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The present invention relates to a baffle intended to be attached and fixed in a simple and reliable manner to the bottom cross-member of the frame or opening lining of a door, window or the like, especially
5 in order to allow draining of rainwater which has generally infiltrated from outside towards the inside of this frame.

Door frames, window frames or the like, constituted by a metalwork opening lining formed by the
10 assembly of hollow profiled sections delimiting a framework for supporting and/or pivoting the casement or leaf, are not perfectly sealed and, despite the care taken in producing them, are frequently the site of infiltration of water, in particular rainwater striking the door or
15 window on the outside and running down the latter. This water collects on the inside of the profiled sections of the opening lining which forming [sic] a continuous structure and flows, under gravity towards its lower



cross-member from which it is then necessary to drain it.

For this purpose, the simplest solution consists in providing one or more small holes in the profiled section constituting this cross-member, allowing accumulated water to escape to the outside before being collected in a groove, gutter or the like, which may or may not be fastened to the profiled section and which channels it towards an appropriate drain.

Now, it is advisable to close, at least temporarily, this drain hole so as to prevent ingress of water via the latter, and especially to stop an outside excess pressure, albeit a momentary one, from driving back the water into the bottom cross-member of the opening lining instead of draining it away.

Various constructions of baffles already exist in the prior art which aim to drain away running water as best possible, in particular by freeing, for this purpose, the drain holes of the bottom cross-member of the opening lining, while at the same time blocking them off each time it is necessary to stop water from being driven back towards the inside of this cross-member. By way of indication, mention may be made of the use of a stamped and raised part of the web of the profiled section in line with the hole, or else the use of ball-jointed systems.

However, these solutions give results which are not always satisfactory, as they are sometimes tricky to use. Furthermore, they are not perfectly held in place on the frame, the components used quite frequently being



lost during the operations of installing this frame.

The subject of the invention is a baffle which fulfils such a function of temporarily blocking off the water drain hole provided in the opening lining, in order to prevent infiltration and ingress of water in the reverse direction via this hole, while at the same time allowing, on the contrary, water accumulated in the bottom cross-member of the opening lining, when it collects there from other parts of the frame, to escape to the outside.

The invention also aims to provide a baffle designed in such a way that it can close permanently the drain hole in the absence of water in the cross-member, so that it protects this hole by preventing rain striking the casement or leaf from penetrating into this hole.

With this object in mind, the baffle in question, capable of being mounted against a water drain hole made in the outer face of the bottom cross-member of a frame constituting the opening lining of a door, window or other component, including a flat support capable of being applied closely against this face in line with the hole, this support including means for fixing to the cross-member and a flexible flap, preferably manufactured together with the support, having dimensions greater than those of the hole, characterized in that this flap is mounted so as to pivot on the support with respect to the cross-member so as to allow it to move outwards in relation to that face of the cross-member which includes the drain hole, leaving the latter clear so as to allow



water contained in the cross-member to flow away freely towards the outside, the bearing of the flap on the face of the cross-member preventing, on the other hand, any ingress of water into the cross-member from outside.

5 Advantageously but not exclusively, the drain hole made in the bottom cross-member of the frame has a rectangular profile, it being possible for this cross-member to include one or more adjacent holes, each of which being equipped with a baffle in accordance with the
10 invention.

 According to a particular characteristic preferably employed, the flexible flap has the same rectangular profile as the hole and includes, on one of its small sides, a hinge for pivoting on the support. Likewise
15 preferably, this hinge is formed by a linking strip, having a zig-zag contour one end of which is linked to the support and the other of which is joined to the flap, the adjacent parallel branches of the strip being connected by bands which are perpendicular to their direction
20 and also fastened to the support and to the flap.

 In a preferred embodiment, the flexible flap includes, on the periphery of its rectangular profile, a projecting area having a cross-section, through a plane perpendicular to that of the flap, of substantially
25 triangular shape, the base of which adjoins the plane of the flap and the apex opposite this base bears on the face of the cross-member, beyond the edges of the hole.

 According to another characteristic, the support includes two lateral bearing tabs on either side of the



flexible flap, each equipped perpendicularly to its plane with a cylindrical spigot the surface of which is cut in order to form adjacent tongues separated by longitudinal slits made from its end opposite the tab, so as to have the ability to expand elastically, this spigot being capable of penetrating into a receiving hole provided in the outer face of the cross-member in order to allow the support to be fixed to the latter.

Advantageously, each cylindrical fixing spigot is associated with a locking nail suitable for being engaged along the axis of this spigot via the outside of the support, moving apart the tongues beneath the cross-member, this nail including a head which is applied against the corresponding bearing tab.

Also according to another characteristic, the support includes a cover having a curved profile, pivoted on this support about a flexible hinge, extending so as to be parallel to a large side of the drain hole above the latter, it being possible for this cover to be turned down over the flap in front of the cross-member.

Preferably, the support includes means for locking the lateral sides of the cover onto the bearing tabs of the support, snap-fastening these sides onto projecting lugs carried by these tabs.

Other characteristics of a baffle device according to the invention will further appear in the following description of an embodiment, given by way of non-limiting indication, with reference to the appended drawings in which:



- Figure 1 is a partial perspective view of a pivoting window frame intended to receive a baffle according to the invention.

5 - Figure 2 is a front view on a very substantially greater scale of part of the bottom cross-member of the frame, this part being equipped with such a baffle.

- Figures 3 and 4 are cross-sectional views of the baffle depicted in Figure 2, illustrating the means for fixing this baffle to the cross-member, according to two
10 successive steps in their use.

- Figure 5 is a perspective view of the baffle installed on the cross-member, the frame being seen from the opposite side in relation to that carrying the baffle.

15 - Figure 6 is a cross-sectional view on a larger scale of the flexible flap of the baffle, illustrating a detail of its construction. In Figure 1, the reference 1 designates a part of the fixed opening lining of a window or the like, this opening lining being equipped with
20 hinges 2 for pivoting a casement 3 on the opening lining.

The frame of the opening lining is constituted by the assembly of profiled metal sections 4, suitably joined together along the sides of this frame, which frame is immobilized by suitable means, these not being
25 directly relevant to the invention, on a support structure, in particular an element of masonry 5.

The lower profiled section 4 of the opening lining 1, more especially depicted, constitutes the bottom cross-member of the frame and usually includes a



5 raised skirting 6 provided on the outside and constituting a rabbet against which the casement 3 is applied when closing the window, with interposition of a seal (not depicted). The opening lining thus separates the outside region 8 from the inside region 9 of a room or other area.

10 Because of the rainwater running down over the external front face of the window, it is not possible to stop some infiltration of this water into the opening lining, either because the seals interposed between the frame and the casement are defective or because the assembly of profiled sections of this frame is not sufficiently tightly fitting, despite every care which may be taken when manufacturing the frame.

15 In order to allow drainage, towards the external region 8, of the water which has thus been able to accumulate on the inside of the opening lining 1, between the latter and the casement 3, at least one small hole 10 is usually provided in that face of the cross-member 4 in the vicinity of the region 7 where this water collects under gravity, especially in the skirting 6 located on the outside, this small hole 10 being suitable for allowing water, taken up via an appropriate groove or gutter, to flow away.

25 However, for reasons already specified, it is advisable to provide a device such that, in the event of momentary excess pressure in the external region 8 with respect to the internal region 9, water is not, on the contrary, driven back into the cross-member and prevented



from flowing away. Furthermore, it is advisable for the drain hole normally to be closed, also preventing inopportune water ingress.

Figure 2 illustrates a baffle in accordance with the invention, allowing especially the hole 10 to be closed in such a way, however, that this closing-off does not stop water collected inside the opening lining 1, in the bottom cross-member 4 of its frame, from draining away.

As may be seen in this figure, the baffle 11 essentially includes a support 12 and a cover 13 which is capable of being turned down towards the front on the support, so as to protect the latter and especially the flexible closure flap 17 which it includes.

The support 12 especially consists of two lateral tabs 14 and 15 arranged on either side of the hole 10 made in the cross-member 4. These tabs pressing on the latter on the outer side of the opening lining 1.

The tabs 14 and 15 delimit between them, in line with the hole 10, a free area 16 within which is mounted the flap 17 which thus ends up in front of the hole 10, closing off the latter.

In the embodiment depicted, the hole 10 has a rectangular profile, like the flap 17, the dimensions of the latter being, both in terms of width and in terms of length, appreciably greater than those of the hole 10, but these dimensions being such that the flap is lodged exactly in the free area 16 between the tabs 14 and 15, as depicted in the drawing.



The flap 17 is pivoted on the support 12, preferably on one of its small sides, in the example depicted on the tab 14, by means of a hinge 18, its other three sides being free in such a way that the flap can move in relation to the cross-member and in particular move away from or closer to the plane bearing face of the raised skirting 6 of this cross-member, including the hole 10 and against which it is applied when it closes the latter.

10 The support 12 with the cover 13, the tabs 14 and 15, the flap 17 and the hinge 18 are preferably manufactured together as a single component, especially by moulding a suitable plastic, of the polyethylene or polyvinyl chloride kind, it being pointed out, however, 15 that the nature of this material has in itself no impact on the specific characteristics of the invention as long as the hinge can provide the flap with sufficient capability of movement in relation to the cross-member 4 of the opening lining.

20 The flexible hinge 18 is advantageously constituted by a continuous linking strip folded up on itself so as to have branches 19 with a zig-zag contour, the strip having one of its ends joined to the flap on its small side close to the hinge, the other being fastened 25 to the adjacent tab 14. Preferably, the hinge thus designed is reinforced by means of bands 20 extending perpendicular to the direction of the parallel zig-zag-shaped branches of the strip.

The support 12, especially in line with its tabs



14 and 15, is prevented from moving with respect to the cross-member 4, in particular with respect to the latter's skirting 6 against which the baffle is applied. For this purpose, the support includes cylindrical spigots 21 suitable for engaging in drill-holes provided in the sheet metal of the cross-member on either side of the hole 10, the surface of these spigots being cut in order to form adjacent tongues 22 separated from each other by slits made in each spigot from its end opposite the tab to which it is fixed.

Once its spigots 21 have been installed in the skirting 6, the support is finally locked in position by means of nails 23, each including a head 24 and a central part 25 which is fastened to the tab in question (the tab 14 in the sectional views of Figures 3 and 4) by lips 26 capable of breaking when a force is exerted on the head of the spigot [sic] in order to engage it in the associated spigot, pushing back the tongues 22 which bend outwards by virtue of the elasticity conferred on them by the slits delimiting these tongues, ultimately preventing the baffle from moving on the cross-member 4 of the opening lining 1. The use of these nails 23 is clearly illustrated in these figures.

The cover 13 of the baffle finally includes a curved wall 27, connected to the support 12 via a flexible hinge 28, which preferably extends parallel to the large sides of the flap 17 and is provided on the tabs 14 and 15.

Advantageously, these tabs include projecting



lateral lugs 29 suitable for cooperating with a catch 30 made in the edges facing the wall 27 of the cover 13 so as to allow, after this cover has been turned down about the hinge 28, snap-fastening to the support 12, thus
5 freely resting on the flap 17 and protecting the hole 10 with respect to water running directly down the external face of the casement or leaf when this casement or leaf is applied against the frame of the opening lining.

This device has great flexibility in operation,
10 the movement of the flexible flap, freeing the hole for draining water out of the opening lining, being obtained for a minimum column of water, whereas it returns immediately into the closed position in the event of outside excess pressure. The whole unit is particularly reliable,
15 has a very appreciable lifetime and allows positioning and secure immobilization against the cross-member, the baffle not being able to be removed save by a special force exerted on the locking nails in order to take them out before the support can itself be separated from the
20 cross-member.

Of course, needless to say the invention is not limited to the embodiment more especially described with reference to the appended drawings; on the contrary, it encompasses all variants. In particular, it is possible,
25 when making the hole 10 in the bottom cross-member 4 of the frame, that this hole has small burrs or excrescences of metal, or, as the case may, be local deformations, such that when the flap 17 is applied against the corresponding face of the cross-member, as indicated above,



these burrs or deformations may compromise the desired sealing.

In order to alleviate this drawback, the flap 17 may advantageously be provided, during its manufacture by
5 moulding with the support 12, as already described, with a particular section as illustrated in Figure 6, with a projecting area on its edges in the vicinity of its periphery, this projecting area forming a protuberance 31 of approximately triangular profile, the base of which is
10 integral with the plane of the flap whereas its opposite apex 32 is in relief with respect to this plane, so as alone to bear on the face of the cross-member when the flap is applied against the latter, thereby surrounding the hole 10 in a continuous line.

15 This arrangement prevents, in particular, a possible metal burr from raising the flap, this burr being in fact surrounded outside of the hole 10 by the projection 31, in contact via its apex 32 with the sheet metal, beyond the contour of the hole.

20 In addition, it should be noted that, when the profiled metal section constituting the bottom cross-member 4 is wet, a bonding phenomenon may occur due to the surface tension of the water, tending to keep the flap 17 applied against the metal, it being possible for
25 the movement of this flap, freeing the hole 10, to be counteracted and to arise only for a greater column of water in the profiled section. The projection 31, which ensures linear contact on the cross-member via the apex 32, makes it possible to render this effect negligible,

the flap, being actuated for a smaller height of water,
thus fulfilling its function in an improved manner.

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CLAIMS



1. Baffle capable of being mounted against a water drain hole (10) made in the outer face of the bottom cross-member (4) of a frame constituting the opening lining (1) of a door, window or other component, including a flat support (12) capable of being applied closely against this face in line with the hole, this support including means (23) for fixing to the cross-member and a flexible flap (17), preferably manufactured together with the support, having dimensions greater than those of the hole, characterized in that this flap is mounted so as to pivot on the support with respect to the cross-member so as to allow it to move outwards in relation to that face of the cross-member which includes the drain hole, leaving the latter clear so as to allow water contained in the cross-member to flow away freely towards the outside, the bearing of the flap on the face of the cross-member preventing, on the other hand, any ingress of water into the cross-member from outside.
- 20 2. Baffle according to Claim 1, characterized in that the drain hole (10) made in the bottom cross-member (4) of the frame has a rectangular profile.
3. Baffle according to Claim 2, characterized in that the flexible flap (17) has the same rectangular profile as the hole (10) and includes, on one of its small sides, a hinge (18) for pivoting on the support (12).
- 25 4. Baffle according to Claim 4, characterized in



that the hinge (18) is formed by a linking strip, having a zig-zag contour one end of which is linked to the support (12) and the other of which is joined to the flap (17), the adjacent parallel branches (19) of the strip being connected by bands (20) which are perpendicular to their direction and also fastened to the support and to the flap.

5 Baffle according to any one of Claims 1 to 4, characterized in that the flexible flap (17) includes, on
10 the periphery of its rectangular profile, a projecting area (31) having a cross-section, through a plane perpendicular to that of the flap, of substantially triangular shape, the base of which adjoins the plane of the flap and the apex (32) opposite this base bears on the face of
15 the cross-member (4), beyond the edges of the hole (10).

6. Baffle according to any one of Claims 1 to 5, characterized in that the support (12) includes two lateral bearing tabs (14, 15) on either side of the flexible flap, each equipped perpendicularly to its plane
20 with a cylindrical spigot (21) the surface of which is cut in order to form adjacent tongues (22) separated by longitudinal slits made from its end opposite the tab.

7. Baffle according to Claim 6, characterized in that each cylindrical fixing spigot (21) is associated
25 with a locking nail (23) suitable for being engaged along the axis of this spigot via the outside of the support, moving apart the tongues beneath the cross-member, this nail including a head (24) which is applied against the corresponding bearing tab (14, 15).



8. Baffle according to any one of Claims 1 to 7, characterized in that the support (12) includes a cover (13) having a curved profile, pivoted on this support about a flexible hinge (28), extending so as to be
5 parallel to a large side of the drain hole (10) above the latter, it being possible for this cover to be turned down over the flap in front of the cross-member.

9. Baffle according to Claim 8, characterized in that the support (12) includes means (29, 30) for locking
10 the lateral sides of the cover (13) onto the bearing tabs (14, 15) of the support, snap-fastening these sides onto projecting lugs carried by these tabs..

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