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(54) Window fastener.

(57) A fastener for a window with a fixed frame (2) and a pivotally opening sash (1), the fastener comprising a first member (5) to be secured to the frame and a second member (14) to be secured to the sash. The second member has a pivotable handle (16), and the handle and first member (5) have cam surfaces (13a 20a 13b 20b) which engage to bring the sash to a predetermined closed position relative to the frame. The cam surfaces also operate during movement of the handle when the sash is to be opened, positively to move the sash an initial distance from its fully closed position to overcome any tendency for sticking.

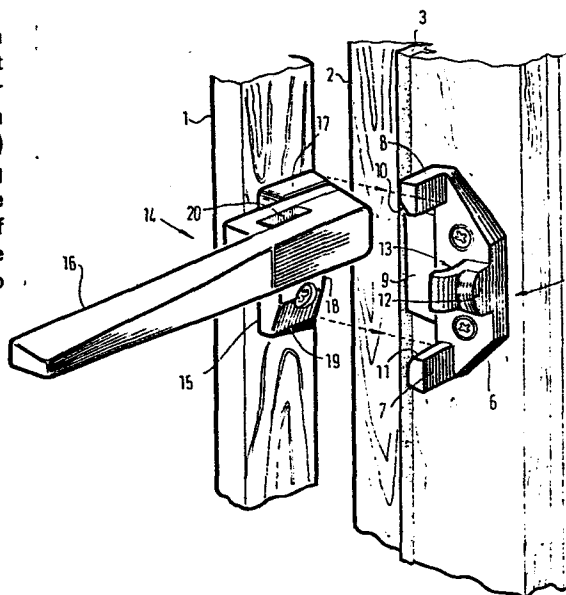


FIG 1

GMD/P82.002

WINDOW FASTENER

This invention relates to a fastener for a window having a fixed frame and a pivotally openable sash.

In known window fasteners, it is usual to secure one part of the fastener to a fixed frame of a window and to secure the other part of the fastener to the window sash such that, when the sash is closed against the frame member, the parts of the window fastener can be engaged to hold the sash in the closed position. However, in the event of distortion occurring in use of the fixed frame and for the sash, mis-alignment of the parts of the window fastener can occur and this can make it difficult to close the sash against the frame. Further, once the sash has been closed it can be difficult to open again when required. Effectiveness of a weatherproof seal between the sash and frame is also dependant on maintenance of a fairly precisely defined relative position therebetween when the window is closed.

According to the present invention there is provided a fastener for a window having a fixed frame and a pivotally opening sash, the fastener comprising a first member adapted to be secured to the frame and a second member adapted to be secured to the sash and having a manually pivotally movable handle, said first member and handle having cam surfaces engagable and adapted to operate during movement of the handle in one sense to bring the sash to a predetermined closed position relative to the fixed frame, and adapted to operate during movement of the handle in the opposite sense to move the sash in the opening direction from said predetermined position.

By the provision of such cam surfaces, the invention provides that the sash can be reliably closed to a predetermined position relative to the frame, to provide a

weather proof seal, and yet can be easily opened when required. The movement imparted to the sash when the handle of the fastener is moved in the opening sense overcomes any initial resistance to opening movement of the sash due to distortion or misalignment thereof.

The first and second members of the fasteners may have formations engagable with one another as the sash approaches its closed position, to guide the sash in the general plane of the sash (i.e. in directions perpendicular to its direction of closing).

The first member and handle may have formations which are engagable to hold the sash at a position relative to the fixed frame which is a greater distance therefrom than the predetermined closed position. This can be used to provide a secure vent position for the sash.

An embodiment of the present invention will now be described with reference to the accompanying drawings in which:-

Figure 1 is a perspective view of a fastener according to the invention,

Figure 2 is a cross-sectional view of the fastener and window assembly during closure thereof,

Figure 3 is a view similar to that of Figure 2, but showing the window assembly and fastener in its closed position,

Figure 4 is a perspective view of the fastener in a 'night-vent' position.

Referring to the drawings there is shown part of a wooden window assembly in which a window sash 1 is pivotally

movable towards and away from a fixed frame 2. An elastomeric compression seal 3 extends along, and is fixed within, a rebate 4 in the fixed frame 2 and is sealingly engagable with the surface of a corresponding rebate 23 (shown in Figures 2 and 3) in the sash 1 when the sash is in its closed position.

A first member 5 of a fastener for the window assembly is fixed by screws to the frame 2 adjacent the seal 3 and comprises a metal back plate 6 from the ends of which project sash guide arms 7 and 8. The guide arm 7 and 8 are provided along their length with respective wedge surfaces 10 and 11. A central region of the back plate 6 is tapered to provide a ramp surface 9.

Projecting outwardly from a central portion of the back plate 8 is a pillar 12 upon which is integrally formed a cam projection 13, with concave and convex surfaces 13a and 13b on opposite sides thereof. These surfaces co-operate with complementary surfaces on the handle of the fastener (to be described).

A second member 14 of the fastener is secured by screws to the sash 1 and comprises a generally rectangular base plate 15 and an elongate handle 16 mounted for pivotal movement on the base plate 15. The base plate 15 is provided on three sides 17, 18 and 19 with ramp surfaces. A slot 20 extends through a thickened region of the handle 16 adjacent the base plate 15 and is provided with internal surfaces 20a and 20b, shown in Figures 2 and 3, which constitute cam surfaces which co-operate in use with the cam surfaces 13a and 13b on the cam projection 13 of guide member 5.

In operation, if there is no mis-alignment between the sash 1 and frame 2, when the sash 1 is pivotally moved towards the frame 2 the formations 17, 18 and 19 on the

member 14 are received centrally between the arms 7 and 8 and upper surface of back plate 6 of the member 5 and do not engage the ramp surface 9 or wedge surfaces 10 and 11. Consequently, as shown in Figure 2, when the compression seal 3 abuts the surface of the rebate 23 of the sash 1, the handle 16 and the guided member 14 (not shown) can be rotated in an anti-clockwise direction shown by arrow 'A' such that the cam surfaces within the slot 20 begin to contact the corresponding surfaces on the cam 13 of the member 5. When the handle 16 is moved to its fullest extent, as shown in Figure 3, it will be apparent that the cam 13 has pulled the sash 1 towards the fixed frame 2 and abuts the arms 7 and 8 on the member 5. In this position, the elastomeric seal 3 has been compressed to provide an effective weather-proof seal. Furthermore, it can be seen that a gap 'B' is maintained between an overlapping portion 22 of the sash 1 and the fixed frame 2 (shown in Figures 2 and 3) and the fastener has thus established a pre-determined distance between the sash and the fixed frame 2 in the direction of closure of sash 1.

To open the sash 1, the handle 17 is rotated in a clockwise direction and the cam surfaces 13a and 13b then co-operate with surfaces 20a and 20b positively to separate the sash 1 from the frame 2.

However, if for some reason the sash 1 is mis-aligned relative to the fixed frame 2, it will be apparent that when the sash 1 is pivoted towards the frame 2 the ramp surface 9 and either wedge surface 10 or 11 can then co-operate with a corresponding surface 17, 18 or 19 of the member 14 to guide the sash 1, generally in the plane of the sash and perpendicular to its direction of closing, into the required position of correct alignment relative to fixed frame 2. Subsequent to such alignment, the handle 16 can again be pivoted in an anti-clockwise direction to secure the window in a

closed position and maintain the required gap 'B' between the overlapping region 22 of sash 1 and the fixed frame 2.

5 Referring to Figure 4 there is shown an alternative position of the fastener according to the invention in which the base plate 15 of the member 14 is secured remote from the guide member 5 by positioning the outer face 24 of the handle 16 between the cam 13 and the arm 7. In this way, the sash 1 is held at a pre-determined distance from the fixed frame 2 in a secure night-vent position.

CLAIMS

1. A fastener for a window having a fixed frame (2) and a pivotally opening sash (1), the fastener comprising a first member (5) adapted to be secured to the frame and a second member (14) adapted to be secured to the sash and having a manually pivotally movable handle (16), characterised in that said first member (5) and handle (16) have cam surfaces (13a 20a 13b 20b) engagable and adapted to operate during movement of the handle (16) in one sense to bring the sash (1) to a predetermined closed position relative to the fixed frame (2), and adapted to operate during movement of the handle (16) in the opposite sense to move the sash (1) in the opening direction from said predetermined position.
2. A fastener according to claim 1 further characterised in that said first and second members (5, 14) have formations (9, 10, 11, 17, 18, 19) engagable with one another as the sash (1) approaches its closed position, to guide the sash (1) in a direction perpendicular to its direction of closing.
3. A fastener according to claim 1 or claim 2 further characterised in that said cam surfaces (13a) 20a 13b 20b) comprise surfaces of a projection (13) on said first member (5) and an aperture (20) in said handle (16) wherein said projection (13) is engagable.
4. A fastener according to any one of the preceding claims further characterised in that said first member (5) and handle (16) have formations (7, 8, 13, 24) engagable to hold said sash at a further position relative to said fixed frame (2), a greater distance therefrom than said predetermined closed position.
5. A window assembly comprising a fixed frame (2), a pivotally opening sash (1) and a fastener according to any one of

the preceding claims, characterised by a resilient sealing element (3) which is compressed between formations (4, 23) of said sash (1) and frame (2) when they are in said pre-determined closed position.

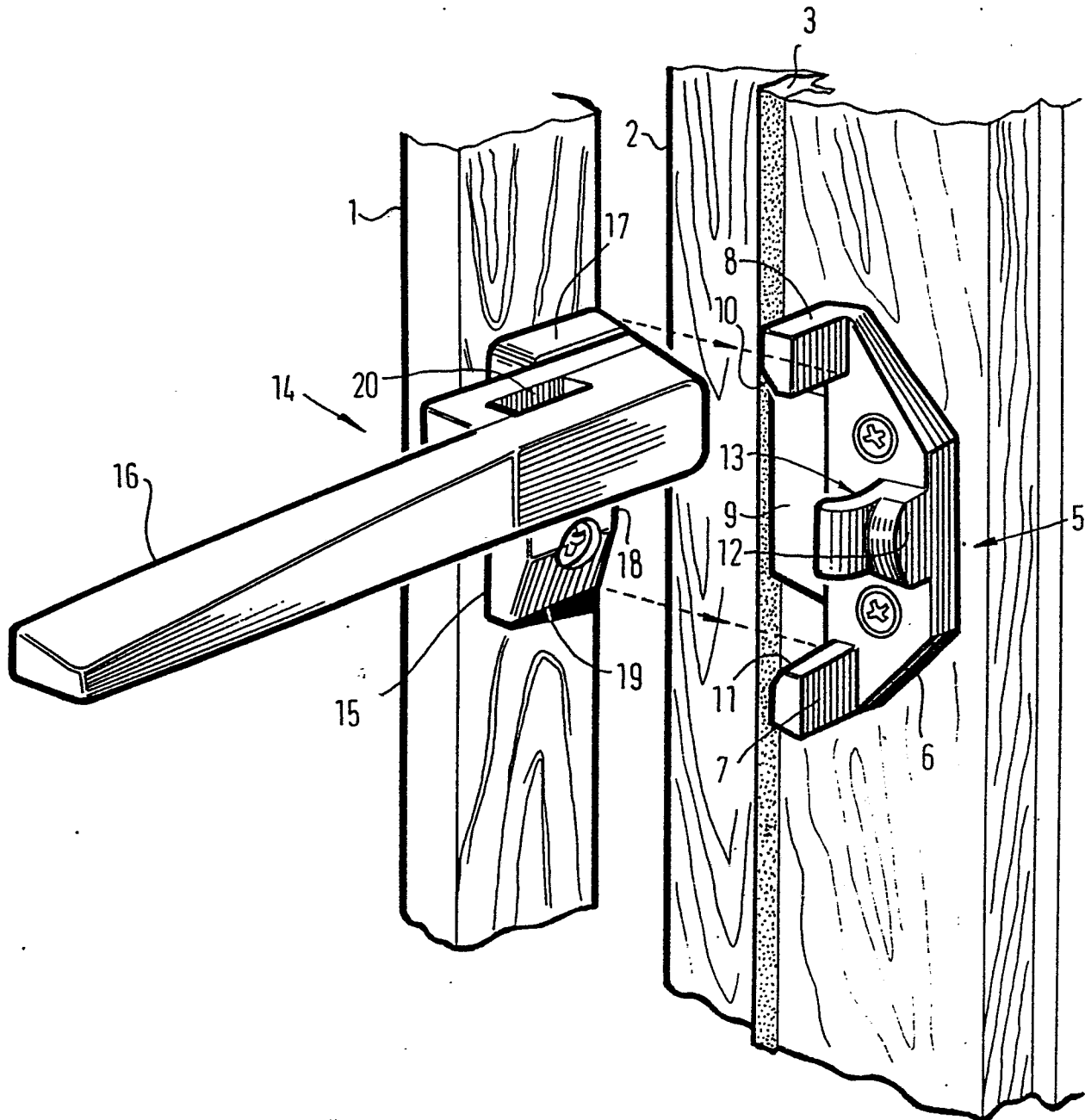
FIG. 1.

FIG. 2.

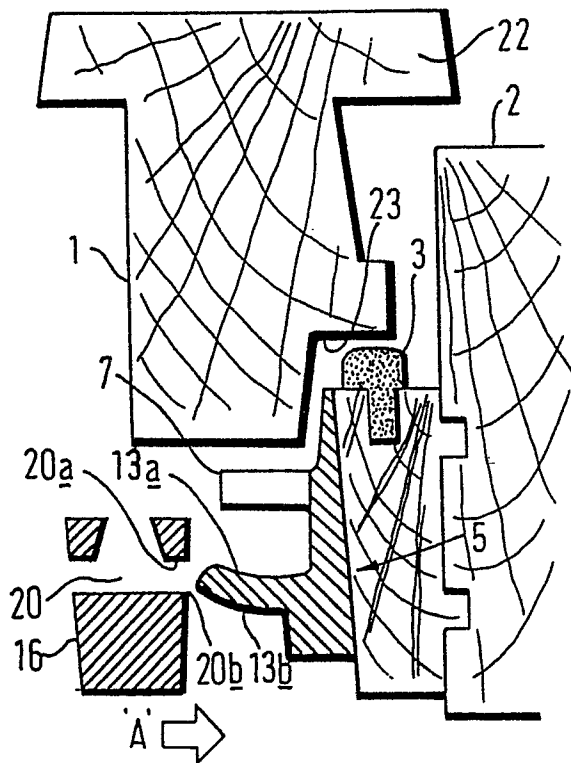


FIG. 3.

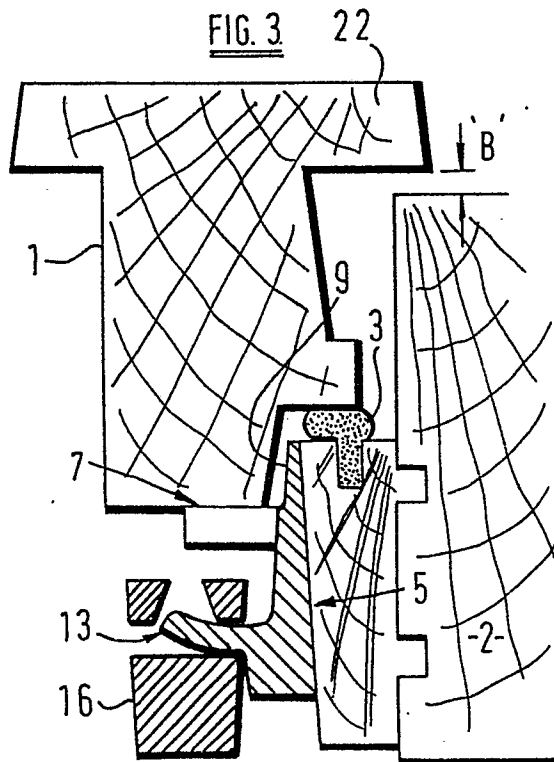
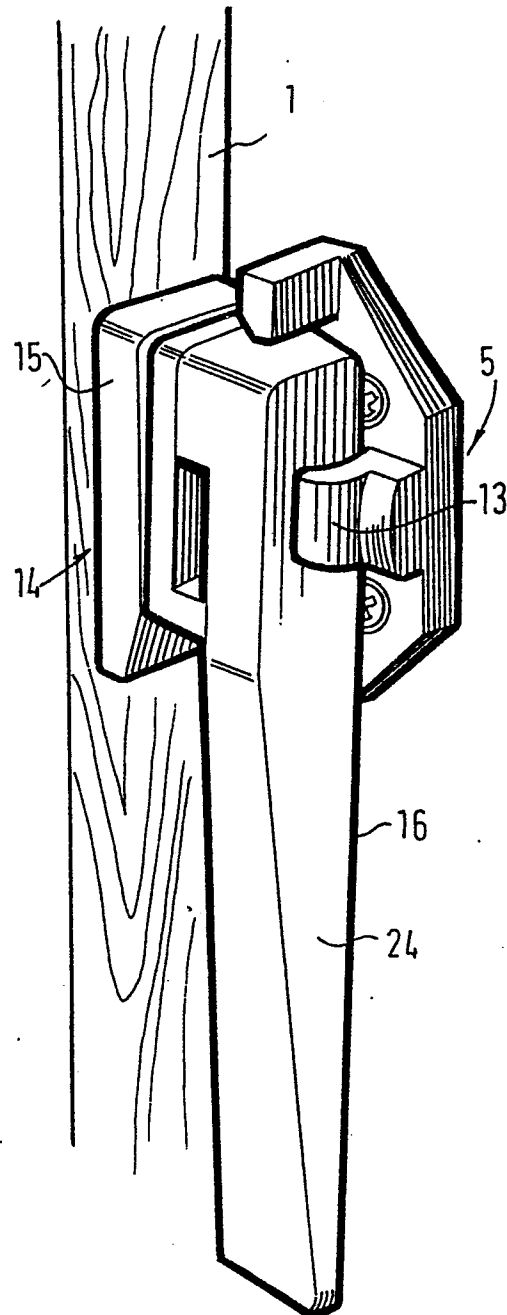


FIG. 4.





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EUROPEAN SEARCH REPORT

0087257
Application number

EP 83 30 0732

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
X	GB-A-1 586 047 (SHAW) * Whole document *	1-3	E 05 C 3/04
Y		4, 5	
Y	--- GB-A-1 185 778 (HOPE) * Whole document * -----	4, 5	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 3)
			E 05 C E 05 F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18-05-1983	Examiner VAN BOGAERT J.A.M.M.
CATEGORY OF CITED DOCUMENTS			
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