

Description

The invention relates to a skylight ventilator for the illumination and/or ventilation of buildings and with a housing bordering on a building aperture and with a plurality of mutually identical and preferably plate-like louvre flaps mounted on the housing for pivoting movement about rigid louvre spindles and which comprise, framed by longitudinal profiles, plates which consist of synthetic plastics material, particularly elongated extruded hollow members, the longitudinal profiles having, for disposition of the long side marginal portions of the louvres, accommodating spaces defined by profile webs or arms which engage around the tops and bottoms of the plate members (see e.g. DE-U-9013622.5).

Skylight ventilators of the type mentioned are used for lighting and ventilating buildings, as roof elements for example in factory shops and in similar applications. Usually the louvres can be moved into their relatively open or closed positions by a drive device, the louvres having marginal portions which overlap one another when they are closed. If these devices are also used for lighting buildings, then as a rule the plate members are produced from extruded transparent polycarbonate and are framed by the section members through interposed sealing elements. For this purpose, the sealing elements have to be fixed on correspondingly shaped projections on the profile webs and installed prior to assembly of the plate members. The expense entailed by the sealing elements is substantial, both from the structural and also from the assembly points of view, so that the prime costs of these devices are influenced.

The object of the present invention is to provide a skylight ventilator of the type mentioned at the outset, in which the plate members can be fixed in profile members easily and with minimal complication, the sealing integrity of the device when assembled being in no way jeopardised.

The present invention is a skylight ventilator for the illumination and/or ventilation of buildings and having a housing bordering on a building aperture and a plurality of mutually identical and preferably plate-like louvres mounted on the housing for pivoting movement about rigid louvre spindles and which comprise, framed by longitudinal profiles, plates which consist of synthetic plastics material, particularly elongated extruded hollow members, the longitudinal profiles having, for disposition of the long side marginal portions of the plate members accommodating spaces defined by profile webs or arms which engage around the tops and bottoms of the plate members, characterised in that the upper profile webs 3.2, 4.2 have deformably constructed web end portions which, after insertion of the plate members 5 into the accom-

modating spaces 6, 7 can be fitted into shaped recesses 8, 9 in the plate members.

In the case of the skylight ventilator according to the invention, the plate members can in a structurally simple manner be sealed without the need for a sealing element in that the plates are not only reliably held but are furthermore also sealed by the end portions of the webs which can be impressed into the shaped recesses in the plate members. Particularly also in conjunction with an integrally formed groove profile web, it is furthermore possible by the pushed-in end portions of the profile webs, reliably to pass into a rain gutter any water which falls during a shower of rain while the device is open.

By way of further explanation of the invention, attention is drawn to the ensuing description and to the accompanying drawings, in which:

Fig. 1 is a diagrammatic cross-sectional view of an embodiment of a louvre of a skylight ventilator according to the invention;

Fig. 2 is a cross-sectional view of the bottom longitudinal profile according to the embodiment of Fig. 1 when the louvre is in the open position, and

Fig. 3 shows the longitudinal profile which is at the top when the flap is in the open position, according to the embodiment of Fig. 1, in an individual cross-sectional illustration.

The drawings do not show the skylight ventilator in detail. However, it is intended that this should be provided with a housing which can be mounted on a building and in which a plurality of serially disposed plate-like louvres 1 according to the example shown in Fig. 1 are disposed one after another in an aligned relationship and which can be pivoted by a drive device out of their closed and into their opened position. The louvre has end walls 2 and, in the open position, a bottom longitudinal profile 3 and a longitudinal profile 4 which is at the top in the open position. The longitudinal profiles 3 and 4 have in each case, at the bottom, profile webs 3.1 and 3.2 and at the top they have profile webs 4.1 and 4.2. These top and bottom profile webs 3.1, 4.1, 3.2 and 4.2 in each case border in the longitudinal profile 3 and 4 a receiving space 6, 7 to accommodate the transparent plate member 5 which consists of polycarbonate and which is an extruded hollow profile member. This plate member 5 has end portions 5.1 and 5.2 situated in each case in the receiving spaces 6, 7 defined by the profile webs 3.1, 3.2, 4.1 and 4.2. These end portions 5.1 and 5.2 of the plate member 5 have in each case a shaped recess 9 and 8 produced for instance by a resistance shaping process. However, it is likewise possible to produce an appropriate shaped recess by other suitable means, for example also by mechanical finishing.

The profile web 3.2, 4.2 which is at the top when the plate member is in the assembled state (Fig. 1) is in its end portion deformable or elastically constructed so that after the plate member has been fitted, it can be pressed into the shaped recess 8, 9 in the plate member. For this purpose, in the embodiment illustrated, the end portion of the upper profile web is provided with a cross-sectionally substantially triangular notch 10 or 11 so that at this point the end portion can be bent downwardly, i.e. towards the plate body. On the front end edge, the relevant end portion of the upper profile web 3.2 or 4.2 has a nose or bead-like widening 12, 13 of its edge which, after folding over or after pushing in the upper profile webs 3.2, 4.2 is disposed in the shaped recess 8, 9 in the plate member. As a result of the correspondingly congruently constructed rounding both of the shaped recess 8, 9 in the plate body or the marginal widening 12, 13, the plate member 5 is sealed without the need for a sealing element and is also secured against displacement. The bent-over or angled-over end portion of the upper profile web 3.2 or 4.2 has its upper surface substantially adjacent the upper surface of the plate member 5 so that in the opening case, the water coming from there can be transferred to the channel 14 which is adjacent the profile web 3.2.

Claims

1. A skylight ventilator for the illumination and/or ventilation of buildings and having a housing bordering on a building aperture and a plurality of mutually identical and preferably plate-like louvres (1) mounted on the housing for pivoting movement about rigid louver spindles and which comprise, framed by longitudinal profiles (3, 4), plates which consist of synthetic plastics material, particularly elongated extruded hollow members (5), the longitudinal profiles having, for disposition of the long side marginal portions of the plate members accommodating spaces (6, 7) defined by profile webs (3.1, 3.2, 4.1, 4.2) or arms which engage around the tops and bottoms of the plate members (5), characterised in that the upper profile webs (3.2, 4.2) have deformably constructed web end portions which, after insertion of the plate members (5) into the accommodating spaces (6, 7) can be fitted into shaped recesses (8, 9) in the plate members.
2. A skylight ventilator as claimed in Claim 1, characterised in that the deformably constructed web end portions of the upper profile webs (3.2, 4.2) can be bent over.

3. A skylight ventilator as claimed in Claim 1 or 2, characterised in that, at their ends which, in the assembled state, face the plate members (5), the upper profile webs (3.2, 4.2) have a marginal widening (12, 13) which is directed towards the plate members (5).
4. A skylight ventilator as claimed in Claim 3, characterised in that the marginal widenings (12, 13) have a cross-sectionally nose-shaped form.
5. A skylight ventilator as claimed in any preceding claim, characterised in that the upper profile webs (3.2, 4.2) are provided with a shaped recess (10, 11) in their web end portions.
6. A skylight ventilator as claimed in Claim 5, characterised in that the shaped recesses (10, 11) on the profile web side are formed by notches or indentations.
7. A skylight ventilator as claimed in Claim 6, characterised in that the notches have a cross-sectionally triangular form.
8. A skylight ventilator as claimed in any preceding claim, characterised in that the shaped recesses (8, 9) in the plate member are formed by cross-sectionally rounded off narrowed portions.
9. A skylight ventilator as claimed in any preceding claim, characterised in that the shaped recesses (8, 9) in the plate members are formed by resistance shaping of the plate member (5).
10. A skylight ventilator as claimed in any preceding claim, characterised in that the longitudinal profile (3) which frames the bottom of the plate member (5) in the open position of the louvres (1) has, adjacent the upper profile web (3.2) a profile arm (15) which jointly with the upper profile web (3.2) forms a channel (14) which is open towards the plate member (5).

Patentansprüche

1. Oberlicht-Belüftungseinrichtung zur Beleuchtung und/oder Belüftung von Gebäuden und mit einem Gehäuse, das an eine Gebäudeöffnung angrenzt, und einer Mehrzahl von untereinander gleichen und vorzugsweise plattenförmigen, an dem Gehäuse um starre Belüftungsklappen-Wellen verschwenkbar angebrachten Belüftungsklappen (1), die aufweisen: durch Längsprofile (3, 4) eingerahmte Platten, die



The profile web 3.2, 4.2 which is at the top when the plate member is in the assembled state (Fig. 1) is in its end portion deformable or elastically constructed so that after the plate member has been fitted, it can be pressed into the shaped recess 8, 9 in the plate member. For this purpose, in the embodiment illustrated, the end portion of the upper profile web is provided with a cross-sectionally substantially triangular notch 10 or 11 so that at this point the end portion can be bent downwardly, i.e. towards the plate body. On the front end edge, the relevant end portion of the upper profile web 3.2 or 4.2 has a nose or bead-like widening 12, 13 of its edge which, after folding over or after pushing in the upper profile webs 3.2, 4.2 is disposed in the shaped recess 8, 9 in the plate member. As a result of the correspondingly congruently constructed rounding both of the shaped recess 8, 9 in the plate body or the marginal widening 12, 13, the plate member 5 is sealed without the need for a sealing element and is also secured against displacement. The bent-over or angled-over end portion of the upper profile web 3.2 or 4.2 has its upper surface substantially adjacent the upper surface of the plate member 5 so that in the opening case, the water coming from there can be transferred to the channel 14 which is adjacent the profile web 3.2.

Claims

1. A skylight ventilator for the illumination and/or ventilation of buildings and having a housing bordering on a building aperture and a plurality of mutually identical and preferably plate-like louvres (1) mounted on the housing for pivoting movement about rigid louvre spindles and which comprise, framed by longitudinal profiles (3, 4), plates which consist of synthetic plastics material, particularly elongated extruded hollow members (5), the longitudinal profiles having, for disposition of the long side marginal portions of the plate members accommodating spaces (6, 7) defined by profile webs (3.1, 3.2, 4.1, 4.2) or arms which engage around the tops and bottoms of the plate members (5), characterised in that the upper profile webs (3.2, 4.2) have deformably constructed web end portions which, after insertion of the plate members (5) into the accommodating spaces (6, 7) can be fitted into shaped recesses (8, 9) in the plate members.
2. A skylight ventilator as claimed in Claim 1, characterised in that the deformably constructed web end portions of the upper profile webs (3.2, 4.2) can be bent over.

3. A skylight ventilator as claimed in Claim 1 or 2, characterised in that, at their ends which, in the assembled state, face the plate members (5), the upper profile webs (3.2, 4.2) have a marginal widening (12, 13) which is directed towards the plate members (5).
4. A skylight ventilator as claimed in Claim 3, characterised in that the marginal widenings (12, 13) have a cross-sectionally nose-shaped form.
5. A skylight ventilator as claimed in any preceding claim, characterised in that the upper profile webs (3.2, 4.2) are provided with a shaped recess (10, 11) in their web end portions.
6. A skylight ventilator as claimed in Claim 5, characterised in that the shaped recesses (10, 11) on the profile web side are formed by notches or indentations.
7. A skylight ventilator as claimed in Claim 6, characterised in that the notches have a cross-sectionally triangular form.
8. A skylight ventilator as claimed in any preceding claim, characterised in that the shaped recesses (8, 9) in the plate member are formed by cross-sectionally rounded off narrowed portions.
9. A skylight ventilator as claimed in any preceding claim, characterised in that the shaped recesses (8, 9) in the plate members are formed by resistance shaping of the plate member (5).
10. A skylight ventilator as claimed in any preceding claim, characterised in that the longitudinal profile (3) which frames the bottom of the plate member (5) in the open position of the louvres (1) has, adjacent the upper profile web (3.2) a profile arm (15) which jointly with the upper profile web (3.2) forms a channel (14) which is open towards the plate member (5).

Patentansprüche

1. Oberlicht-Belüftungseinrichtung zur Beleuchtung und/oder Belüftung von Gebäuden und mit einem Gehäuse, das an eine Gebäudeöffnung angrenzt, und einer Mehrzahl von untereinander gleichen und vorzugsweise plattenförmigen, an dem Gehäuse um starre Belüftungsklappen-Wellen verschwenkbar angebrachten Belüftungsklappen (1), die aufweisen: durch Längsprofile (3, 4) eingerahmte Platten, die



- aus Kunststoffmaterial bestehen, insbesondere langgestreckte extrudierte hohle Elemente (5), wobei die Längsprofile zum Aufnehmen der in Längsrichtung verlaufenden Randabschnitte der Plattenelemente Aufnahme Räume (6, 7) aufweisen, die durch Profilstege (3.1, 3.2, 4.1, 4.2) oder -arme begrenzt sind, welche die oberen und unteren Enden der Plattenelemente (5) umgreifen, dadurch gekennzeichnet, daß die oberen Profilstege (3.2, 4.2) verformbar konstruierte Stegendabschnitte aufweisen, die nach Einsetzen der Plattenelemente (5) in die Aufnahme Räume (6, 7) in eingeformte Rücksprünge (8, 9) in den Plattenelementen eingepaßt werden können.
2. Oberlicht-Belüftungseinrichtung nach Anspruch 1, dadurch gekennzeichnet, daß die verformbar konstruierten Stegendabschnitte der oberen Profilstege (3.2, 4.2) übergebogen werden können.
3. Oberlicht-Belüftungseinrichtung nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die oberen Profilstege (3.2, 4.2) an denjenigen ihrer Enden, die im zusammengebauten Zustand den Plattenelementen (5) gegenüberliegen, eine Randverbreiterung (12, 13) aufweisen, die zu den Plattenelementen (5) weist.
4. Oberlicht-Belüftungseinrichtung nach Anspruch 3, dadurch gekennzeichnet, daß die Randverbreiterungen (12, 13) im Querschnitt gesehen nasenförmige Gestalt aufweisen.
5. Oberlicht-Belüftungseinrichtung nach einem beliebigen vorhergehenden Anspruch, dadurch gekennzeichnet, daß die oberen Profilstege (3.2, 4.2) in ihren Stegendabschnitten mit einem eingeformten Rücksprung (10, 11) versehen sind.
6. Oberlicht-Belüftungseinrichtung nach Anspruch 5, dadurch gekennzeichnet, daß die eingeformten Rücksprünge (10, 11) auf der Profilstegseite durch Kerben oder Eindrückungen gebildet sind.
7. Oberlicht-Belüftungseinrichtung nach Anspruch 6, dadurch gekennzeichnet, daß die Kerben im Querschnitt gesehen eine Dreiecksform aufweisen.
8. Oberlicht-Belüftungseinrichtung nach einem beliebigen vorhergehenden Anspruch, dadurch gekennzeichnet, daß die eingeformten Rücksprünge (8, 9) im Plattenelement durch im Querschnitt abgerundete Verengte Abschnitte gebildet sind.
9. Oberlicht-Belüftungseinrichtung nach einem beliebigen vorhergehenden Anspruch, dadurch gekennzeichnet, daß die eingeformten Rücksprünge (8, 9) durch Widerstandsformen des Plattenelementes (5) in den Plattenelementen gebildet sind.
10. Oberlicht-Belüftungseinrichtung nach einem beliebigen vorhergehenden Anspruch, dadurch gekennzeichnet, daß das Längsprofil (3), das den unteren Teil des Plattenelementes (5) einrahmt, in der geöffneten Stellung der Belüftungsklappen (1) angrenzend an den oberen Profilsteg (3.2) einen Profilarms (15) aufweist, der gemeinsam mit dem oberen Profilsteg (3.2) einen Kanal (14) bildet, der zum Plattenelement (5) hin offen ist.

Revendications

1. Lucarne d'aération, servant à l'éclairage et/ou l'aération d'un bâtiment et comprenant un châssis récepteur, disposé dans une baie d'un bâtiment, et de multiples éléments de jalousie (1), de préférence en forme de plaque, qui sont identiques les uns aux autres et sont montés sur le châssis de façon à pouvoir pivoter autour d'axes rigides d'élément de jalousie et qui comprennent des plaques enchâssées par des profilés longitudinaux (3, 4) et formées de pièces (5) en matière plastique synthétique, en particulier de pièces creuses extrudées de forme allongée, les profilés longitudinaux comportant, pour la mise en place des parties marginales de grand côté des pièces en forme de plaque, des cavités de logement (6, 7) délimitées par des ailes (3.1, 3.2, 4.1, 4.2) ou bras de profilé qui s'emboîtent autour des parties supérieures et des parties inférieures des pièces en forme de plaques (5), caractérisée en ce que les ailes supérieures de profilé (3.2, 4.2) comportent des parties d'extrémité d'aile à structure déformable qui, après insertion des pièces en forme de plaque (5) dans les cavités de logement (6, 7) peuvent être emboîtées dans des évidements conformés (8, 9) pratiqués dans les pièces en forme de plaque.
2. Lucarne d'aération selon la revendication 1, caractérisée en ce que les parties d'extrémité à structure déformable des ailes supérieures de profilé (3.2, 4.2) peuvent être repliées,
3. Lucarne d'aération selon la revendication 1 ou 2, caractérisée en ce qu'à leurs extrémités qui,



- à l'état assemblé, font face aux pièces en forme de plaque (5), les ailes supérieures de profilé (3.2, 4.2) présentent une partie marginale plus épaisse (12, 13) qui est orientée vers les pièces en forme de plaque (5). 5
4. Lucarne d'aération selon la revendication 3, caractérisée en ce que les parties marginales plus larges (12, 13) ont une forme de talon en section transversale. 10
5. Lucarne d'aération selon l'une quelconque des revendications précédentes, caractérisée en ce que les ailes supérieures de profilé (3.2, 4.2) présentent un évidement conformé (10, 11) dans leur partie d'extrémité d'aile. 15
6. Lucarne d'aération selon la revendication 5, caractérisée en ce que les évidements conformés (10, 11) prévus sur les faces des ailes de profilé sont formés par des entailles ou parties en retrait. 20
7. Lucarne d'aération selon la revendication 6, caractérisée en ce que les entailles ont une forme triangulaire en section transversale. 25
8. Lucarne d'aération selon l'une quelconque des revendications précédentes, caractérisée en ce que les évidements conformés (8, 9) de la pièce en forme de plaque sont formés par des parties rétrécies arrondies en section transversale. 30
9. Lucarne d'aération selon l'une quelconque des revendications précédentes, caractérisée en ce que les évidements conformés (8, 9) des pièces en forme de plaque sont formés par usinage par résistance de la pièce en forme de plaque (5). 35 40
10. Lucarne d'aération selon l'une quelconque des revendications précédentes, caractérisée en ce que le profil longitudinal (3) qui enchâsse la partie inférieure de la pièce en forme de plaque (5) dans la position ouverte des éléments de jalousie (1) comporte, au voisinage de l'aile supérieure de profilé (3.2), une branche de profilé (15) qui forme, en commun avec l'aile supérieure de profilé (3.2), une gouttière (14) qui est ouverte vers la pièce en forme de plaque (5). 45 50

55