3 and 5, jamb channel 39 has disposed therein a cylinder 92 which is attached to the jamb by suitable means, such for instance, as follows: A screw 93 extends through a bushed opening in the cylinder 92 and is threaded into the wall of the jamb adjacent the upper end of the latter. The upper end 94 of a coil spring 95 is attached to the bushing 96. This spring extends downwardly, freely, through the cylinder 92 and is, at its lower end, attached at 97 to the hook 98. This hook 98 is on the end of a strip 99 that is adjustably secured to the bottom rail 71 of the lower sash 21 by means of a screw and slot arrangement 100, which screw is reached through an opening in the weather stripping 80.

It will, of course, be understood that the opposite side of the sash 21 is provided with a similar balance spring arrangement.

Referring, now, to Figure 2, it will be seen that the upper sash is also provided, at each side, with a similar spring balancer. As illustrated in Figure 2, the upper end of this spring 101, and its tubular housing 102, are secured to the adjacent jamb adjacent the upper end of the latter in a manner similar to that described in connection with Figure 5. The lower end of each of these springs 101 is attached to the lower or meeting rail of the upper sash in the following manner: A plate 103 is secured to the lower surface of the meeting rail of the upper sash by means such as a screw 104. An extension 105 terminates in a hook 106 to which the coil spring 101 is attached (see Figures 2 and 14). Thus both the upper and lower sashes are provided with spring window balancers.

The relation between the tension of the sash balancing springs and the weight of the sashes is such, preferably, that the sashes will be supported substantially midway between their open and closed positions.

In order that the sashes may be maintained in their closed positions and in various other open positions, we have provided sash balancer equalizers at opposite sides of the upper rail of the lower sash and at opposite sides of the lower rail of the upper sash.

Referring to Figures 8 and 10, which illustrate an equalizer on the upper or meeting rail of the lower sash, the equalizer includes a plate 107 which is secured to the upper rail of the lower sash by means of a pivot, such as a screw 108. A portion of the plate 107 is bent upwardly as at 109 and has permanently attached thereto, by suitable means such as a rivet 110, a resilient bearing member 111 that extends into the adjacent channel of the window frame and is adapted to contact with the adjacent wall of the frame as, for instance, the inner wall of the portion 89 disclosed in Figure 10. At the point of contact the bearing member is provided with a self-lubricating metal cover 112. In order that the pressure exerted by this cover 112 on the adjacent portion of the frame may be varied, we have provided the plate 107 with a downwardly extending lip 113 (see Figure 9) which projects through an opening 114 in the top of the meeting rail of the lower sash. An adjusting screw 115 passes freely through the vertical face of the

meeting rail of the lower sash and is in screw-threaded engagement with the lip 113. Thus, by means of this screw 115, the position of the bearing member 111 and the force exerted by its cover 112 against the frame may be varied to increase or decrease that force and with the assistance of screw 108 will maintain the equalizer in its adjusted position. In this way the tension of the spring balancers of the lower sash may be equalized with the result that the sash may be raised and lowered with ease and yet will be maintained in its adjusted positions by means of the spring equalizers.

The lower or meeting rail of the upper sash is provided with similar equalizers, as illustrated in Figure 14, the principal difference between the two forms of equalizers being that the bearing member 116 on each upper sash equalizer and the cover 117 are carried by the extension 105 of the plate 103 which terminates in the spring engaging hook 106. It might be here noted that the edge portion 118 (see Figure 10) of the covers 112 and 117 engage the adjacent portion of the frame and assist in correctly positioning the sashes within the frame against sidewise movement.

The lower end of each vertical rail of the lower sash is provided with a detachable block 119 of self-lubricating metal, which is secured to the rail by suitable means, such as a screw 120 and the upper portion of each of the side rails of the upper sash is provided with a similar block 121 that is similarly attached.

These blocks are in close proximity to the adjacent jamb faces to properly position the sash against undue sidewise movement.

When it is desired to install a sash within the frame the guide blocks 119 and the spring equalizers are removed. One side rail of the sash is inserted deeply into the jamb channel such as 38 or 39 which permits the other side rail to clear the opposite side of the frame. This latter side of the sash is then pushed into alignment with the corresponding channel in the frame and the sash then is centered. The blocks and the spring equalizers are then placed and secured.

When it is desired to remove the lower sash the springs are disengaged from the hooks 98. The screws 100 are then loosened and the hooks backed into the channels of the sash.

The blocks and the spring equalizers on the lower sash are then removed. One rail of the sash is moved deeply into the channel 39 of the frame and the opposite side of the sash is then swung outwardly, which permits the withdrawal of the sash from the channel 39.

When the upper sash is to be removed it is only necessary to release the springs and to remove the guide blocks and the spring equalizers inasmuch as the spring hooks are an integral part of the equalizers.

In order that the muntins may be arranged in different designs by the builder on the job we have provided for various arrangements of the muntins in the sash. For illustrative purposes we will describe the muntin arrangement in connection with the upper sash (see Figure 1). In this arrangement a horizontal muntin 122 and vertical muntins 123 and 124 are provided. At their points of intersection 125 these muntins are interlocked in the manner illustrated in Figures 6 and 7, as will later be described. Each of the muntins, where it contacts the rail of the sash, is provided with a lip 126 (see Figure 6) and at these points the rails have holes formed therein for the reception of self-threading screws 127. Thus the sash may be given the muntin design illustrated in Figure 1. However, so that this muntin design may be changed by the builder on the job, additional holes are formed in the rails of the sash. For instance, the sash may be provided with a hole at the points 126, which will permit the use of one horizontal and one vertical muntin. Of course additional holes in the rails of the sash may be provided to make it possible to use other muntin patterns.

Where the muntins intersect, as for instance at 125, the muntins are secured together. This intersection and securing together of the muntins is accomplished by the following means. For illustrative purposes we will describe the muntin intersections shown in Figure 6, and in connection with this description will refer also to Figure 7. The flange 128 of the muntin 123 is recessed at 129 and the web 130 is recessed at 131, the recesses 129 and 131 communicating as illustrated in Figure 7. The web 132 of the muntin 122 is recessed at 133, which recess communicates with a recess 134 in the glazing bead 135. Thus when the two muntins are assembled the flange 136 of the muntin 122 will lie within the recess 129 of the muntin 123 and the webs 130 and 132 of the muntins 122 and 123 will interlock. Because of the presence of the recesses 131, 133 and 134, the glazing bead 137 of the muntin 123 will lie within the recess 134 of the muntin 122. Thus the muntins will be interlocked at their points of intersection with their faces flush.

To preclude separation of the muntins at their intersections each intersection is provided with a pair of spring clips (see Figure 6), which are designed to forcibly maintain the muntins in their assembled positions. The free ends 138 and 139 of each of these clips are engaged beneath the lip 140 of the adjacent glazing bead to maintain the clips in position. The clips exert sufficient force against the muntins to maintain the muntins in their assembled positions, but they may be removed to permit the disassembling and rearrangement of the muntins.

To insure the rectangular form of the sashes during handling prior to installation and after installation, we have provided means for securing the corners of the rails of the sashes together in such manner that not only will the rectangular form of the sashes be maintained but the corners will be leak-proof.

Referring to Figure 12 for illustrative purposes, the sash rail 70, for instance, is provided with outwardly extending tenons 141 and 142, which are adapted to be bent to engage with and interlock with a mortise 143 on the side rail 72, with the edges 144 and 145 of the rail 70 respectively abutting the edges 146 and 147 of the side rail 72. The tenons 141 and 142 are secured in their interlocked relationship with the mortise 143 by a joining metal.

In Figure 13 we have illustrated the relationship of this joining metal and the aluminum rails of a sash at a corner of the sash. In this figure it will be seen that the joining metal, after being combined with the aluminum structure at the corner of the sash in a manner later to be described, bonds the meeting portions of the ends of the rails of the sash together and forms a leak-proof joint. It will be seen that on the exposed surfaces 148 of the rails the joining metal forms a leak-proof seal 149, which is, in effect, a rounded corner. The joining metal also bonds

the corners together at the various points of contact between the corner elements of the rails as at **150**. Thus the joining metal not only bonds the corners of the rails of the sashes together, but it also forms a leak-proof joint.

It is, of course, to be understood that the bonding and leak-proofing of the corners of the window frame may be accomplished in a similar manner.

Describing, now, the method of forming this bond and accomplishing this leak-proofing, after the ends of the rails or the ends of the elements of the frame have been assembled in abutting relation, such as disclosed in the drawings, or by mitering, coping or lapping, a flux material, preferably in a heavy paste state and made with distilled water, is applied to the area of the joint, which flux material consists of zinc chloride (90% by weight), ammonium bromide (8% by weight) and sodium fluoride (2% by weight). It is to be understood, however, that variation of approximately plus or minus 2% of a percentage of each of the three above named compositions is permissible.

The ammonium bromide and the sodium fluoride will accomplish the de-oxidation of the aluminum. Following the application of the flux above referred to, the joining metal is applied to the joint in the corner angle. This metal may be applied, of course, in a variety of forms, as, for instance, in the form of a rod, and should be applied in sufficient quantity to bond and seal the joint and to round out the corner of the joint.

The joining metal that is used is zinc (99.99% by weight) with such impurities as lead, iron and cadmium (0.01% by weight). After the application of the joining metal as described, the joining metal and the aluminum is brought to a temperature of approximately 650° F. to 700° F. by a suitable method such as by high frequency heating, torch heating or electric resistance heating. When, however, torch heating is used it is advisable to prevent the contact of the flame with the flux.

This heating is continued for a sufficient length of time to insure the fluidity of the joining metal and its flowing into the voids between the aluminum elements as indicated at **151** in Figure 16, and into any voids that occur in the elements themselves, as indicated at **152** in Figure 16, and to build up a rounded corner as indicated at **153** in Figure 16.

Any residual flux is eliminated in a suitable manner, such as by washing in water while the aluminum elements are at an elevated temperature such, for instance, as approximately 250° F.

It will be seen that by this method the joining metal flows into the spaces between the elements of the frame or of the sash at their corners, and upon solidifying bonds these elements together and additionally seals the corners against leakage.

The use of sufficient metal to build up a rounded area at the corners of the sash or of the frame (see Figure 16) additionally strengthens at this point. Moreover the described method of application of the joining metal to the corners is such that the original character of the aluminum will be maintained so that, at the corners of the frame or the sashes, the aluminum of the frame or sash elements will be at least as strong and possess the same characteristics as originally, and additionally will be strengthened by the presence of the joining metal.

When there are any voids in the aluminum elements themselves the fluidity of the joining metal permits the metal to flow into the voids so that the joining metal is not only combined with the surfaces of the elements of the sashes or frame but is also keyed to the elements by that metal which flows into the voids and solidifies.

When we speak of aluminum herein we, of course, intend to include such alloys as are now in commercial use.

While we have illustrated and described the particular form of our invention it is to be understood that various changes may be made within the scope of the claims, and we, therefore, do not wish to be limited to the illustrated form except insofar as limitation is made necessary by the claims.

We claim:

1. In a window construction a jamb having a spaced parting strip and stop flange forming a channel therein, a sash having a side rail slidably mounted in said channel, said rail including a base member and flanges extending into said channel, a self-lubricating member mounted in said parting strip and extending longitudinally thereof in contact with the adjacent flange of said rail, a longitudinally extending bead on the inside of one of said flanges of said rail spaced from the base thereof, a resilient weather strip entrapped between said bead and said base and having a portion extending around the flange of said rail and resiliently engaging between said flange of said rail and said stop flange of said jamb and tending to force said sash rail toward and into contact with said self-lubricating member.

2. In a window construction a jamb having a parting strip and a stop flange forming a longitudinal channel, a sash having a rail slidably mounted in said channel, said rail including a base and spaced flanges, a longitudinally extending bead on the inside of one of said flanges, a weather strip entrapped between said base and said bead and having a portion extending around the edge of the bead carrying flange and between said flange and the adjacent portion of said jamb.

3. In a window construction a jamb having a parting strip and a stop flange forming a longitudinal channel, a sash having a rail slidably mounted in said channel, said rail including a base and spaced flanges, a longitudinally extending bead on the inside of one of said flanges, a weather strip entrapped between said base and said bead and having a portion extending around the edge of the bead carrying flange and between said flange and the adjacent portion of said jamb, and a weather sealing member interposed between the other of said flanges of said rail and the adjacent portion of said jamb.

EDMUND PEREMI.
HENRY WEIMANN.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,663,134	Lane	Mar. 28, 1928
2,234,533	Nolan	Mar. 11, 1941
2,250,723	Peremi et al.	July 29, 1941
2,257,123	Peremi et al.	Sept. 30, 1941
2,304,062	Peremi et al.	Dec. 8, 1942