

SPECIFICATION

Sealing members for windows or doors

5 This invention relates to a sealing member adapted to hermetically seal the clearance between a frame and a casing of a window or door when the window or door is closed.

A combination of a camming or drawing block and
10 a sealing member has been commonly used for sealing the clearance between a window frame and a window casing of a window. The drawing block having an inclined face is fitted to a lower portion of a stile of the window or side jamb of the window
15 frame and the sealing member is fitted to the side jamb opposite to the side face of the stile toward the inside of the room and when the stile is caused to abut against the sealing member the window is cammed or drawn towards the inside of the room by
20 utilizing the inclined face of the camming or drawing block as the window is closed so as to hermetically seal the clearance between the side jamb of the window frame and the stile of the window casing.

However, since such sealing device comprises a
25 separately formed drawing block and a sealing member, their manufacture may become time consuming and complicated and the required fitting process may be complicated as well. The overall cost of such a sealing device may generally become
30 expensive.

According to the invention there is provided a window or door comprising a sealing member fitted between a frame and a casing of the window, or door, said frame defining an opening in an enclosing
35 wall and said window or door casing being openably mounted therein, said window frame having a longitudinal mounting groove formed therein, characterized in that said sealing member comprises a mounting portion mounted in said longitudinal
40 mounting groove of said window frame, a camming portion projecting from said mounting portion and an abutting portion projecting from said mounting portion, wherein said mounting portion, said camming portion and said abutting portion are all
45 formed as an integral unit.

The invention will be described by way of example with reference to the accompanying drawings, wherein:—

Fig. 1 is a cross-sectional view of a sliding window embodying the present invention;

Fig. 2 is an enlarged cross-sectional view of Fig. 1 showing a sealing member mounted therein;

Fig. 3 is similar to Fig. 2 but showing a state wherein the window is completely closed;

55 Fig. 4 is similar to Fig. 2 but showing another sealing member; and

Fig. 5 is similar to Fig. 4 but showing a state wherein the window is completely closed.

The present invention will now be described in
60 greater detail with reference to the accompanying drawings. It is to be noted, however, although this invention will be explained in connection with sliding windows, it is also applicable to other types of window as well as doors.

65 Referring to Fig. 1 fixedly secured to a pillar or post

2 is a side jamb 6 of a window frame 8 defining an opening in an enclosing wall, with a space 4 between the side jamb 6 and the pillar or post 2 to allow for irregularities in the shape of the pillar or post 2. Slidably mounted in the window frame 8 and openably closing the opening are an outer window 10 and an inner window (not shown). Protruding from the inner face 12 of the side jamb 6 are retainers 14 and 16 (Fig. 2) having projections 18 and 20 formed thereon, respectively, thereby defining an undercut mounting groove 22 therebetween (Fig. 2). Fitted or inserted into the mounting groove 22 is a sealing member 24 embodying the present invention. The sealing member 24 comprises a mounting portion 26 adapted to be fitted in the mounting groove 22, a camming portion 28 and an abutting portion 30, both of which project from the mounting portion 26 and formed integrally with the mounting portion 26.

The mounting portion 26 and the camming portion 28 are made of a hard resilient material such as hard rubber and hard resin, etc., while the abutting portion 30 is made of a soft resilient material like soft rubber and soft resin, etc.

The inside face of the camming portion 28 is formed as an inclined face 32 located opposite to a projecting member 34 of a stile 36 of the casing of the outer window 10. The abutting portion 30 of the sealing member 24 comprises a thin-walled base section 38 formed integrally with the fitting portion 26 and an arcuate tongue 40 formed integrally with the base section 38. The arcuate tongue 40 is located opposite to the outside face 42 of the stile 36.

Thus, the movement of the outer window 10 in the closing or shutting direction (shown by an Arrow A) allows the projecting member 34 of the stile 36 to abut against the inclined face 32 of the camming portion 28 (refer to Fig. 2). Further movement of the outer window 10 in the closing direction allows the projecting member 34 of the stile 36 to be moved or slid along the inclined face 32 of the drawing portion 28 so that the outer window 10 may be cammed or drawn toward the inside of the room. In a completely closed condition, Fig. 3, the tongue 40 of the abutting portion 30 is brought into contact with the outside face 42 of the stile 36 and into contact with a corner portion 44 formed between the outside face 42 of the stile 36 and the projecting member 34 to seal the clearance between the side jamb 6 and the stile 36 thereby preventing infiltration of rain water and/or foreign particles through the clearance into the inside of the room.

Referring to Figs. 4 and 5 showing another embodiment of the present invention, wherein like references denote like parts in Figs. 4 and 5 as in Figs. 1 to 3, formed at the connecting corner portion of the base section 38 and the tongue 40 is a groove or recess 48. Since a window casing or window sash is generally comprised of a pair of stiles and top and bottom horizontal members a connecting screw 50 having a head 52 projecting on the outside face 42 of the stile 36 is used for connecting the stile 36 with a horizontal member (not shown). In this embodiment, therefore, because the groove 48 is formed between the base section 38 and the tongue 40 so as to enable the tongue 40 to be readily deformed relative to the

base section 38, when the window is completely closed to tongue 40 can be readily deformed toward the side jamb 6 allowing the tongue 40 to make intimate contact with the corner portion 44 formed at the juncture of the outside face 42 of the stile 36 and the projecting member 34, thereby providing a tight sealing of the clearance between the side jamb 6 and the stile 36. Therefore, no clearance is formed in the periphery of the screw head 52 when the window is completely closed and the tendency of movement of the outer window 10 in the opening direction (arrow B) due to the reaction force resulting from the abutment is likely to be reduced thereby hermetically sealing the clearance between the side jamb 6 and the stile 36 even if the screw head 52 projects on the outside face 42 of the stile 36.

As stated above, since the mounting portion 26 and the drawing portion 28 are made of a hard resilient material, the whole sealing member 24 can be fitted securely and firmly with mounting portion 26 in the mounting groove 22 of the side jamb 6, and the outer window 10 can be drawn or cammed toward the inside of the room as well when the window is completely closed. Further, since the abutting portion 30 is made of a soft resilient material, it can be brought into intimate contact with the outside face 42 of the stile 36, thereby ensuring an excellent air-tightness to be obtained.

In the second embodiment, since the groove or recess 48 is formed at the connecting portion of the base section 38 and the tongue 40, even when the screw head 52 projects on the outside face 42 of the stile 36, the clearance between the side jamb 6 and the stile 36 can be sealed securely.

Although the present invention has been explained in connection with windows and in particular sliding windows, it is to be understood that the invention is also applicable to doors.

CLAIMS

1. A window or door comprising a sealing member fitted between a frame and a casing of the window or door, said frame defining an opening in an enclosing wall and said window or door casing being openably mounted therein, said window frame having a longitudinal mounting groove formed therein, characterized in that said sealing member comprises a mounting portion mounted in said longitudinal mounting groove of said window frame, a camming portion projecting from said mounting portion and an abutting portion projecting from said mounting portion, wherein said mounting portion, said camming portion and said abutting portion are all formed as an integral unit.

2. A window or door as claimed in claim 1 wherein said mounting portion and said camming portion are made of a hard resilient material and said abutting portion is made of a soft resilient material.

3. A window or door in claim 1 or 2 wherein said camming portion has an inclined face formed thereon which is located opposite to said casing of said window, said face being so inclined as to cam said casing toward the abutting portion of said sealing member when the window or door is closed.

4. A window or door as claimed in any preceding claim wherein the abutting portion of said sealing

member comprises a base section and a tongue integrally formed therewith and wherein a longitudinal groove is formed between said base section and said tongue.

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1. A window or door comprising a sealing member fitted between a frame and a casing of the window or door, said frame defining an opening in an enclosing wall and said window or door casing being openably mounted therein, said window frame having a longitudinal mounting groove formed therein, characterized in that said sealing member comprises a mounting portion mounted in said longitudinal mounting groove of said window frame, a camming portion projecting from said mounting portion and an abutting portion projecting from said mounting portion, wherein said mounting portion, said camming portion and said abutting portion are all formed as an integral unit.

2. A window or door as claimed in claim 1 wherein said mounting portion and said camming portion are made of a hard resilient material and said abutting portion is made of a soft resilient material.

3. A window or door in claim 1 or 2 wherein said camming portion has an inclined face formed thereon which is located opposite to said casing of said window, said face being so inclined as to cam said casing toward the abutting portion of said sealing member when the window or door is closed.

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