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(11) **EP 1 533 436 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
25.05.2005 Bulletin 2005/21

(51) Int Cl.7: **E04D 13/03**

(21) Application number: **04388081.4**

(22) Date of filing: **20.11.2004**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LU MC NL PL PT RO SE SI SK TR**
Designated Extension States:
AL HR LT LV MK YU

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(30) Priority: **21.11.2003 CN 200320121964**

(54) **Covering sealing element for roof window**

(57) The invention relates to a covering sealing element for a roof window. It is a soft resilient end cap made of rubber. The front surface of the end cap has a first embedding group element. Correspondingly, at the back surface of the end cap configures a second embedding group element. The first embedding element consists of embedding wall, embedding flange, or embedding piece. The second embedding group element is a vertical embedding wall, which is embedding into a vertical groove constructed at the front surface of the frame side part. A first pressing group piece which presses the surface of the frame and the coverings at the end cap, and a second pressing group piece pressing the bottom surface of the sash covering. Thus, the end cap is fixed at the bottom portion of the frame side covering. It seals between the coverings and between the coverings and the window parts (including the frame and the sash) in all directions, thus prevents rain and dust from entering the window.

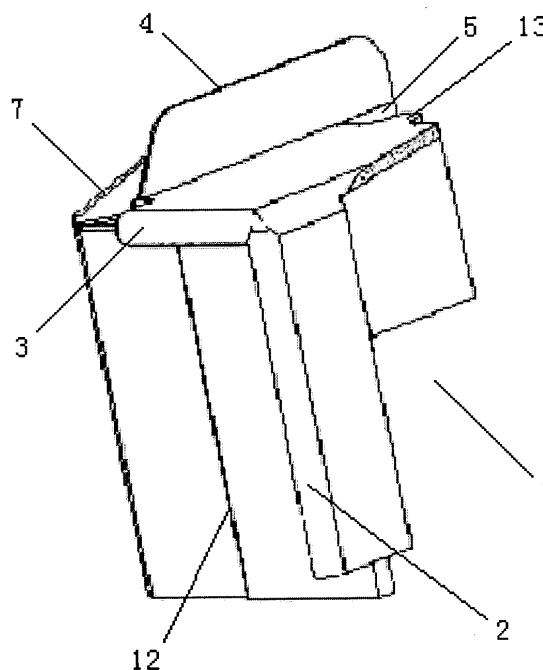


Fig. 1

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a sealing element used for a window, in particular relates to a sealing element for covering parts of a roof window.

BACKGROUND OF THE INVENTION

[0002] To construct a window in a sloped roof, first need to install the frame in the roof by means of mounting brackets, then fit the sash with glass on the frame, on the frame and the sash covered with a covering and a flashing part and some other necessary parts.

[0003] The combination of the frame, the sash with other means or parts and the combination of the frame with the sash satisfies people's normal use of the window constructed in the sloped roof.

[0004] Generally, a roof window comprises a frame, a sash, coverings, a flashing part etc. The top parts of the frame and the sash need to be covered with coverings, so as to protect the wood material of the frame and the sash, prevent the weather such as rain, burning sun and blizzard erode the wood or other material of the window frame and sash.

[0005] The sash covering covers the top part, bottom part and side parts of the sash, and it also is pressed onto the window glass. It forms a seal between the glass and the sash covering. The frame covering covers the top, bottom and side parts of the frame; it also needs the sealing element to form a circular seal between the frame and the sash.

[0006] Considering from the respect of rain proofing and dust insulation, the vertical edge of the sash covering needs to be covered completely or partially. Thus, a narrow gap is formed between the frame covering and the sash covering, the rain and dust might enter into the window through the gap under the action of the wind. At the same time, the outside wind may enter the gap too, it blows from outdoor to indoor, thus obstructs the drainage from within the frame or sash to outside. Due to the slope configuration of the frame and the sash in the sloped roof, this situation is more likely to happen in a cavity formed between the interior surface of the frame side part and the exterior surface of the sash side part.

[0007] That is, under the action of wind, rain and dust is more likely to enter the window from the connecting portions of the frame side parts and bottom part and of the sash side parts and bottom part.

SUMMARY OF THE INVENTION

[0008] In order to overcome the disadvantages of the prior art, the purpose of the present invention is to provide a covering sealing element for roof window, which can effectively prevent rain and dust entering the window under the action of wind.

[0009] Therefore, the invention provides a covering sealing element for a roof window, characterized in that it comprises an end cap structure having an embedding face provided with a first embedding group elements embedded into a corresponding covering, and another embedding surface provided with a second embedding group elements embedded into a corresponding frame.

[0010] Preferably, the end cap is elastomeric.

[0011] Preferably, the end cap has a first pressing group pieces placed in order to abut the surfaces of the frame and covering.

[0012] Preferably, the end cap has a second pressing group pieces placed in order to abut the interior bottom surface of the sash covering.

[0013] Preferably, a first embedding group elements are positioned on the front surface of the end cap.

[0014] Preferably, the first embedding group elements comprise engagement elements.

[0015] Preferably, the first embedding group elements have one or more embedding walls.

[0016] Preferably, the first embedding group elements have one or more embedding engagement elements.

[0017] Preferably, the embedding walls consists of a vertical wall and a horizontal wall.

[0018] Preferably, the front surface of end cap is a stepped surface, the said embedding vertical wall is positioned on the front surface, and the said embedding horizontal wall is positioned on the upper portion of the front surface.

[0019] Preferably, the second embedding group elements are positioned on the back surface of the end cap.

[0020] Preferably, the second embedding group elements comprise engagement elements.

[0021] Preferably, the second embedding group elements have one or more embedding walls.

[0022] Preferably, the second embedding group elements have one or more embedding engagement elements.

[0023] Preferably, the embedding wall consists of a vertical wall to be embedded in the front surface of the frame side part.

[0024] Preferably, the first pressing group pieces comprise a first pressing piece and a second pressing piece, where the first pressing piece is pressed on the covering of the frame side part, and the second pressing piece is pressed on the interior surface of the side part of the frame.

[0025] Preferably, the first pressing piece is standing upright on the top surface of the end cap, and the second pressing piece is standing upright on the back surface of the end cap, where said pressing pieces are joint together to form a continuous flange.

[0026] Preferably, the first pressing group pieces comprise a third pressing piece, which presses on the top surface of the bottom part covering and the top surface of the frame bottom part and is extended outwardly from the bottom edge of the exterior surface of the end

cap.

[0027] Preferably, the first, second and third pressing pieces are integral to form a sealing surface.

[0028] Preferably, the first, second and third pressing pieces comprise a part of the exterior surface of the end cap.

[0029] Preferably, the second pressing group pieces comprise a fourth pressing piece standing upon a supporting surface which is placed between the front surface and the exterior side surface of the end cap.

[0030] Preferably, the fourth pressing piece is an inclined elastomeric element.

[0031] Preferably, the end cap is formed with interior cavities.

[0032] Preferably, the interior cavities are formed into the front surface, exterior surface, interior surface, top surface, bottom surface or back surface of the end cap.

BRIEF DESCRIPTION OF THE DRAWINGS

[0033]

Fig. 1 is a front perspective view of the new sealing element according to the invention;

Fig. 2 is a perspective view of the new sealing element facing backward according to the invention;

Fig. 3 is a back perspective view of the new sealing element according to the invention; and

Fig. 4 is a schematic view for the installing position of the sealing element and the coverings when the window is open.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0034] The invention will be described in detail with the reference to the drawings attached and the embodiment as follows.

[0035] A roof window comprises a window frame, a sash, coverings for the frame and a flashing part, wherein the top, bottom and side parts of the window frame and the sash frame are covered by the coverings respectively, so as to protect the wooden frames.

[0036] Fig. 4 shows the connecting portion of the frame bottom part 130 and the frame side part 120, where a sealing element is provided at the bottom end of the frame covering 320 according to the particular embodiment.

[0037] The covering sealing element for a roof window consists of an elastomeric end cap 1 made of a rubber. In order to save materials, a plurality of cavities 11 are configured at the lower part of the end cap 1. Since the sealing element in the embodiment is mounted in the front interior surface of the covering 320 of the frame side part. The end cap 1 has a first group of embedding elements at the front surface thereof and a second group of embedding elements at the back surface thereof. The embedding elements have the functions of

mounting, fixing and sealing.

[0038] The first embedding group elements consist of an embedding flange 2, 3 or pillar, convex or/and projection. While the figure only shows the embedding flange 2, 3, those skilled in the art could appreciate and use other structures for the embedding element. In this embodiment, there are two embedding flanges: one is a vertical embedding flange 2, which is placed at one side end of the front surface of the end cap 1; and the other is a horizontal embedding flange 3 is placed at the top part of the front surface of the end cap 1. In order to cooperate with the front groove of the frame covering 320, the front surface of the end cap 1 is formed with a step 12, as shown in Fig. 2.

[0039] The second embedding group element consists of one or more vertical embedding flange 13 or embedding pillar, convex or/and embedding projection, which is inserted into a vertical groove formed with the front surface of the frame side part.

[0040] In this way, the end cap 1 is fixed at the connecting portion of the frame side part 120 and the frame bottom part 130, so that it can seal between the coverings and between the coverings and the window parts (including the frame parts and the sash parts) from all directions.

[0041] In order to provide a nice seal, the end cap 1 is formed with a first pressing group pieces for pressing the interior surface of the frame side part 120 and the interior surface of the side part covering 320; and a second pressing group pieces for pressing the underside of the sash coverings (not shown).

[0042] The first pressing group consists of three pressing pieces, wherein a first pressing piece 4 presses the interior surface of the frame side covering 320; the second pressing piece 5 presses the interior surface of the frame side part 120; while the third pressing piece 6 presses the top surface of the frame bottom part 130 or/and the top surface of the frame bottom part covering 330. Depending on the length of the third pressing piece, the third pressing piece 6 can press both the top surfaces of the frame bottom part 130 and the frame bottom part covering 330, as shown in Fig. 4.

[0043] The first pressing piece 4 stands upright on the top surface of the end cap 1, and is extended downward to the back surface of the end cap 1 to form the second upright pressing piece 5. The first pressing piece 4 and the second pressing piece 5 are formed into an integral piece.

[0044] The third pressing piece 6 is extended from the first pressing piece 4 and the second pressing piece 5 outward and from the bottom surface of the end cap 1. It is integral with the first pressing piece 4 and the second pressing piece 5 to form an integral pressing piece, so as to press and seal the frame and the coverings in all directions. The first pressing piece 4 and the second pressing piece 5 stand upright, while the third pressing piece 6 is laid down.

[0045] Since the third pressing piece is extended

along the bottom surface of the end cap, the bottom surface of the end cap 1 is pressed against the top surface of the frame bottom part 130 or frame bottom covering 330.

[0046] In particular, the first pressing piece 4, the second pressing piece 5 and the third pressing piece 6 comprise a part of the exterior side surface of the end cap 1.

[0047] When the vertical place along the first pressing piece 4 and the second pressing piece 5 is used as a division 9 of the end cap 1, the interior part of the end cap 1 is located inside the frame side part covering 320, while the exterior part of the end cap 1 is exposed in the atmosphere. The exposed part there consists of three pressing pieces 4, 5, 6 and the second pressing group pieces. Thus, at the connecting portion of the frame side part 120 and the frame bottom part 130, and the frame corner part and the sash corner part, there is a seal provided in all directions, so as to prevent rain, dust from entering the window from the connecting portion and corners.

[0048] The second pressing piece group is a vertical pressing piece 7, i.e. the fourth pressing piece 7. There is a pressing block (not shown) configured on the top of the bottom portion of the sash side part covering. When the sash is closed, the pressing block abuts the fourth pressing piece 7. The fourth pressing piece 7 stands upright on a supporting surface 8. The supporting surface is placed between the extension 10 of the front surface of the end cap 1 and the exterior side surface 9 (the division 9) of the end cap 1, and connected to the back surface of the extension 10 of the front surface of the end cap 1 (the extension 10 of front surface of the end cap) and the exterior side surface 9 of the end cap 1. The pressing edge of the fourth pressing piece 7 is a sloped flexible edge for a better seal of the sash coverings.

[0049] Based on the above embodiment, several changes can be made. For example, the front end of the frame side part covering 320 in the embodiment is covered completely by the end cap 1, or a blocking piece with a groove may be configured at the front end of the side part covering 320, and the embedding wall or embedding flange of the end cap can be embedded into the groove. The exterior end of the blocking piece may be bended inward to form a gap, so that the embedding piece of the end cap can be embedded into the gap.

[0050] The embedding element and the pressing piece may be integral with the end cap as a single piece, or they may be separate parts.

Claims

1. A covering sealing element for a roof window, **characterized in that** it comprises an end cap structure having an embedding face provided with a first embedding group elements embedded into a corresponding covering, and another embedding surface provided with a second embedding group elements

embedded into a corresponding frame.

2. A covering sealing element according to claim 1, wherein the end cap can be elastomeric.
3. A covering sealing element according to any of claim 1-2, wherein the end cap can have a first pressing group pieces placed in order to abut the surfaces of the frame and covering, wherein the end cap can have a second pressing group pieces placed in order to abut the interior bottom surface of the sash covering.
4. A covering sealing element according to any of the preceding claims, wherein a first embedding group elements can be positioned on the front surface of the end cap, wherein the first embedding group elements can comprise engagement elements, wherein the first embedding group elements can have one or more embedding walls, wherein the first embedding group elements can have one or more embedding engagement elements, wherein the embedding walls consists of a vertical wall and a horizontal wall.
5. A covering sealing element according to any of the preceding claims, wherein the front surface of end cap can have a stepped surface, the said embedding vertical wall can be positioned on the front surface, and the said embedding horizontal wall can be positioned on the upper portion of the front surface.
6. A covering sealing element according to any of the preceding claims, wherein the second embedding group elements can be positioned on the back surface of the end cap, wherein the second embedding group elements can comprise engagement elements, wherein the second embedding group elements can have one or more embedding walls, wherein the second embedding group elements can have one or more embedding engagement elements, wherein the embedding wall can consists of a vertical wall to be embedded in the front surface of the frame side part.
7. A covering sealing element according to any of the preceding claims wherein the first pressing group pieces can comprise a first pressing piece and a second pressing piece, where the first pressing piece can be pressed on the covering of the frame side part, and the second pressing piece can be pressed on the interior surface of the side part of the frame, wherein the first pressing piece can be standing upright on the top surface of the end cap, and the second pressing piece can be standing upright on the back surface of the end cap, where said pressing pieces are joint together to form a contin-

uous flange.

8. A covering sealing element according to any one of the preceding claims, wherein the first pressing group pieces can comprise a third pressing piece, which presses on the top surface of the bottom part covering and the top surface of the frame bottom part and can be extended outwardly from the bottom edge of the exterior surface of the end cap, wherein the first, second and third pressing pieces can be integral to form a sealing surface, wherein the first, second and third pressing pieces can comprise a part of the exterior surface of the end cap. 5 10
9. A covering sealing element according to any one of the preceding claims, wherein the second pressing group pieces can comprise a fourth pressing piece standing upon a supporting surface which can be placed between the front surface and the exterior side surface of the end cap, wherein the fourth pressing piece can be an inclined elastomeric element. 15 20
10. A covering sealing element according to any one of the preceding claims, wherein the end cap is formed with interior cavities, wherein the interior cavities can be formed into the front surface, exterior surface, interior surface, top surface, bottom surface or back surface of the end cap. 25 30

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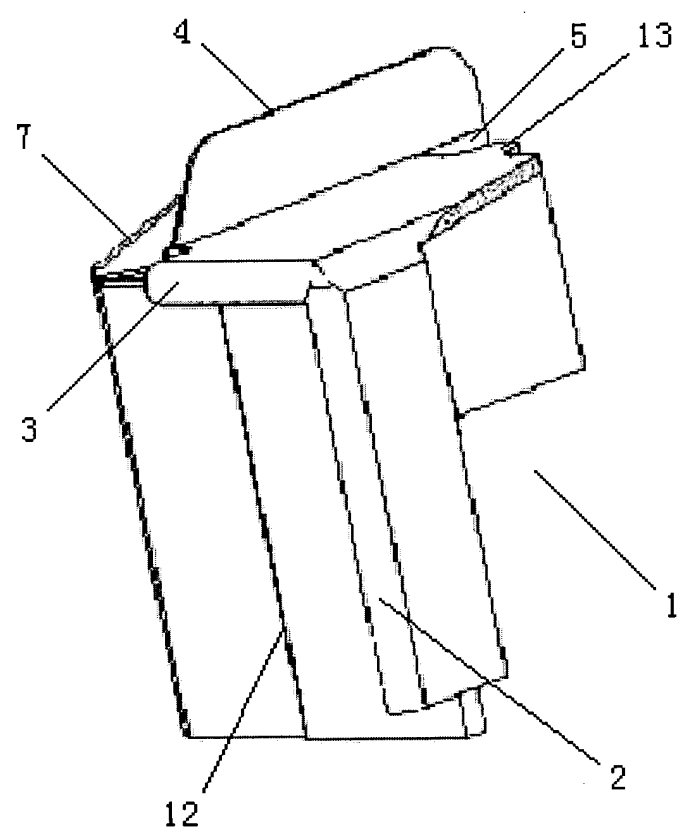
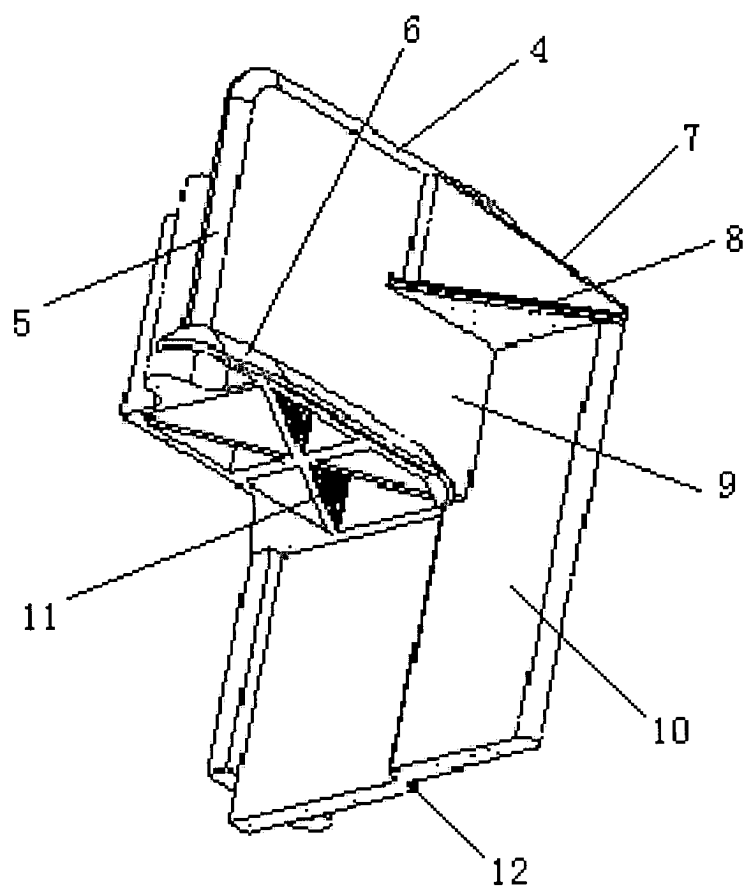


Fig. 1



□ 2

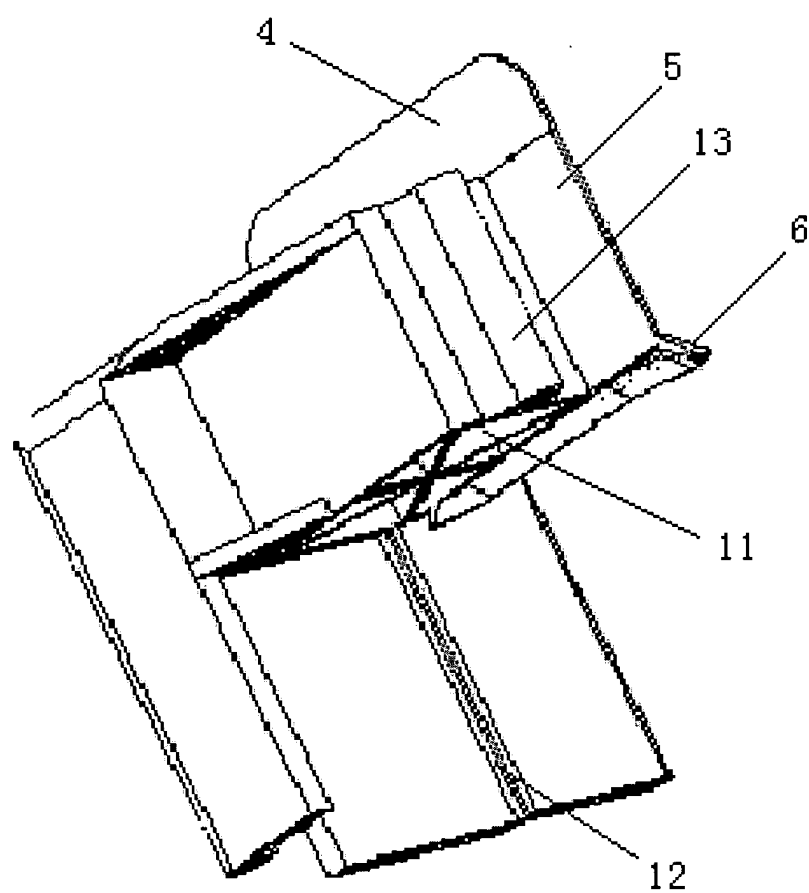


Fig. 3

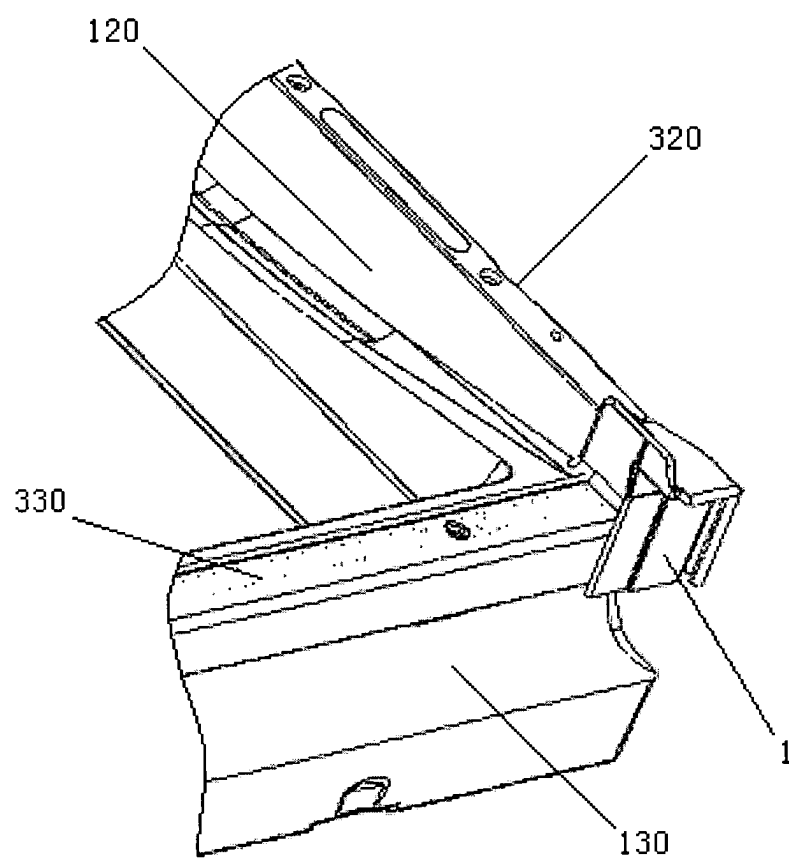


Fig. 4