

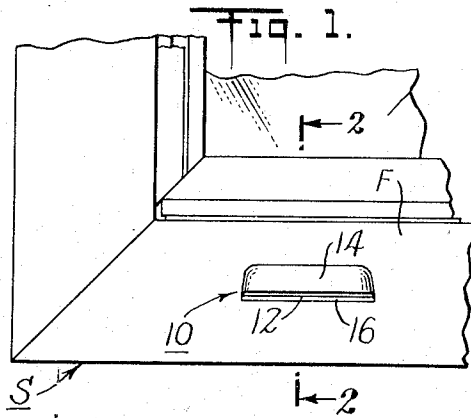
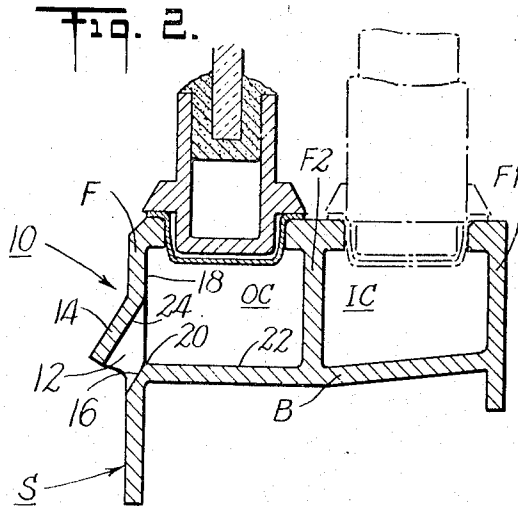
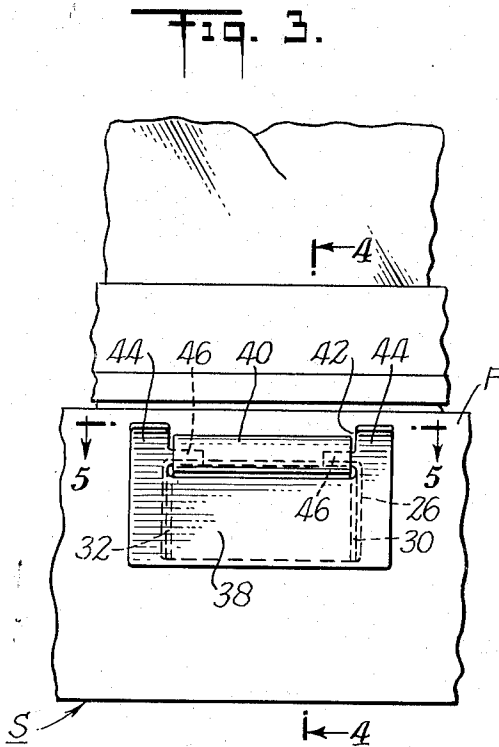
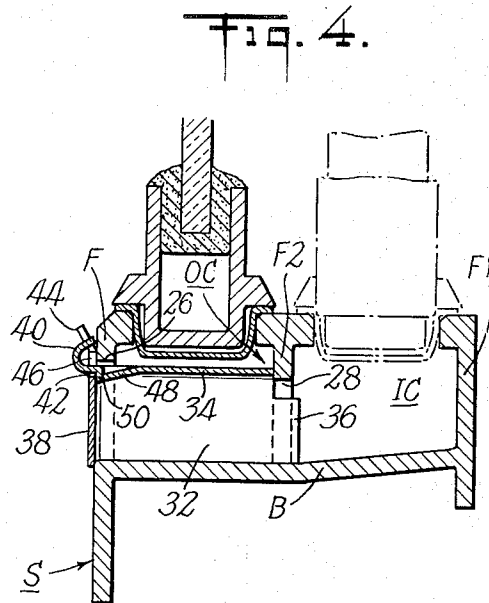
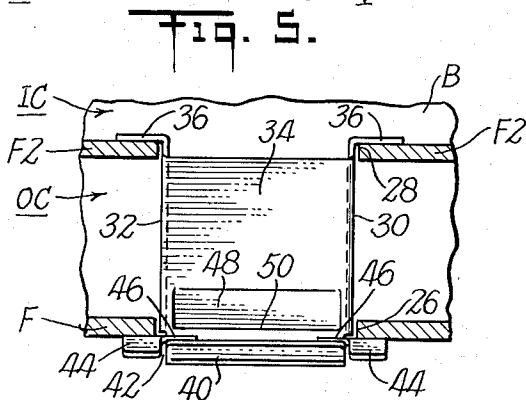
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WINDOW SILL CONSTRUCTION

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1

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WINDOW SILL CONSTRUCTION

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This invention relates to a window sill construction and particularly to metallic sills of the type that are formed by extrusion processes.

The invention is particularly directed to the draining of water from the inner and outer channels of the sill of a window frame in which horizontally slidable sashes are mounted, although the invention has other applications as will be realized from the following description.

In sills of the type referred to, moisture collects in both the inner and outer channels and must be led to the outside and there discharged to prevent sufficient accumulation in the inner channel to cause an overflow into the room in which the window is installed. It will be realized that outside pressure such as created by a wind will tend to prevent the discharge of the moisture and to cause it to accumulate in the channels.

To provide for a discharge of the moisture from the channels against the effect of the outside pressure, each independently of the other, the invention contemplates a direct discharge of the moisture from the outer channel to the outside and in addition a direct discharge of the moisture from the inner channel to the outside.

In the drawing I have illustrated the invention as being applied to the sill of an extruded window frame in which horizontally slidable sashes are mounted.

In these drawings,

Figure 1 is a fragmentary elevation illustrating the type of scupper that is incorporated in the sill for the discharge of the moisture from the outer channel.

Figure 2 is an enlarged transverse vertical sectional view on line 2—2 of Figure 1.

Figure 3 is a fragmentary elevation of the sill illustrating the type of scupper that is incorporated therein for discharging the moisture from an inner horizontal channel of the frame.

Figure 4 is a vertical section on line 4—4 of Figure 3; 50 and

Figure 5 is a horizontal section on line 5—5 of Figure 3.

In the drawing, the sill is indicated generally by the reference character S. The outer horizontal channel in the sill is indicated by the reference character OC, while the adjacent inner channel is indicated by the reference character IC. These channels are formed by an outer flange F, an inner flange F1 and an intermediate flange or parting strip F2 which extend upwardly from the base B of the sill. The upper edges of these flanges are provided with bearing members between which the sashes slidably move to close or open the window frame opening.

To permit the water to drain from the outer channel, scuppers, indicated generally by the reference numeral 10, are provided at as many locations along the length of the sill as are desirable in a sill of a particular length. Each of these scuppers comprises an opening 12 which is baffled by louver 14, the louver being formed by striking out a portion of the flange F to such an extent that the mouth of the opening 12 will discharge downwardly and

2

the opening 12 will otherwise be substantially covered by the louver.

A moisture discharge surface 16 inclines downwardly and outwardly, as shown in Figure 2, substantially from the plane of the inner face 18 of the flange F and from the junction 20 of the inner surface 22 of the channel OC with the inner face 18 of the flange F. Moreover the inner surface 24 of the louver 14 extends downwardly and outwardly from the inner face 18 of the flange F to the discharge opening 12.

When water accumulates in the channel OC it will flow to one or more of the scuppers 10 and through the scuppers to the outside of the building.

The dimensions of the opening at 12 are such that the accumulated water in the channel OC will create a bridge or dam across the opening 12 due to the restraining influence resulting from the surface tension of the water at this point. However, when the water builds up a sufficient head the restraining effect of the surface tension will be overcome and the water will start to flow. This flow is greatly facilitated by the inclined moisture discharge surface 16.

With a scupper of this form it is possible to incorporate in a sill, scuppers of relatively small size without seriously affecting the flow of the moisture therefrom.

While the dimensions of the opening 12 through the face 18 of the outer flange F are not critical, I have found that there are certain optimum measurements which have produced satisfactory results in tests. I have found that the distance between the surfaces 16 and 24 should be not substantially greater than three sixteenths of an inch nor less than one eighth of an inch. I have found a scupper of one inch in length to be satisfactory.

To permit the discharge of moisture from the inner channel IC, unhampered by the effect of any wind pressure to which the scuppers 10 are subjected, I provide the inner channel IC with scuppers of the form illustrated in the drawings. By means of these scuppers the moisture is conducted from the inner channel IC directly to the outside without being commingled with the moisture that accumulates in the outer channel OC.

The outer flange F (Figure 4) is provided with an opening 26 and the parting bead F2 is provided with an opening 28, which openings 26 and 28 are in substantial alignment with each other to establish a direct passage between the outside and the inside channel IC.

To provide for the passage of moisture from the inner channel IC to the outside in isolation from the outer channel OC but traversing the same, I have provided a discharge conduit, illustrated in Figures 3, 4 and 5. This conduit comprises side walls 30 and 32 and an upper wall 34 which form a conduit having open ends of substantially the same shape and dimensions as the openings 26 and 28 in the flanges F and F2 respectively.

The inner ends of the side walls 30 and 32 are bent as at 36 around the inner face of the flange F2 to secure the conduit in position against outward movement.

A closure flap 38 is provided for opening and closing the passage through the conduit. In the form illustrated in the drawing, the outer end of the upper wall 34 of the conduit extends beyond the outer face of the flange F to provide a support for the closure flap 38. This portion of the upper wall 34 is rolled, as at 40, to form the support referred to. The closure flap 38 is provided with a recess 42 for receiving the rolled portion 40 as illustrated in Figure 3. This recess 42 results in the formation of ears or ear portions 44 between which trunnions 46 extend. These trunnions are mounted within the rolled portion 40 of the flap support in such manner that the closure flap 38 may have free inward and outward pivotal movements, the freedom being permitted because of the fact that the space in the rolled portion

40 is somewhat larger than the cross-section of the trunnions.

The ear portions 44 are bent outwardly to permit the closure flap to engage the outer face of the flange F and to abut this face when the flap reaches the desired open position.

The upwardly rolled portion 40 of the flap support effectively closes any space that exists between the upper face of the wall 34 and the adjacent face of the opening at 26.

However, in order that the portion of the recess 42 that is located below the rolled portion 40 will be effectively closed, the wall 34 is provided with a closure shoulder 50 which is created by a depression 48.

As the pivoting of the closure flap is relatively loose and as the flap is formed, preferably, of relatively thin aluminum, it will swing outwardly pivotally, under the pressure of a very small amount of water and thus permit the discharge of the water periodically as the outside pressure will permit.

To facilitate the passage of the water from the inner and outer channels of the frame through the scuppers, the inner surface of the base of the frame may be inclined as illustrated in Figures 2 and 4 of the drawing.

What I claim is:

1. A window frame construction comprising a header, sill and jambs, the sill having spaced, longitudinally extending inner, outer and intermediate flanges extending substantially vertically upwardly in spaced relation to each other and forming inner and outer upwardly opening, substantially parallel channels for the reception of the lower rails of a pair of sashes, said intermediate flange having an opening therethrough and said outer flange having an outer face exposed to the weather and an opening extending therethrough, a fluid conveying conduit extending through said outer channel and closed in respect thereto so that moisture in said outer channel is excluded therefrom, said conduit having open inner and outer ends, the inner open end registering with said opening in the intermediate flange and the outer open end registering with said opening in the outer flange to convey moisture from said inner channel through said outer channel and through said outer flange, a closure flap for said outer open end of said conduit freely pivoted adjacent said outer open end to swing freely into a substantially vertical position downwardly from its pivot to normally close said open outer end of said conduit and to swing freely outwardly on its pivot to uncover said outer open end of said conduit.

2. The combination of element recited in claim 1 wherein said closure flap is provided with an extension arranged to contact said sill to limit the outward swinging movement of said flap.

3. The combination of elements recited in claim 2 wherein said extension is above said pivot of said flap and extends outwardly from the plane of the outer face of said flap and from said pivot whereby the centre of gravity of said flap is outside of its outer face.

4. The combination of elements recited in claim 1 wherein the pivot of said flap is loosely mounted to have bodily movements inwardly toward and outwardly away from said outer flange and said outer open end of said conduit and constructed and arranged to insure the closing

ing of the entire area of said outer open end of said conduit under wind pressure.

5. The combination of elements recited in claim 1 wherein said outer channel is provided with at least one scupper extending through said outer flange to discharge such moisture as is excluded from said conduit from said outer channel.

6. The combination of elements recited in claim 5 wherein said scupper is comprised by an opening extending through said outer flange and having a lower face extending abruptly downwardly from the lower face of the portion of said sill that forms the bottom of said outer channel, and a shield extending outwardly from said outer flange and arranged to shield said opening.

7. The combination of elements recited in claim 1 wherein the outer end of said conduit is provided with a bearing portion and said flap is provided with trunnions extending into said bearing portion to loosely and freely pivot said flap in said bearing portion for free pivotal movements.

8. The combination of elements recited in claim 7 wherein said bearing member is sufficiently larger than said trunnions to permit the latter to move bodily in said bearing whereby said flap is free to move pivotally and to move bodily toward and away from said outer open end of said conduit.

9. A window frame construction comprising a header, sill and jambs, the sill having spaced, longitudinally extending inner, outer and intermediate flanges extending substantially vertically upwardly in spaced relation to each other and forming inner and outer upwardly opening, substantially parallel channels for the reception of the lower rails of a pair of sashes, said outer flange having an opening therethrough, means for conducting moisture from said inner channel through said intermediate and outer flanges and through said opening in said outer flange which means lacks communication with said outer channel, and a flap freely pivoted adjacent said opening in said outer flange to normally freely swing into position to close said opening and to swing to position to uncover said opening.

10. The combination of elements recited in claim 9 wherein said flap is provided with an extension for limiting the extent of its movement into said last named position.

11. The combination of elements recited in claim 9 wherein said flap is mounted to have bodily movements toward and away from said opening in said outer flange.

12. The combination of elements recited in claim 9 wherein said outer channel is provided with at least one scupper opening independent of said first mentioned opening for discharging moisture which is excluded from means for conducting moisture from said outer channel.

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