

March 13, 1934.

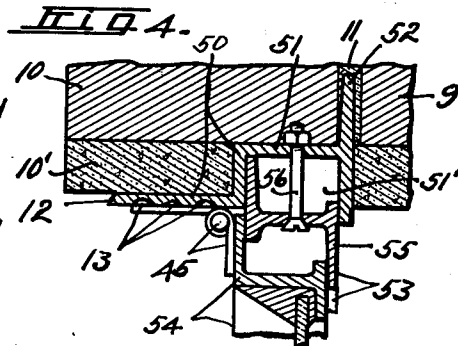
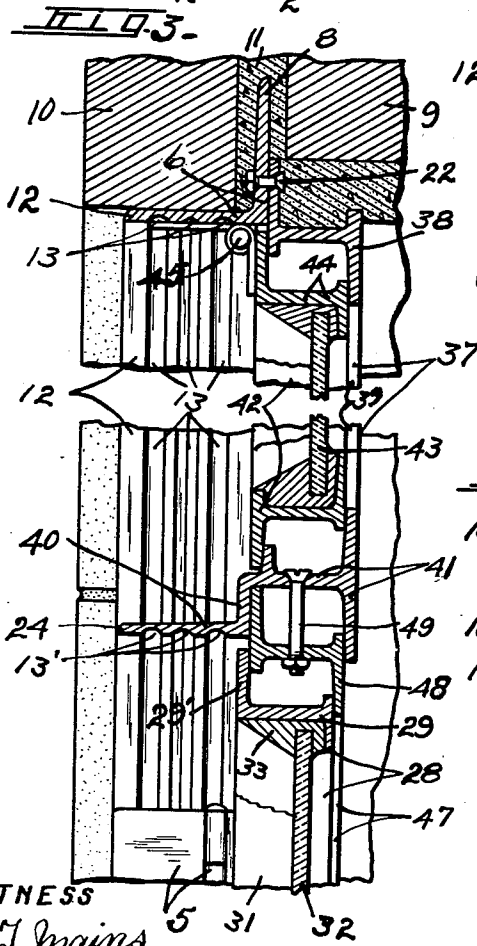
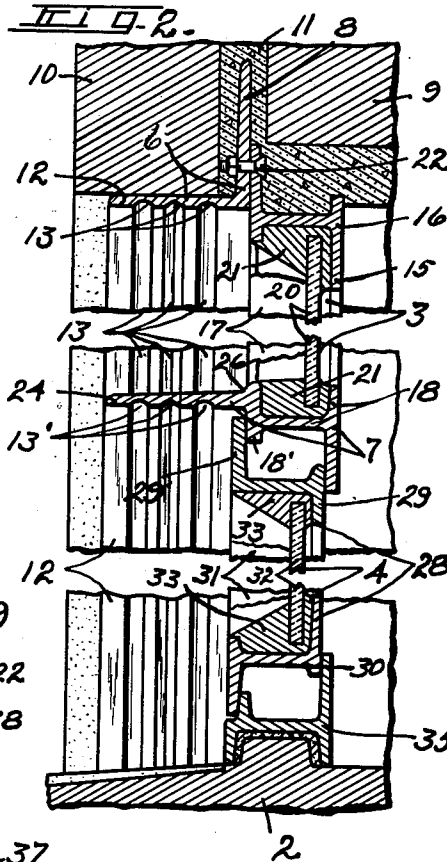
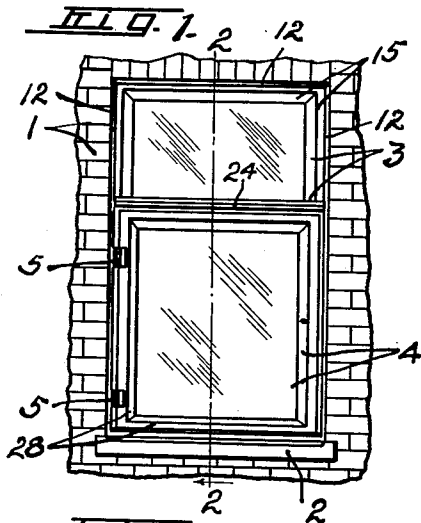
E. FIXTER

1,950,401

METALLIC WINDOW SASH AND CASING CONSTRUCTION

Filed Oct. 17, 1932

2 Sheets-Sheet 1



WITNESS
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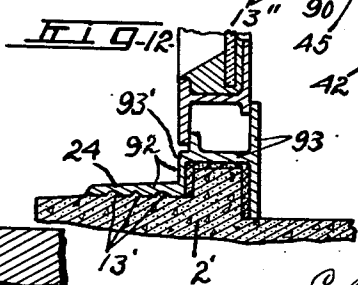
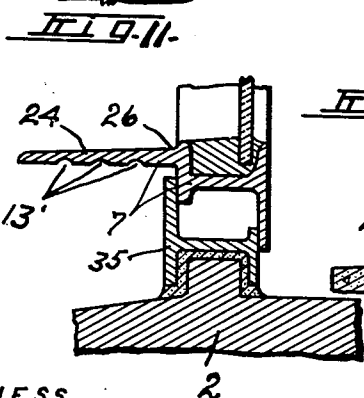
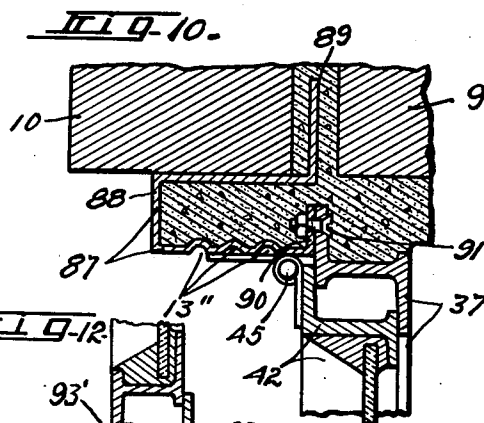
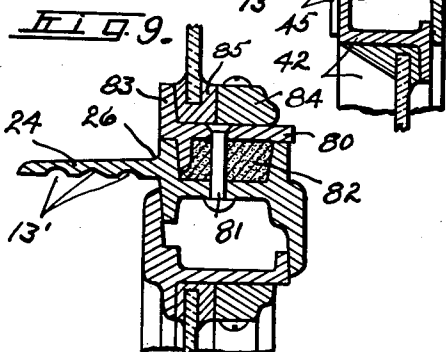
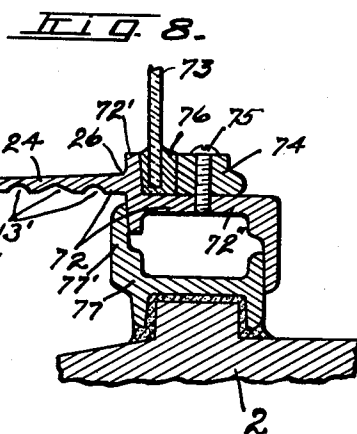
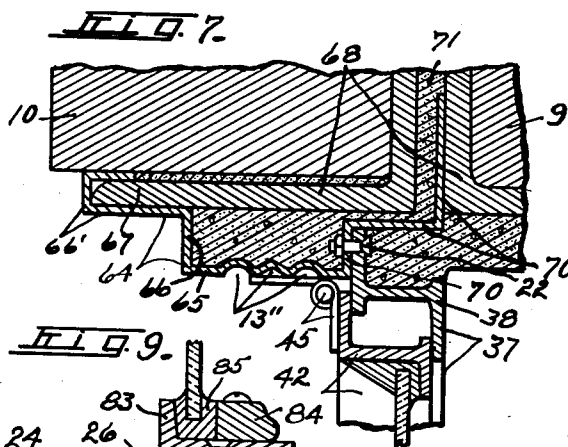
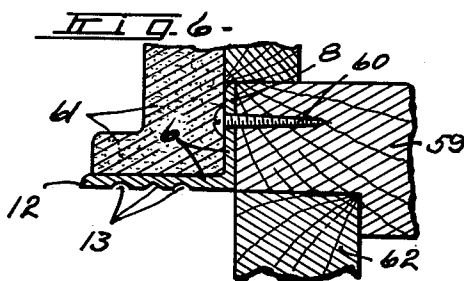
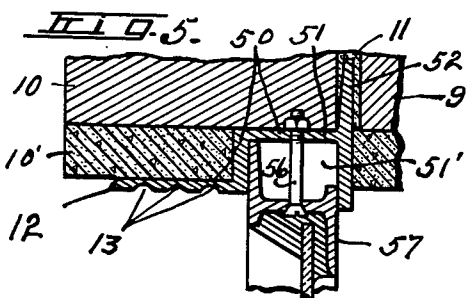
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METALLIC WINDOW SASH AND CASING CONSTRUCTION

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2 Sheets-Sheet 2



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1,950,401

METALLIC WINDOW SASH AND CASING CONSTRUCTION

Edward Fixter, St. Petersburg, Fla.

Application October 17, 1932, Serial No. 638,170

17 Claims. (Cl. 189—69)

This invention relates to new and useful improvements in metallic window sash and frame construction.

In the conventional metallic window frame and sash structure now in general use, it has been found that rain and moisture, under severe conditions, are forced by the wind inwardly between the window frame and the sash or between adjacent relatively movable portions of the window sash.

The main object of this invention is to provide a metallic window frame and sash which is so constructed that rain and moisture will not be forced therethrough under the severest weather conditions.

Other objects of the invention are to produce an all-metal sash and frame for windows, which are simple, economical and durable in construction and which will present an improved appearance.

In carrying out the above-mentioned objects, I have provided a novel drip rail which in one construction, is provided with an anchor plate and is adapted to be used as a head or jamb frame bar, while in another construction, the drip rail is provided with a Z-bar at one side and is adapted more particularly for use as a horizontal sash bar. In both constructions, the drip rail is provided with a substantially flat plate portion which is arranged to extend outwardly from the window frame at right angles thereto and is provided with a series of spaced parallel grooves in one surface which forms spaces or gaps in the surface of the drip bar so that water which might otherwise be driven inwardly along said surface by the wind, will collect at the outer edges of the grooves and drop from the surface of the plate before reaching the adjacent portion of the window frame or sash.

Other objects and advantages pertaining to the details of the structure and the form and relation of the parts thereof, will more fully appear from the following description, taken in connection with the accompanying drawings, in which:—

Figure 1 is a front elevation of a section of a wall having a window therein including a metallic sash and frame embodying various features of this invention.

Figure 2 is an enlarged vertical sectional view taken on line 2—2, Figure 1, with intermediate portions thereof broken away.

Figure 3 is a detail sectional view similar to Figure 2 of the upper portion of a window having

my novel drip rail applied to an out-opening transom.

Figures 4 and 5 are detail sectional views illustrating modified forms of metal frames adapted to be utilized as a head drip or jamb bar. Each of these structures is particularly adapted for use in heavy work for the reason that the metal frame or sash is securely held and the hold in the masonry is at a maximum distance from the outside of the wall.

Figure 6 is a detail sectional view showing my novel drip rail illustrated in Figure 2 as applied to a frame building which has a stucco exterior.

Figure 7 is a detail sectional view illustrating a modified form of drip rail with an out-opening transom and which is particularly effective in connection with steel lintles.

Figure 8 is a detail sectional view showing a modified form of my novel drip rail used as the bottom bar of an in-opening portion of a window and which is equally adapted to be used with an in-opening door having a metal sash.

Figure 9 is a detail sectional view illustrating my drip rail used as a fixed transom bar, similar to that shown in the intermediate portion of Figure 1 and which is particularly adapted for use in heavy type windows.

Figure 10 is a detail sectional view showing a further modification of the drip rail shown in Figure 7 and which is particularly adapted to be used as the jamb for the head casing illustrated in Figure 7.

Figure 11 is a detail sectional view similar to Figure 8, but adapted more particularly for a lighter structure window.

Figure 12 shows a slightly further modified form of my drip rail as used for a sill section in connection with an out-opening door or window structure.

As illustrated in the drawings, the numeral 1 represents the side wall of the building which may be composed of brick, stone or other suitable masonry. However, my novel window is equally adapted for use in buildings constructed with wood sides and, therefore, I do not wish to be limited to any particular class of buildings. The window opening is provided with a sill 2 composed of stone or other suitable material. The window shown in Figures 1 and 2 consists of a fixed transom 3 and a lower outwardly opening portion 4 hingedly mounted at one side as at 5 to the casing. In these Figures 1 and 2, I have illustrated two simple forms of my novel drip rail one of which as 6 is adapted to be used

as a head or jamb bar, while the other one as 7 is illustrated as a fixed transom bar.

The drip rail 6 is angular in cross section and has one leg 8 thereof adapted to extend inwardly between portions 9 and 10 of the masonry of the wall and is secured in place by the cement fill 11. The other leg as 12 of the drip rail 6 is arranged to extend outwardly from the leg 8 along the adjacent face of the window opening. This leg has its upper and lower surfaces substantially parallel with the lower face thereof provided with a plurality of, in this instance three, parallel spaced grooves 13 positioned intermediate the outer and the inner edge thereof. This drip rail, as shown more particularly in Figure 2, is adapted to extend across the underside and downwardly along the vertical sides of the window opening to form the head and jamb bars of the window frame, and when so arranged, the grooves 13 in the head portion appear on the bottom surface of the leg 12 so that water or moisture tending to follow along the undersurface thereof will collect at the outer edge of the grooves and drop from said surface and thereby be prevented from reaching the adjacent portion of the window sash. Similarly, the vertical side members will have the grooves 13 formed in the inner surfaces so that water collecting on said surface will be guided downwardly by the grooves and be prevented from traveling inwardly along the surface of the drip rail to the adjacent portion of the window sash. The water thus collecting on the vertical drip rails, will be guided by the grooves downwardly to the sill 2 and thence by the sill to the exterior of the window opening.

The transom 3 has the usual sash 15, which in this instance, is composed of upper horizontal bar 16 and two vertical side bars 17, each of which is Z-shaped in cross-section. The lower horizontal transom bar, as shown, consists of the drip rail 7 which, in this instance, has one side thereof provided with a longitudinally extending bar 18 Z-shaped in cross-section, which is secured at its ends to the lower end of respective side bars 17, while the upper ends of the side bars 17 are secured to respective ends of the upper horizontal bar 16. These bars are secured together in any suitable manner as by spot-welding, to form the sash 15 in which a pane of glass 20 is secured in any suitable manner as by putty 21.

The sash 15 is rigidly secured to the drip rail 6 by means of a plurality of screws or bolts 22 passing through registering holes provided in one leg of the upper sash bar 16 and each side bar 17 and adjacent portion of the retaining leg 8 of the upper and side drip rails 6. The drip rail 7 forming the lower transom bar is also provided with a substantially flat plate member 24 which is made integral with and extends outwardly from the outer vertically disposed leg 18' of the Z-bar 18.

The plate 24 is disposed in a horizontal plane and is joined to the leg 18' a relatively short distance below the upper longitudinal edge thereof to form a drop 26 a relatively short distance from the putty joint formed in the bar 18, so that water collecting on the upper face of the putty between the glass 20 and leg 18' may readily pass from the surface of the putty and thereby reduce the liability of water collecting in the putty joint, particularly in view of the fact that all putty is liable to shrink and produce a more or less open space between the putty and the inner face of the leg 18' at this point.

The plate 24 of the drip rail 7 has the upper

surface thereof slightly tapered outwardly and downwardly from the point of contact with the leg 18' so as to assist the water in passing outwardly over said surface. The undersurface of the plate 24 is disposed in substantially a horizontal plane and is provided with a plurality of, in this instance three, longitudinally extending parallel grooves 13' similar to the grooves 13 in drip rail 6 and which are adapted to prevent water from being caused to pass along the undersurface of the plate 24 to the leg 18' of the bar 18 in the same manner and for the same reason previously described for the grooves 13 in the head and side drip rail 6 of the window casing.

The lower unit 4 of the window, as previously stated, is adapted to swing outwardly and consists of a sash or casement 28 composed of upper and lower bars 29 and 30 and vertically disposed side bars 31. Each of these bars is Z-shape in cross-section and they are secured together at their adjacent ends by spot-welding or other suitable means. The glass as 32 is secured in the sash in any well-known manner as by a putty joint 33.

The hereinbefore-mentioned hinges 5 which secure the lower unit 4 in position, have one strap thereof secured to one of the vertical bars 31 of the sash 28, while the other strap is secured by spot-welding or other means, to the adjacent portion of the vertically disposed leg 12 of the drip rail 6 as shown more clearly in Figures 1 and 3. The lower portion of the unit 4 is adapted, when in the closed position, to abut against a sill section or Z-bar 35 which is mounted on the sill 2 in any well-known manner, while the upper longitudinal edge of the sash abuts against the Z-bar portion 18 of the drip rail 7, as shown in Figure 2. In other words, the portion 18 and bar 35 form the upper and lower bars respectively of an abutting frame for the window portion 4 and which also has vertical side bars, not shown, secured at their ends to adjacent ends of the bars 18 and 35.

It will be noted by referring to Figure 2 that owing to the flat horizontal arrangement of the undersurface of the plate 24 that the upper longitudinal edge of the outer leg as 29' of the Z-bar 29 terminates a relatively short distance from the undersurface of the plate 24 where said surface joins the leg 18'. It will thus be seen that the plate 24 forms a wide sheltering roof above the lower unit 28 of the window which permits the upper longitudinal edge of the sash 28 to terminate in such close relation to the undersurface of the plate 24 that the liability of wind-blown rain or water collecting on the upper longitudinal edge of the outer leg of the bar 29 and then finding its way to the interior of the window is reduced to the maximum degree. At the same time, the window portion 4 is free to swing upon the hinges 5 from the closed to the open position, or conversely beneath the member 24.

In Figure 3 I have illustrated my novel drip rail as forming a portion of an abutting frame for an out-swinging transom and positioned above the out-swinging lower portion 4 of the window. In this construction I utilize the drip rail 6 which is extended across the head portion of the window opening and along each vertical side thereof in a manner similar to that shown and described for the device illustrated in Figure 2.

The abutting frame as 37, in this instance, consists of an upper Z-bar 38, two vertically disposed side Z-bars 39 and my novel drip rail as 40 which extends horizontally across the lower

end of the frame. The drip rail 40, in this instance, is provided with the plate 24 which has the inner longitudinal edge thereof made integral with the lower longitudinal edge of one of the outer legs of a double Z-bar 41.

The Z-bars 38 and 39 and the double Z-bar 41 have the adjacent ends thereof secured together in any suitable manner as by welding, to form a frame of sufficient size to receive the transom sash as 42 therein. The abutting frame 37 is secured in position to the drip rail 6 by means of a plurality of bolts or screws 22 which extend through registering openings provided in the retaining legs 8 of the drip rail 6 and the outer leg of the upper and side bars 38 and 39 respectively of the abutting frame which are positioned adjacent the legs 8 of the drip bars.

The sash 42 is composed of four Z-bars joined together at their adjacent ends to form a suitable support for the window pane 43. The upper longitudinal bar 44 of the frame of the sash 42 is hingedly connected with the head drip rail 6 by means of a pair of hinges 45 which have one of the respective hinge straps electrically welded or otherwise secured to the outer leg of the upper sash bar 44 and the other strap is similarly secured to the plate 12 of the drip rail 6. With this construction, it is obvious that the grooves 13 in the head and jamb drip rails 6 will prevent the water from traveling inwardly along the exposed surface of the plate 12 in a manner similar to that described for the device shown in Figure 2, and thereby preventing an excessive amount of water from collecting between the upper and side rails of the sash 42 and the adjacent portion of the abutting frame 37.

In order that the lower window portion 4 may be operably mounted in the window opening, I have provided said window portion with an abutting frame 47 which, in this instance, consists of an upper and two side Z-bars 48 and a lower horizontal bar 35, not shown, but which may be similar to bar 35 illustrated in Figure 2. These bars are secured together at their adjacent ends to form a substantially rectangular frame of sufficient size to receive the sash 28. The abutting frame 47 is secured in place by means of bolts 49 which extend through aligned openings provided in the transverse portion of the upper Z-bar 48 of the abutting frame 47 and the double Z-bar 41 of the drip rail 40, while the side bars of the abutting frame may be secured to the adjacent portion of the retaining leg 8 of the jamb drip rail 6 in a manner similar to that shown for the abutting frame 37 for the transom 39, and the lower rail may be secured to the sill 2 of the window opening in any suitable manner, such as that shown for bar 35 in Figure 2.

It will be observed by referring to Figure 3, that the upper longitudinal edge of the lower window portion 4 is protected by the plate 24 in the same manner as that shown in Figure 2 due to the drip grooves 13' provided on the lower surface of the plate 24 and to the fact that the outer longitudinal leg 29' of the bar 29 terminates a relatively short distance below the under-face of the plate 24.

In Figure 4 there is illustrated a still further modification of my novel drip rail which has all the advantages of the drip rail 6 shown in Figures 2 and 3, but is more suitable for use in heavy structure. In this drip rail, as 50, I utilize the plate 12 having the grooves 13 in one face thereof and which has the inner longitudinal edge thereof made integral with the outer longitudinal

edge of one of the side legs of a U-shaped bar 51. This U-shaped bar is also provided with an outwardly extending leg 52 adapted to extend between the portions 9 and 10 of the wall and which is secured in place by the cement fill 11 in a manner similar to that shown in Figure 2.

To the bar portion 51 of the drip rail is secured an abutting frame as 53 adapted to receive a sash 54. The abutting frame 53 is composed of Z-bars 55 which are adapted to be received in the channel 51' of the bar 51 and is secured thereto by means of bolts 56 or their equivalents, which pass through aligned openings provided in the transverse portions of the Z-bars and the U-shaped bar 51.

The sash 54 may be hingedly connected to the plate 12 by hinges 45, in a manner similar to that described for the hinging of the transom 39 shown in Figure 3. The plate 12 being positioned at the outer edge of one of the sides of the U-shaped bar 51 provides a convenient recess between said bars and a portion 10 of the wall for cement or plaster as 10', while the leg 52 being positioned at the inner side of the U-shaped bar 51, affords a convenient hold in the masonry which is positioned at a maximum distance from the outside of the wall, as clearly seen when compared with the drip rail 6 shown in Figures 2 and 3.

Figure 5 shows the same drip bar 50 as that illustrated in Figure 4, but in this construction, the drip bar is shown in connection with a fixed sash instead of an outwardly swinging sash, as shown in Figure 4. In this structure the abutting frame 55 is eliminated and the sash has the adjacent Z-bar 57 mounted in the channel 51' of the U-shaped bar 51 and secured thereto by means of bolts 56 in a manner similar to that in which the abutting frame 53 is secured to the drip rail 50 illustrated in Figure 4.

In Figure 6 I have illustrated the drip rail 6 as applied to a frame building which has a stucco exterior. In this instance, the retaining leg 8 of the bar is secured to the building frame 59 by means of wood screws 60 in such a manner that the plate 12 forms a ground for the stucco as 61, while the grooves 13 protect the opening of the wood window frame 62 and the wood frame on the head and jamb.

In Figure 7 is shown a still further modification of my novel drip rail which is particularly effective in covering steel lintles. In this structure, I have shown the drip rail as 64 in connection with an out-opening transom. The drip rail 64 is composed preferably of heavy gauge sheet metal which is bent to form a U-shaped bar 65 having the outer surface of the transverse portion thereof provided with drip grooves 13' arranged in parallel spaced relation longitudinally thereof.

The outer leg 66 of the bar 65 has the outer portion 66' thereof extending outwardly at right angles to the remaining or inner portion to extend along the adjacent face of one of the legs 67 of the steel lintles 68. The outer edge of the portion 66' is returned bent so as to extend around the end of the leg 67 and between said leg and the outer portion 10 of the wall. The other or inner side 70 of the U-shaped bar 64 has the outer portion as 70' thereof extending outwardly at substantially right angles to the remaining or inner portion thereof and then extending at right angles to itself in a plane parallel with the portion 70 so as to project inwardly between the opposed legs of the angles composing the steel lintles 68, the portion as 70' of the side 70 being

secured between said little portion by means of a cement fill 71.

In Figure 8 is shown a still further type of my novel drip rail which is particularly adapted to be used for the bottom rail of an in-opening steel sash of a door and which is constructed similarly to the transom bar 7 shown in Figure 2 except that the Z-bar as 72 is composed of heavier gauge stock than the Z-bar 18 on the transom bar 7, and in this structure the panel or glass as 73 has the edge thereof positioned between the outer leg 72' of the Z-bar 72 and a retaining strip 74 which is secured to the upper face of the transverse portion 72'' of the bar 72 in longitudinal spaced relation to the leg 72' by means of screws 75, the panel or glass 73 being secured in position in the groove formed between the strip 74 and the leg 72' by means of a putty or cement joint 76. The co-operating or abutting rail 77 is formed substantially the same as the abutting rail 35 shown in Figure 2 and has the under-face thereof provided with a channel adapted to be secured to the sill 2.

In this structure, it will be noted that the plate 24 extends outwardly over the outer longitudinal leg 77' of the bar 77 to form a wide sheltering roof to protect the joint formed between the leg 77' and the Z-bar 72, while the grooves 13' formed in the under-surface of the plate 24 prevents water being carried inwardly along said surface to the adjacent portion of the leg 72 and at the same time, permits the free inward swinging movement of the plate 24 over the leg 77' of the abutting bar 77 even though said leg terminates a relatively short distance below the under-surface of the plate 24.

In Figure 9 I have illustrated my drip rail as being used as a fixed transom bar with an out-swinging sash below. This structure and arrangement is similar to that of the drip bar 7 shown in Figure 2 except that the structure shown in Figure 9 is designed to be utilized in connection with the conventional construction of heavy type windows. Furthermore, instead of the glass being mounted directly in the bar portion of the rail, a plate 80 extends over the upper face of the bar and is secured thereto by means of rivets 81 and putty or cement fill 82.

This plate 80 has the outer longitudinal edge thereof provided with an outwardly extending flange 83 which cooperates with a retaining strip 84 composed of wood or metal and secured to the plate in spaced relation with the flanges 83 for providing a channel 85 between said flange and strip adapted to receive the glass and putty joint.

Figure 10 shows a drip rail construction somewhat similar to that of the drip rail shown in Figure 7. This drip rail as 87 is adapted to form the jamb for the head casing shown in Figure 7 and like the drip rail 64, is composed of sheet metal of suitable gauge and is provided with a U-shaped body portion 88 having one side extended to form an anchor or retaining piece 89 which extends into the masonry. The other or inner side of the body 88 is provided with drip grooves 13'' and has the outer longitudinal edge thereof bent to extend toward the retaining piece 89 at substantially right angles to the remaining portion thereof to form a flange 90 which provides a convenient support for the abutting frame as 37, said frame being secured to the flange 90 by bolts or screws 91.

In Figure 11 the drip rail 7 is shown as utilized as the bottom bar of a steel sash of an in-opening door or window. The rail 7, in this instance, is

shown in connection with the lower bar 35 of an abutting frame which is secured to a sill 2 in the conventional manner.

Figure 12 shows a drip rail structure somewhat similar to the sill member 35 illustrated in Figure 1. The rail, as 92, consists of a Z-bar 93 having the plate 24 made integral with the lower longitudinal edge of the outer leg as 93'. This bar is particularly adapted for use in connection with sills composed of cement or concrete. The bar is applied to the sill when the concrete is in a more or less plastic condition so that the concrete will be pressed upwardly to fill the grooves 13' and thereby form a very effective joint between the plate 24 and the sill as 2' for preventing the passage of moisture or water between the plate and the sill without the necessity of using additional cement or filling material.

While I have illustrated various modifications of my drip rail in the drawings, it will be obvious that in all of these different modifications, the rails are provided with drip grooves which are so positioned that they will prevent water from following along the corresponding surface to the adjacent portion of the window. Furthermore, where the drip rail is used as a portion of the window sash or is positioned between fixed and movable sash members, the plate as 24 containing the drip grooves joins in each instance, with a respective integral bar slightly below the upper longitudinal edge of the adjacent side of the bar to form the drop 26 adapted to permit the ready flow of the water from the adjacent formed joint and that the upper surface of the plate is slightly inclined outwardly and downwardly from said drop which further contributes to the ready flow of the water from the adjacent joint where leaks are apt to occur. Furthermore, the flange or ridge formed by the drop, prevents water, which may be forced inwardly over the upper surface of the plate 24, from reaching the joint formed adjacent the upper edge of the ridge.

It has been found by actual application of my novel construction shown and described herein that this structure is very effective in preventing water from being forced inwardly between relatively movable portions of the window sash and frame and without much of the mastic filling and caulking necessary in conventionally constructed windows, thereby eliminating this expense in time and material, and at the same time, providing steel or metal window frames which are exceptionally strong and rigid to resist wind pressures and strains incident to handling the frames during construction.

Although I have shown and particularly described certain modifications of my device, I do not wish to be limited to the exact construction shown, as various other changes both in the form and the relation of the parts thereof may readily be made without departing from the spirit of this invention, as set forth in the appended claims.

I claim:

1. In a structure of the class described in combination with a sash, an angular drip rail having one leg secured to a sash bar and extending outwardly from the edge of the sash bar to form an anchor member adapted to secure said rail to the building and the other leg of the rail extending outwardly from the sash bar intermediate the sides thereof and at substantially right angles thereto, said last-named leg being provided with grooves in one surface thereof adapted to pre-

vent water passing along said surface to the adjacent portion of the sash.

2. In a structure of the class described in combination with a sash, an angular drip rail having one leg hingedly secured to the sash and normally extending outwardly from the sash in a plane at substantially right angles thereto and adjacent the outer edge thereof, said leg being provided with grooves in one surface adapted to prevent water passing along said surface to the adjacent portion of the sash, the other leg of said drip rail being normally disposed in the plane of and extending outwardly from a side of the sash and adapted to form an anchor member for securing the rail to the building.

3. In a structure of the class described, a drip rail formed of sheet metal and comprising a U-shaped body member having flat parallel sides, one of said sides being provided with drip grooves in the outer face thereof, and another side of said body being extended to form an anchor member for securing the bar to a building.

4. In a structure of the class described in combination with a steel lintel, of a drip rail formed of sheet metal and comprising a U-shaped body member provided with drip grooves in the outer face of the transverse wall thereof, one side of said body being provided with means whereby a frame may be secured thereto and extended to form an anchor member for securing said bar to a building and the other side of the body having the outer portion thereof bent outwardly from the remaining portion to extend along one side surface of the lintel and across the outer edge thereof.

5. A jamb structure for a window of the class described comprising a U-shaped body member having the outer portions of opposite side walls thereof bent to extend at substantially right angles to the remaining portion of said walls to form anchor elements for securing the member to a building, one of said members forming a supporting flange for an adjacent frame, the outer surface of the side of the body adjacent the supporting flange being provided with spaced longitudinally extending grooves adapted to prevent water passing along said surface to the supporting flange and frame secured thereto.

6. In a structure of the class described in combination with a sash and a frame for the sash, an angular drip rail secured to the frame and having one leg hingedly supporting the sash and normally extending outwardly from the corresponding frame bar in a plane intermediate the sides of said bar and adjacent the outer edge of the sash, said leg being provided with grooves in one surface thereof adapted to prevent water passing along said surface to the adjacent portion of the sash, the other leg of said drip rail being normally disposed in the plane of and extending outwardly from one side of the sash to form an anchor member adapted to secure said rail to the building.

7. A frame structure for a window of the class described comprising a U-shaped bar adapted to abut against a side of the window opening and to receive a sash therein, said bar having an outwardly projecting flange or leg to engage the wall of the building for securing the bar in place, and a plate connected with one side of the bar and extending outwardly from the outer edge thereof in parallel spaced relation to the side of the window opening to form a ground for outside finish material.

8. A frame structure for a window of the class

described comprising a U-shaped bar adapted to abut against a side of the window opening and to receive a sash therein, said bar having an outwardly projecting flange or leg to engage the wall of the building for securing the bar in place, and a plate connected with one side of the bar and extending outwardly from the outer edge thereof in parallel spaced relation to the side of the window opening to form a ground for outside finished material, said plate being provided with spaced longitudinally extending grooves for preventing water passing along said plate to said bar portion.

9. A structure of the class described comprising in combination a sash, a frame for supporting the sash, said sash being mounted for movement relative to the frame to and from the closed position, and a drip plate connected with the frame and normally extending outwardly from one side thereof adjacent the outer edge of the corresponding portion of the sash and at substantially right angles thereto.

10. A structure of the class described comprising in combination a sash, a frame for supporting the sash, said sash being mounted for movement relative to the frame to and from the closed position, and a drip plate connected with the frame and normally extending outwardly from one side thereof adjacent the outer edge of the corresponding portion of the sash and at substantially right angles thereto, said plate being provided with drip grooves in one surface adapted to prevent water passing along said surface to said outer edge of the sash.

11. A structure of the class described comprising in combination a sash, a frame for supporting the sash comprising a transverse or head bar and a pair of vertical or jamb bars, said sash being mounted for movement relative to the frame to and from the closed position and a drip plate connected with each of said bars and normally extending outwardly from one side thereof adjacent the outer edge of the corresponding portion of the sash and at substantially right angles thereto.

12. A structure of the class described comprising in combination a sash, a frame for supporting the sash comprising a transverse or head bar and a pair of vertical or jamb bars, said sash being mounted for movement relative to the frame to and from the closed position and a drip plate connected with each of said bars and normally extending outwardly from one side thereof adjacent the outer edge of the corresponding portion of the sash and at substantially right angles thereto, said plates being provided with drip grooves in one surface adapted to prevent water passing along the plates to said outer edges of the sash.

13. A structure of the class described comprising in combination a sash, a frame for supporting the sash comprising a transverse or head bar and a pair of vertical or jamb bars, said sash being mounted for movement relative to the frame to and from the closed position and a drip plate connected with each of said bars and normally extending outwardly from one side thereof adjacent the outer edge of the corresponding portion of the sash and at substantially right angles thereto, each of said plates being provided with longitudinally extending drip grooves in one surface thereof, with the grooves in the transverse or head bar arranged in registration with the grooves in the vertical or jamb bars to form continuous guide channels for conducting water

across the upper end and down the sides of the window to the lower end thereof.

14. A structure of the class described comprising in combination a wooden frame forming a portion of the wall of a building and defining a window or door opening, a metallic drip rail comprising a pair of integral flange or leg portions arranged at substantially right angles to each other, and means securing one of said legs of the drip rail to a member of the window or door frame whereby said rail will move with the member during contraction or expansion thereof and with the other leg of the rail extending outwardly from said frame member at substantially right angles thereto.

15. A structure of the class described comprising in combination a wooden frame forming a portion of the wall of a building and defining a window or door opening, a metallic drip rail comprising a pair of integral flange or leg portions arranged at substantially right angles to each other, and means securing one of said legs of the drip rail to a member of the window or door frame whereby said rail will move with the member during contraction or expansion thereof and with the other leg of the rail extending outwardly from said frame member at substantially right angles thereto, said last-mentioned leg being provided with a plurality of drip grooves adapted to prevent water passing transversely along said leg to the frame member.

16. A structure of the class described comprising in combination a wooden frame forming a portion of the wall of a building and defining a window or door opening, a metallic drip rail, and means securing the drip rail to a member of the window or door frame whereby said rail will move with the member during contraction and expansion thereof and with a portion of said rail extending outward from said frame member in parallel spaced relation to the side of the window or door opening to form a ground for outside finish material.

17. A structure of the class described comprising in combination a wooden frame forming a portion of the wall of a building and defining a window or door opening, a metallic drip rail, and means securing the drip rail to a member of the window or door frame whereby said rail will move with the member during contraction and expansion thereof and with a portion of said rail extending outwardly from said frame member in parallel spaced relation to the side of the window or door opening to form a ground for outside finish material, said rail being provided with a plurality of drip grooves in one surface thereof adapted to prevent water passing along said surface to the frame member.

EDWARD FIXTER.

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