Aug. 26, 1952 A. STORMS 2,608,277

METAL WINDOW CONSTRUCTION

Filed Nov. 2, 1946 4 Sheets-Sheet 1

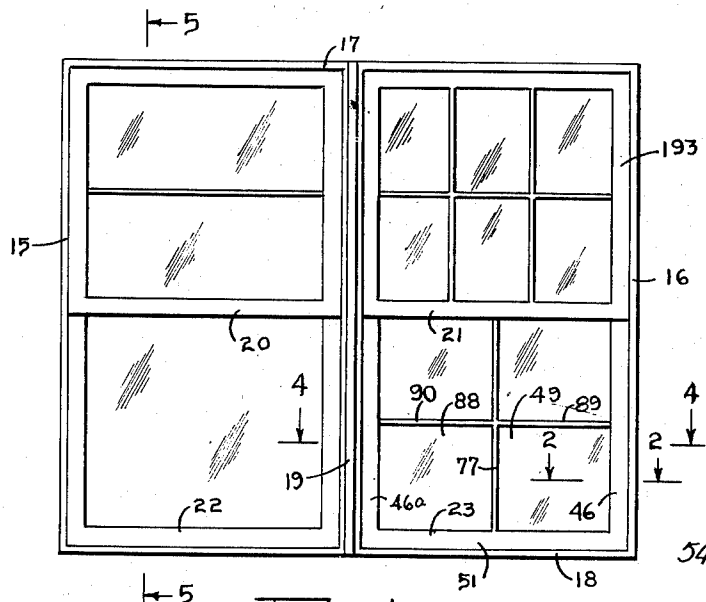


Fig. 1

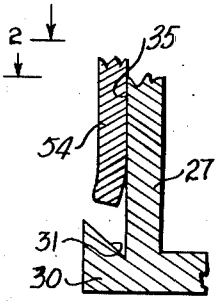


Fig. 2a

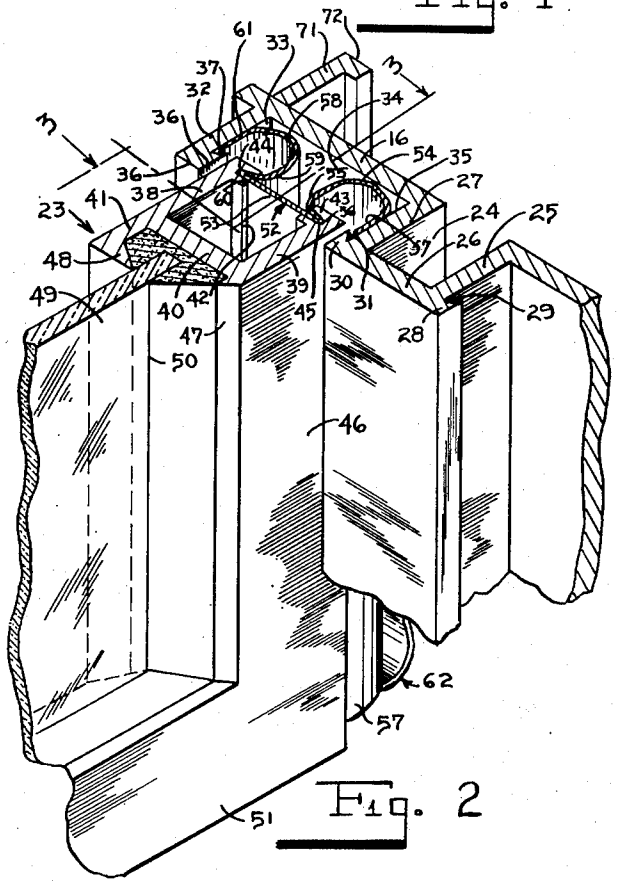


Fig. 2

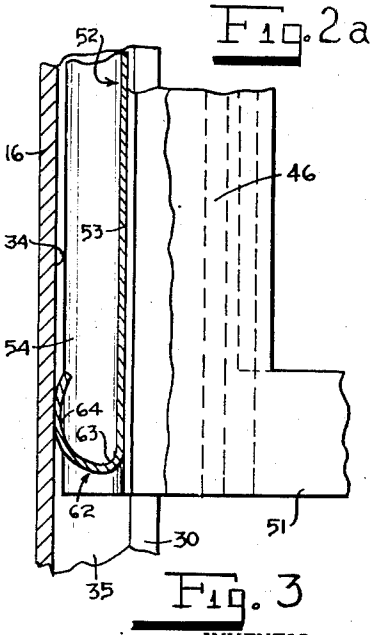


Fig. 3

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METAL WINDOW CONSTRUCTION

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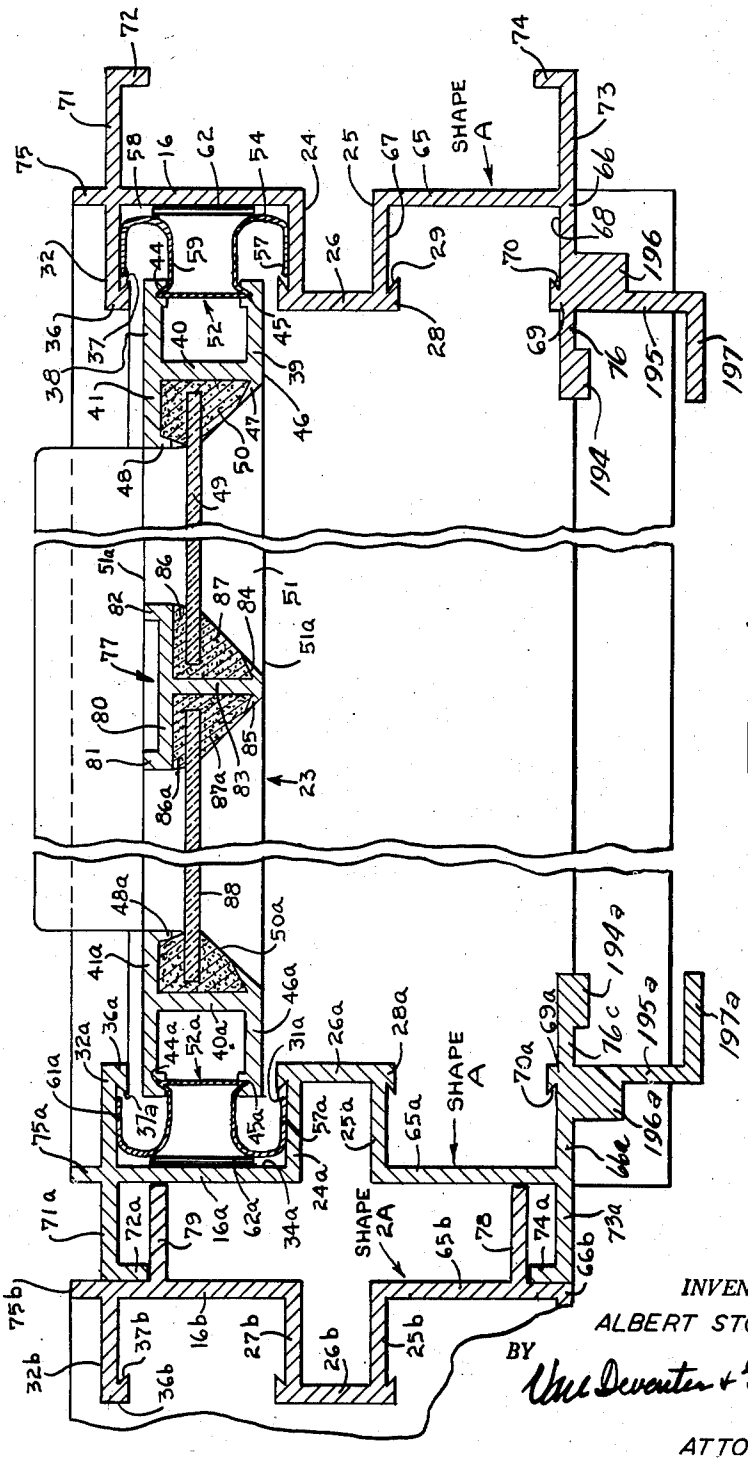


Fig. 4.

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Aug. 26, 1952 A. STORMS 2,608,277

METAL WINDOW CONSTRUCTION

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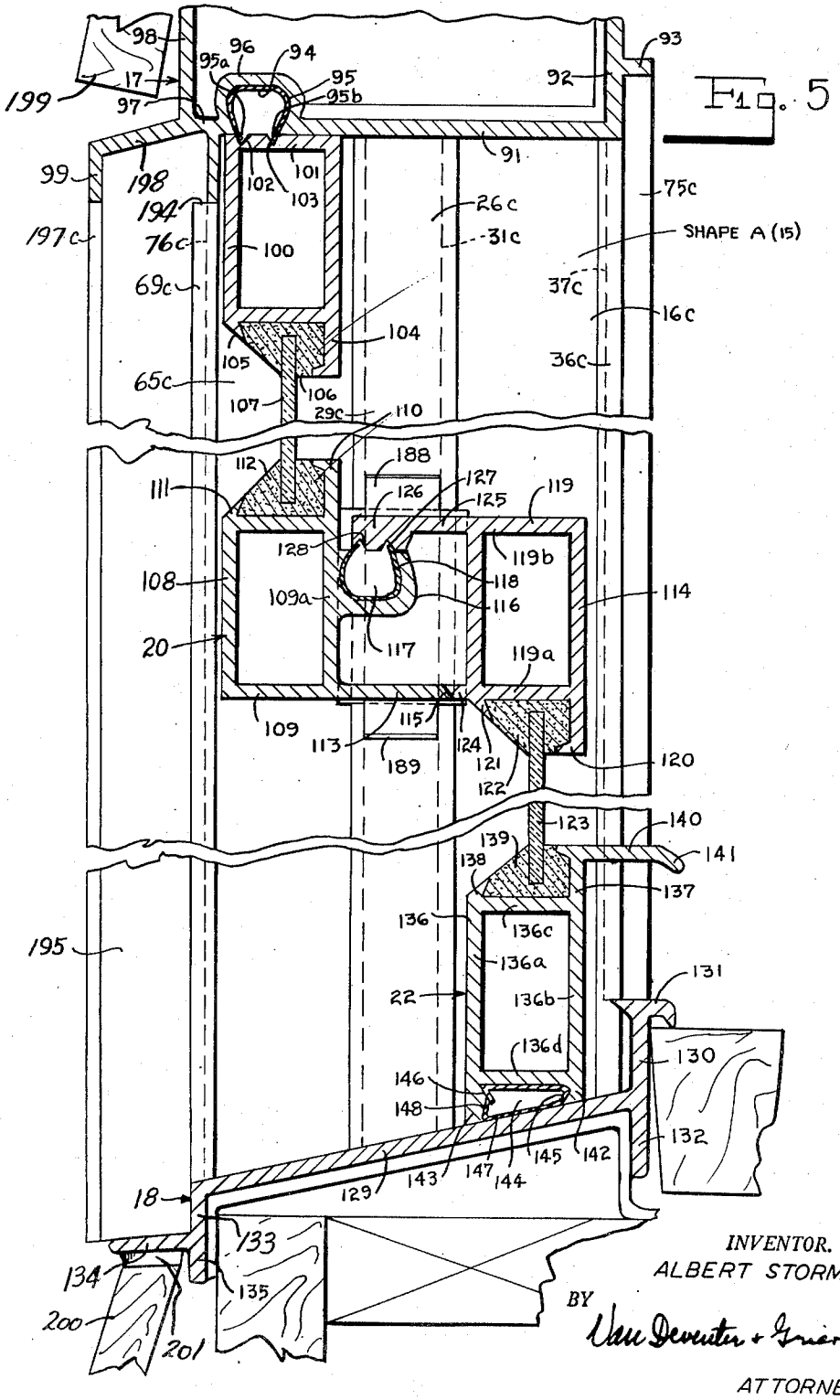


Fig. 5

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Aug. 26, 1952 A. STORMS 2,608,277

METAL WINDOW CONSTRUCTION

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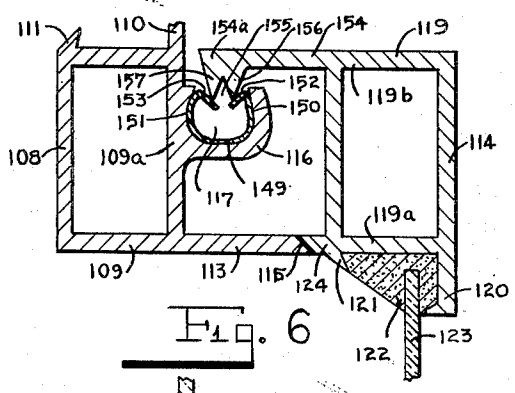


Fig. 6

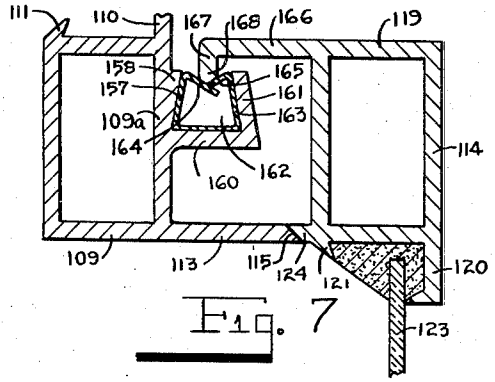


Fig. 7

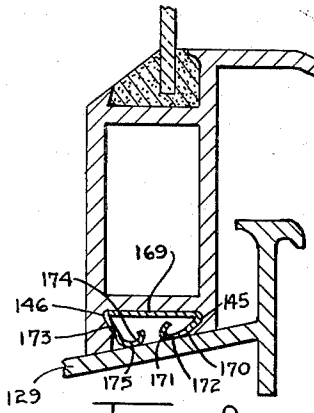


Fig. 8

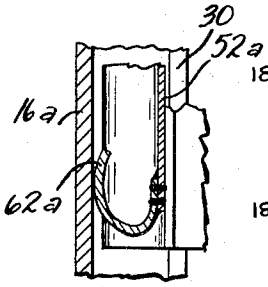


Fig. 3a

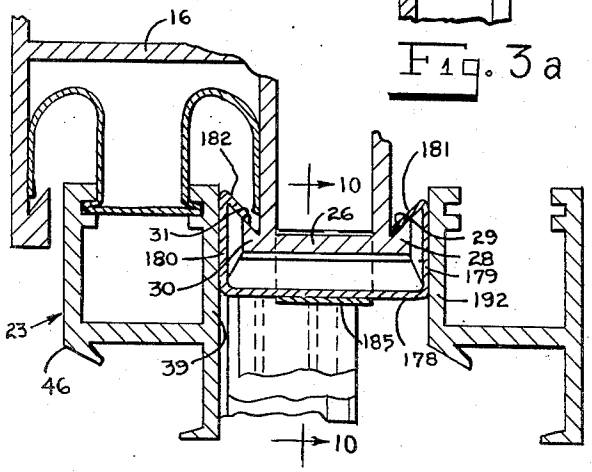


Fig. 9

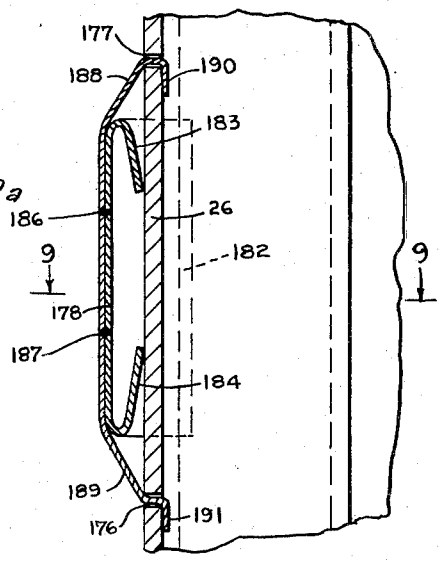


Fig. 10

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2,608,277

UNITED STATES PATENT OFFICE

2,608,277

METAL WINDOW CONSTRUCTION

Albert Storms, Elmhurst, N. Y.

Application November 2, 1946, Serial No. 707,372

2 Claims. (Cl. 189—72)

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This invention relates to improvements in metal window construction and has for an object the provision of a metal window of novel construction and including "weather stripping" means which function both as a means for establishing an airtight connection between the frame and the movable sashes, and obviates the necessity for having weights, cords, chains, etc., to counter-balance the weight of the sashes per se.

A further object of the invention is the provision in a metal window construction of slotted means formed in the vertical edges of the sash members, a weather stripping member supported in said slotted means and having edges cooperating with corresponding vertical V slots formed in the frame of said window and thereby providing two barriers against the passage of air from the outside to the inside, or vice versa.

Another object of the invention is the provision of novel means on the sash members of metal windows for sealing against the weather along the meeting rails.

A further object of the invention is the provision in metal windows of horizontal means in the movable sash thereof for contacting the sill of the frame of said window for establishing a seal therewith when the sash is in its closed position.

Another object of the invention is the provision in a metal window construction of means for establishing a seal between the upper horizontal rail of the upper sash and the head of the frame.

Yet another object of the invention is the provision in metal window construction of a novel check block.

Other objects and advantages of the invention will be apparent to those skilled in the art upon a study of the following specification, and the accompanying drawings.

Referring to the drawings which are given by way of example to illustrate the invention:

Figure 1 is an elevation of a window embodying features of the invention;

Figure 2 is a sectional view in perspective taken along the line 2—2 of Figure 1, and showing my new and improved weather stripping and other details of construction of both the frame and the lower sash;

Figure 2a is an enlarged detail showing the relation of the ends of the weather strip with the V-shaped grooves in the frame;

Figure 3 is a view of the lower corner of one of the sashes showing the tail of the weather stripping frictionally engaging the frame;

Figure 3a is a detailed view showing the tail piece of the weather strip formed separately and

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subsequently spot welded to the weather strip instead of being made integral with the weather strip;

Figure 4 is a sectional plan view taken along the lines 4—4 of Figure 1;

Figure 5 is a vertical sectional elevation taken along the lines 5—5 of Figure 1 and showing details of the weather seals with the sill at the meeting rails and at the head of the frame;

Figure 6 is a sectional view showing a modified form of weather seal at the meeting rails of the sashes;

Figure 7 shows a further modification of the weather seal at the meeting rails;

Figure 8 is a sectional elevation showing a modified form of seal between the bottom rail of the sash and the sill of the window frame;

Figure 9 is a sectional plan view showing my new and improved check block and its relation to the sash frames; and

Figure 10 is a sectional elevation of the check block taken along the lines 10—10 of Figure 9.

Referring first to Figure 1, a double metallic window is shown having jambs 15 and 16, a head 17, a sill 18, and a mullion 19. Within the frame are upper sashes 20 and 21, and lower sashes 22 and 23.

In Figure 2, which is a perspective view taken along the lines 2—2 of Figure 1, the jamb 16 is preferably formed of one piece of material and it has formed integral therewith a channel 24 bounded by sides 25, 26, and 27, which cooperate to form a parting strip. The side 26 has a portion 28 which overhangs the side 25 and has an angular face 29 which meets the outer face of the side 25. The side 26 also has an overhanging portion 30 which includes an angular surface 31 which meets the outer surface of the side 27.

Spaced apart from the side 27 of the parting strip is a web 32 which has an inner surface 33 which together with the surface 34 of the jamb and the inner surface 35 of the side 27, forms a vertical channel the purpose of which will presently be described. The web 32 has a portion 36 which overhangs said channel and has an angular surface 37 which meets the surface 33.

The sash 23 has a stile 46, the cross section of which somewhat resembles an h having parallel legs 38 and 39, a horizontal portion 40, and a vertical portion 41 which is an extension of the leg 38. The leg 38 has formed integral therewith a portion 42 which extends toward a like portion 43 formed integral with the leg 39. Formed within the surface of the portion 42 facing the portion 43, is a longitudinal V-shaped groove 44, and formed within the portion 43,

facing the portion 42, is a like V-shaped groove 45.

The stile 46 has a vertical web 47 generally V-shaped in cross section which forms an extension of the side 39. The portion 41 has an overhanging portion 48 which is also of V cross section and extends toward the front of the stile 46. The edge of this portion forms a support for the glass pane 49. Some glazing compound is placed in the channel bounded by the portions 48, 41, and 40. The glass is then positioned in the frame and pressed to bring it in contact with the sharp edge of the portion 48 following which glazing compound may be added to fill the remainder of the channel (bounded by the portions 40 and 47), and finished off to terminate along a line 50.

A rail 51 of the sash 23 will be presently described in connection with Figure 5.

A weather strip, generally designated by the numeral 52, includes a straight web portion 53. Formed integral therewith is a curvilinear portion 54 the inner end of which is curved at 55 and terminates in a straight portion 56 which at the point where it joins the web 53 is of V cross section and which forms a sliding fit in the groove 45. The outer extension 57 of the curvilinear portion 54 is in frictional contact with the surface 35 and has its edge spaced apart from the angular surface 31. The weather strip also includes a second curvilinear portion 58 which includes a curved portion 59 joining the web 53 to form a V cross section 60 which slidably fits the groove 44. The outer extension 61 of the curvilinear portion 58 is in frictional contact with the surface 33 and has its edge spaced apart from the V formed by the surface 33 and the angular surface 37.

The lower end of the weather strip 52 has a tail 62 which is formed of an extension of the bottom end of the web 53 which is curved at 63 along a comparatively short curve and which is curved at 64 along a curve the radius of which is substantially longer. The tail 62 frictionally engages the surface 34 of the jamb 16 between the parting strip and the jamb web 32. The weather strip is pushed into the grooves 44 and 45 and extends substantially the entire length of the stile 46; therefore, when its complete length has been positioned in the grooves 44 and 45 the portion of the sash does not tend to dislocate it.

In Figure 2*a* the outer extension of the curvilinear portion 54 is shown in enlarged detail to depict its relation to the V formed by the surface 35 and the angular surface 31. It will be noted that the edge of the extension 54 is rounded and actually has two lines of contact with the legs of the V.

The frictional engagement of the rounded edges of the portions 54 and 61 with the surfaces of the V's, effectively form double barriers to the passage of air from the exterior to the interior of a room in which the window is installed. This frictional engagement augmented by the frictional engagement of the tail 62 with the surface 34 of the jamb, eliminates the necessity for supporting the sash by means of springs, weights, ropes, chains, etc. Due to the resilient urge imparted to the surfaces 33, 37, and 31, 35 by the curved portions 58 and 54 respectively, I find that the force necessary to lower or raise the sash is very low and the action is velvety. Also there is no tendency for the sash to slip downwardly due to the vibration produced by heavy traffic along streets adjacent to buildings containing my new and improved window construction.

Although the tail 62 is shown in Figures 2 and 3 as formed integral with the weather strip, this tail may be formed separately, for example, see 62*a* in Figure 3*a*, where it will be noted that the tail 62*a* is spot welded or otherwise secured to the weather strip 52*a*.

Referring to Figure 4, it will be seen that a web 65 is formed integral with the wall 25 of the parting strip and is preferably in alignment with the web 16. The web 65 extends forwardly to join a web 66 which is similar to the web 32.

The web 66 has an inner surface 68 which, together with the inner surface 67 of the side 25 of the parting strip, forms a vertical channel for the upper sash (not shown). The web 66 has a portion 69 which overhangs the channel and has an angular surface 70 which meets the surface 68. The upper sash is adapted to carry a weather strip like the weather strip 52 and the outer extension thereof, corresponding to the outer extension 57, has its edge beveled and in contact with the angular surface 70. Also the other outer extension of said weather strip, corresponding to the outer extension 61, has its edge beveled and in contact with the angular surface 29.

A web 71, as seen in Figure 4, is integral with the webs 16 and 32 and is in alignment with the web 32 and this web has an angular end 72 which is spaced apart from and parallel to the web 16.

Formed integral with the webs 65 and 66 and in alignment with the web 66, is a web 73 the outer end 74 of which is angular, spaced apart from and parallel to the web 65. The angular portions 72 and 74 are also preferably in alignment with and extend toward each other.

A web 75 formed integral with the webs 16, 32, and 71, is substantially in alignment with the web 16, and a web 76 is formed integral with the web 66 and is positioned outside the channel between the end carrying the overhanging portion 69 and the point where the webs 65 and 66 join.

The shape of the integral metallic section above described, and having channels for the upper and lower sash with a parting strip therebetween is designated as shape A. The section or shape in Figure 4 engaged by the stile 46*a* of the lower sash 23 is identical with shape A except that in constructing the window frame this section is turned end for end and, therefore, the two side sections are rights and lefts, so the same numerals appear on the left section except that they are followed by the letter *a*. The left hand section is backed up by a second right hand section designated shape 2A, and they cooperate to form a mullion. Shape 2A is similar to shape A in most respects therefore in Figure 4 all portions of shape 2A, which are identical with the corresponding portions in shape A, are designated by the same numeral followed by the letter *b*, and these portions of shape 2A which are not on shape A, are designated by higher numerals.

In shape 2A the webs 71, 72, 73, and 74, are omitted so that the web 65*b* may member up with or contact with the web 74*a*. Formed integral with the web 65*b* and extending at right angles to the surface thereof, is a web 78 which is closely adjacent to the end of the web 74*a* within the mullion. The web 72*a* contacts the web 16*b* and integral with the web 16*b* and extending at right angles to the surface thereof is a web 79 which is closely adjacent to the web 72*a* laterally, and closely adjacent to the web 16*a* longitudinally.

The stile 46*a* is identical with the stile 39 except that it is the same section turned end for end. It is provided with longitudinal grooves 44*a* and 45*a* which accommodate a weather strip 52*a*, the portion 57*a* of which engages the beveled sur-

face 31a and the portion 61a which engages the bevel 37a, thereby effecting a double seal between the exterior and the interior. The tail 62a of this weather strip frictionally engages the surface 34a of the jamb 16a between the parting strip and the web 32a.

Extending upwardly from the bottom rail 51, and parallel to the stiles 46 and 46a, is a muntin 77. The muntin 77 has a web 80 which is parallel to the axis of the bottom rail 51 and formed integral with the web 80 are short webs 81 and 82 which extend at right angles to the axis of the bottom rail 51 and which terminate on a plane substantially parallel to the inner face 51a of the bottom rail 51. Joining the web 80 intermediate the ends thereof and extending at right angles therefrom is a web 83 which terminates on a plane parallel to the face 51a of the bottom rail 51. Formed integral with the web 83 are feathering webs 84 and 85. The glass pane 49 with a layer of glazing compound 86 therebetween is located against the web portion 80 of the muntin and additional glazing compound 87, the outer surface of which is preferably continuous with the outer surface of the feathering web 84, secures the pane 49 to the muntin 77. Likewise a pane of glass 88 is located by the overhanging portion 48a of the stile 46a. Glazing compound is placed in the channel bounded by portions 48a, 41a, and 40a and finished off to terminate along a line 50a. Between the glass 88 and the web 80 of the muntin is a layer 86a of glazing compound and this is joined by glazing compound 87a the outer surface of which is preferably continuous with the outer surface of the feathering web 85. Likewise the panes 49 and 88 are secured to the horizontal muntins 89 and 90.

The shape 2A forming half of the mullion is engaged by the weather strips in the same manner as described above in connection with the shapes A, and this description need not be here repeated. The shape A shown to the left side of Figure 4 and cooperating with the shape 2A to form the mullion, would be repeated or duplicated (not shown in Figure 4, but hereinafter described in connection with Figure 5) on the extreme left edge of the frame and would form the stile for the second set of windows which cooperate with the shape 2A of the mullion.

Referring to Figure 5, which is a vertical sectional elevation taken along the lines 5—5 of Figure 1, the weather stripping at the sill, at the head, and at the meeting rails, is shown.

The jamb is identical with the left jamb shown in Figure 4 and designated as shape A, and it bears numerals indicating the same elements as shown in Figure 4 excepting that they are each followed by the letter c. The upper end of the jamb 15 is joined to the head 17 and the lower end is joined to the sill 18. Likewise, referring momentarily to Figure 1, the jamb 16 is likewise joined to the head and the sill and intermediate thereof the mullion may be joined to the head and to the sill. The head (Figure 5) has a horizontal web 91 and integral therewith on one end thereof is a web 92 extending upwardly.

The web 92 may have formed integral therewith a web 93 which is parallel to and spaced apart from the web 91. The web 91 near the left side thereof, as seen in Figure 5, has a portion 96 deformed upwardly and this deformed portion embraces a longitudinal cavity 94 to accommodate a weather strip 95, to be presently described. Beyond the portion 96 is a web 97 the lower surface of which is in alignment with the lower surface of the web 91, and this web joins a vertical web 98 which has an offset depending portion 99. The top rail 100 of the upper sash 20 includes an upper horizontal web 101 which has longitudinal V-shaped notches 102 and 103 formed therein. The top rail 100 also includes webs 104 and 105 which accommodate the body 106 for securing the pane 107 therein.

The weather strip is somewhat heart-shaped in cross-section and the lower edges 95a and 95b engage the right and the left edges respectively of the V-shaped notches 102 and 103, and clear the bottoms of said notches, providing two barriers against air passing between the top of the top rail 100 and the lower surfaces of the webs 91 and 97. The lower or meeting rail 108 of the upper sash 20 consists in the main of a rectangular web 109 having formed integral therewith webs 110 and 111 for accommodating the body 112 for securing the pane 107 thereto. Formed integral with the bottom web 109 is a web 113 which extends toward the upper meeting rail 114 of the lower sash 22 and terminates along a beveled line 15. Formed integral with the vertical wall 109a of the rectangular web 109 is a curvilinear web 116 which has a longitudinal channel 117 of generally heart-shaped cross section formed therein. Positioned within this cavity 117 is a weather strip 118 which may be identical with the weather strip 95 described above.

The upper or meeting rail 114 of the lower sash 22 includes a web 119 of rectangular cross-section and it has integral therewith depending webs 120 and 121 which are adapted to accommodate a body 122 for securing the pane 123 thereto. Formed integral with the rectangular web 119 and preferably formed integral with and in alignment with the lower portion 119a thereof is a web 124 the end of which is beveled and the beveled surface contacts the beveled surface 115 of the web 113 when the upper sash is all of the way up and the lower sash is all of the way down.

Preferably formed integral with and in alignment with the upper web 119b is a web 125, the right end 126 of which has parallel spaced V-shaped grooves 127 and 128 formed therein. The free edges of the weather strip 118 engage opposite angular surfaces of the grooves 127 and 128 when the upper and lower sashes are closed thus the weather strip 118 establishes two lines of contact against air passing between the lower meeting rail of the upper sash and the upper meeting rail of the lower sash.

The sill 18 has a web 129 which is inclined to the horizontal so that water falling thereon will drain toward the outside. Preferably formed integral with the web 129 is a vertical web 130 the upper face of which carries a horizontal web 131 which may be shaped as shown or which may have any other desired shape. Formed integral with the webs 129 and 130, and preferably in alignment with and forming a continuation of the web 130, is a depending web 132. Formed integral with the other end of the web 129 is a vertical portion 133 which joins an L-shaped web having an outwardly extending portion 134 and a depending portion 135.

The lower rail of the lower sash 22 includes a generally rectangular web 136 having vertical portions 136a and 136b, an upper horizontal portion 136c and a horizontal lower portion 136d. Preferably continuous with the webs 136b and 136a respectively are webs 137 and 138 which

accommodate a body 139 for securing the pane 123 thereto.

Formed integral with the web 137 is a horizontal web 140 the extreme end 141 of which may be shaped as shown or may be of any other desired shape. Preferably formed integral with and depending from the portions 136b and 136a are webs 142 and 143, and between the webs 142 and 143 is formed a cavity 144 having angular end surfaces 145 and 146 which are adapted to support the weather strip 147 therein. The channel 144 also has an angular surface 148 which cooperates with the lower portion of the weather strip 147. When the lower sash is closed by bringing the lower surface of the bottom rail 22 in contact with the sill 18, the lower leg of the weather strip 147 is deformed upwardly by contact with the sill and since the tail of this lower portion is in engagement with the angular surface 148 the surface 148 acts as a cam and causes the tail of the lower portion of the weather strip 147 to cam against the tail on the upper portion of the weather strip 147 and thereby a tight seal is effected by the weather strip 147 between the sill 18 and the lower rail 22 of the lower sash.

Since the weather strip 147 is in the form of a channel the cavity 144 is not open to receive dirt, dust, spiders, insects, etc.

In the modification of the meeting rail weather strip shown in Figure 6, the lower rail 108 of the upper sash is substantially identical and is, therefore, given the same numerals as those shown thereon in Figure 5. The cavity 117 in Figure 6 contains a weather strip 149 which has curved sides 150 and 151 and formed integral with these curved sides are angular portions 152 and 153 respectively, the free edges of these angular portions terminating adjacent to one another.

The shape of the upper or meeting rail of the lower sash is substantially identical with the upper or meeting rail of the lower sash shown in Figure 5 except the means engaging the weather strip; consequently the webs which are alike are given the same numerals as shown in Figure 5 and their description need not here be repeated.

Coextensive with the web 119b is a web 154 the left end 154a of which is thickened vertically. A V-shaped groove 155 formed in the thickened portion divides the latter into two V-shaped tongues 156 and 157. As may be seen in Figure 6 when the two sashes are closed, the tongues 156 and 157 respectively engage, contact, and deform downwardly the portions 152 and 153 of the weather strip and thereby form two barriers against air passing therethrough.

In the modification shown in Figure 7, the web 109a has a boss portion 158 the surface 159 of which is angular. Formed integral with the web 109a is a horizontal web 160 which is substantially parallel to and spaced apart from the web 113. Formed integral with the web 160 is a web 161 which extends upwardly along an angle which converges toward the angle of the surface 159. Thus the inner surfaces of the webs 158, 160, and 161 form a cavity 162 which is generally rhombic. The weather strip 163 therein conforms to the three sides mentioned and has formed integral therewith angular portions 164 and 165. The angular portion 164 is longer than the portion 165 and underhangs the latter. The portion 165 contacts the portion 164 along a line spaced apart from the inner edge thereof.

Coextensive with the web 119 of the meeting rail 114 is a web 166, and formed integral with the web 166 is a web 167 which extends downwardly and the lower surface 168 of which is doubly beveled to match the angularities of the surfaces of the portions 164 and 165. When the sashes are closed the end 168 engages the surfaces 164 and 165, moves them downwardly under tension and forms double lines of contact therewith which prevent air from passing therethrough.

In Figure 6 is shown a modification of the weather strip arrangement in the bottom of the lower rail 136 of the lower sash. The shapes shown in Figure 8 are substantially identical with the shapes shown in Figure 5, the only difference being in the weather strip per se. Consequently, the same like elements in Figure 8 are given the same numerals as those in Figure 5. The weather strip in Figure 8 includes a horizontal portion 169 which at one end thereof has a portion 170 which is angular therewith and substantially parallel to the surface 145. The tail of the portion 170 is curvilinear as shown at 171, and contacts the sill web 129 at the point indicated by the numeral 172. The weather strip also has an angular portion 173 which is substantially parallel to the surface 146 and an extension of this portion is curvilinear as shown at 174 and contacts the sill surface 129 at the point designated by the numeral 175. This form of weather strip, as may be seen in Figure 8, contacts the sill along two parallel lines of contact and thus forms a double barrier against air passing therethrough.

In Figures 9 and 10 are shown my new and improved check block or rubbing strip arrangement. The parting strip 26 of the jamb 16 has formed therein a rectangular, horizontal slot 176 and spaced apart therefrom in this parting strip is a second rectangular slot 177. A channel-like member 178 has side portions 179 and 180 formed integral therewith. An angular extension 181 of the portion 179 embraces the web 28 and engages the surface 29 of the parting strip 26. An angular extension 182 of the portion 180 embraces the web 30 and engages the angular surface 31.

The upper end of the middle web of the channel member 178 has formed integral therewith an extension 183 which is angular with respect to the main web 178. The lower end of the middle portion of the web 178 also has formed integral therewith an extension 184 which is angular with respect to the web 178. The channel member 178 and its extensions described are preferably made of springy material, for example, Phosphor bronze, and the extensions 183 and 184 which normally contact the parting strip 26 tend to urge the channel member 178 to the left, as seen in Figure 10 and, consequently, the rectangular portions 181 and 182 are urged against the angular surfaces 129 and 131. A web 185 contacts the back face of the channel member 178 and is spot welded thereto as shown at 186 and 187 in Figure 10. Continuous with the web 185 is an upper angular portion 188 and a lower angular portion 189. The portion 188 extends horizontally through the slot 177 formed in the parting strip 126 and is bent downwardly so that a portion 190 thereof contacts the inner face of the web 26. Likewise an extension of the portion 189 extends through the slot 176 and has a straight portion 191 which contacts the inner face of the web 26.

It will be noted from Figure 9 that the sides 179 and 180 of the channel member 178 are contacted by the surfaces of the webs 39 of the stile 46 of the lower sash 23, and by the surface of the web 192 of the stile 183 of the upper sash 21. The check block above described is contacted by the

extensions on the meeting rails and thereby forms end seals therewith.

Referring again to Figure 4, the web 76 is preferably in alignment with the webs 66 and 73. The web 193 is preferably in alignment with the webs 66 and 73, and it is provided with a thickened portion 194 which forms a pad with which a screen or a storm window may member up.

Extending at right angles from the juncture of the portion 69 and the web 76 is a web 195 which is offset from and parallel to the web 65. The corner where the web 195 joins the portion 69 may be reinforced with a square section 196. Formed integral with the web 195 and extending at right angles thereto is a web 197 which is substantially parallel to the web 76 and the space between these webs forms a channel for a screen or a storm window. The webs described above also appear on the left section, and like the other numerals on the left section they are followed by the letter *a*.

Referring now to Figure 5, the offset depending portion 99 is joined to the web 97 by a web 198 and the web 198 slants downwardly so that water falling thereon will fall beyond a screen or storm window positioned within the channel formed between the web 76 and the web 197.

In the form shown in Figure 5, the frame is shown as applied to a building which has its exterior shingled or weather boarded and at the top a shingle is designated by the numeral 199 and at the bottom by the numeral 200. Between the shingle or siding, caulking compound, such as is shown at 201, may be employed. Likewise caulking compound may be applied between the lower edges of the shingles 199 and the web 198 at the top and between the shingles or siding and the sections 196 along each side of the window frame.

Obviously with other types of construction the frame of the window may also be sealed and caulked.

Although I have herein shown and described, by way of example, my new and improved weather stripping for effecting seals between (1) the upper and lower sash and the jambs; (2) between the upper rails of the upper sash and the head of the frame; (3) between the lower sash and the sill; (4) between the meeting rails of the sash; and, (5) between the ends of the meeting rails and the jambs, it is obvious that many changes may be made in the arrangements shown and described without departing from the spirit of the invention as set forth in the following claims.

What is claimed is:

1. In metal window construction, a window frame having a head which includes a longitudinal cavity the interior of which communicates with the lower surface of said head, weather strip means positioned within said cavity and having free edges extending downwardly therefrom beyond said lower surface, a sash sliding in said window frame, said sash having a pair of spaced longitudinal grooves therein, which are spaced apart from each other a distance substantially equal to the space between said free edges, so that when said sash is slid upwardly to bring said top rail into abutting relation with said lower surface, contact is established between said free edges and the corresponding grooves.

2. In metal window construction, a frame having jambs with at least one vertical channel in each jamb, each vertical channel having opposed vertical sides, each of said channels having extensions on its edges, which project toward each other and slightly overhang the space within the channel, a sash having stiles with a set of oppositely disposed vertical channels formed therein, said sash being slidably supported in said first vertical channels, and weather strip means supported in said second mentioned vertical channels and having spaced free portions in contact with the surfaces of said first vertical channels, said portions in contact being overhung by said extensions, the extensions on said first mentioned vertical channels having V-shaped grooves formed therein which are spaced apart from and which overhang the edges of said free portions of said weather strip means.

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