Oct. 15, 1968 D. VAN DE KERKE 3,405,487

ARCHED SKYLIGHT WITH ATTACHMENT FLANGES

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Fig. 1

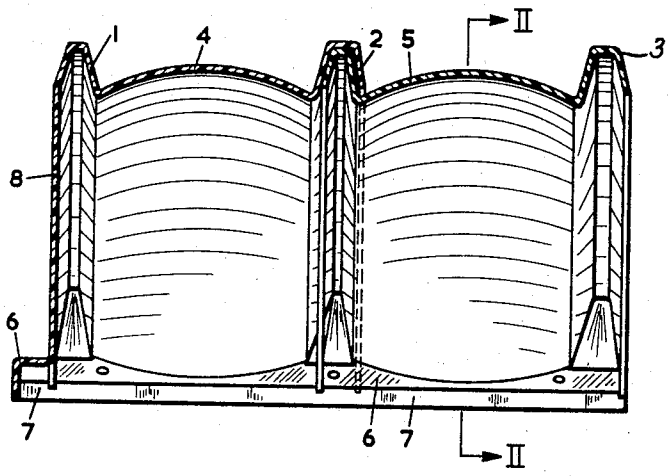


Fig. 2

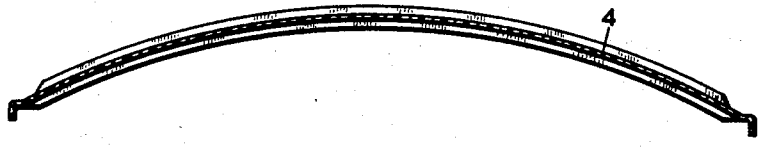
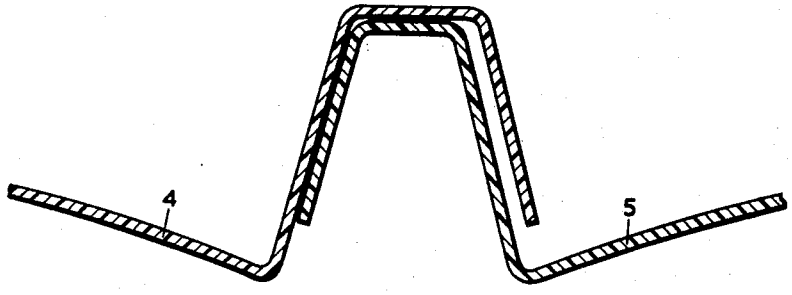


Fig. 4



INVENTOR

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BY Young & Thompson

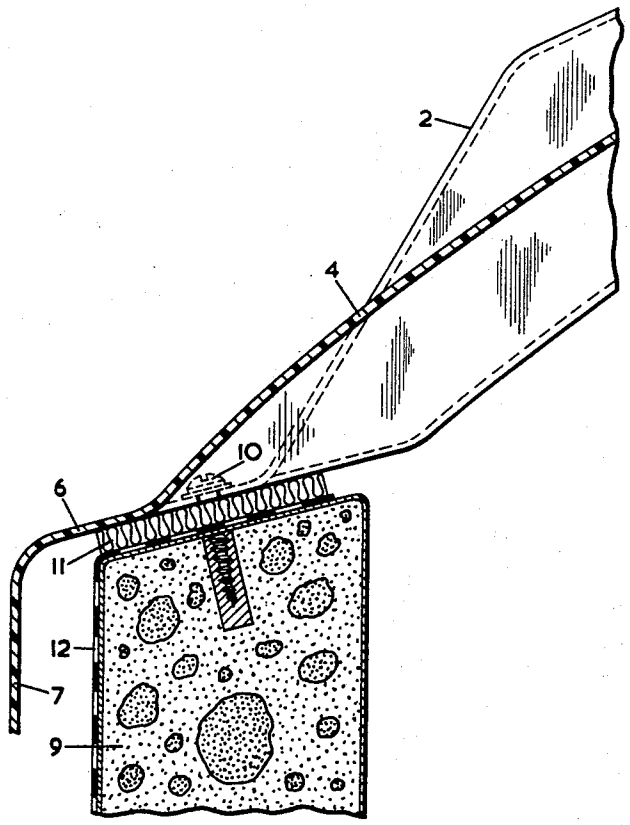
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Fig. 3



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United States Patent Office 3,405,487 Patented Oct. 15, 1968

3,405,487

ARCHED SKYLIGHT WITH ATTACHMENT FLANGES

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Filed Jan. 20, 1966, Ser. No. 521,990
1 Claim. (Cl. 52—200)

ABSTRACT OF THE DISCLOSURE

A skylight of translucent synthetic material such as glass fiber impregnated with polyester resin consists of a plurality of juxtaposed arched elements resting on their ends and each having integral hollow ribs along their side edges that overlap the hollow ribs of adjacent elements. Between the ribs, the elements are downwardly concave in both directions. Each arch element terminates in flanges at its opposite ends with vertically downturned outer edges. The elements at opposite ends of the skylight have integral end walls that are also flanged and that extend downwardly from the end hollow ribs.

The invention relates to a skylight of translucent synthetic material, such as polyester reinforced with glass fibre, consisting of a number of juxtaposed arched elements, each of which is provided with a number of vertical hollow ribs, which are also present on the edges of each element and with which the juxtaposed elements overlap each other. A skylight of this kind is disclosed in the Belgian patent specification 569,472. This known skylight involves the drawback that for the connection of the skylight to a building use must be made of moulded timber ledges fitting exactly into the moulding of the hollow ribs. Further this skylight presents difficulties as regards the achievement of a proper termination, for which a suitable arched construction of different material must likewise be employed.

The invention has for its object to furnish a skylight in which these drawbacks do not present themselves and which moreover has greater inherent strength, so that very large spans can be made, which are able to resist loads far exceeding the prescribed minimum load of 150 kg./sq. metre, for instance.

This object is achieved according to the invention by the feature that the parts between the hollow ribs are arched upwards transverse to the arching of the elements and that all the ribs and the arched intermediate zones merge at the ends into a flat flanged strip, which bends downwards in a high vertical edge, while the end elements of the skylight have a vertical wall extending downwards from the outermost rib, which wall merges into a flat flanged strip bent downwards at the edge, which is continuous with the strips at the ends of the end elements. By means of the intermediate archings, which attain an approximate height equal to one half the height of the hollow ribs, great strength is obtained. This feature, however, must be combined with the flat strip, provided with a downwardly directed bent edge or flange, which strip owing to its great moment of inertia prevents flattening of the arched intermediate zones under loads, while furthermore by means of the large vertical wall of the end elements not only is the problem of the termination of the skylight solved, but also very great strength is obtained. A secondary advantage attained is a very simple sealing, since it is sufficient to place the composite skylight on a rectangular frame of beams, which support only the edge zone and on which the elements of the skylight can be secured in a simple way with the aid of bolts or the like. The arched intermediate zones at the ends of the elements preferably extend slightly further outwards than do the hollow ribs. Irrespective of whether they are or are not constructed with an end wall, the elements can be made in a simple way on the same mould.

The invention will now be elucidated more fully by reference to the drawing.

FIG. 1 is a cross-sectional view of an end element according to the invention.

FIG. 2 is a cross-section along the line II—II in FIG. 1.

FIG. 3 shows, on a larger scale and in cross-section, the edge portion of an element with the fastening.

FIG. 4 shows in cross-section the overlapping of two adjacent elements.

The element shown in FIG. 1 comprises the high ribs **1**, **2**, and **3** with intermediate arched zones **4** and **5**.

At the ends of the element, ribs and intermediate zones merge into a flanged strip consisting of a flat part **6** and an edge **7** bent vertically downwards.

The element shown in FIG. 1 is an end element with a continuous end wall **8**, which is integral with the element and at the lower edge merges into a flanged strip also consisting of parts **6** and **7**, which forms a continuation of the strip at the ends of the element. The intermediate elements of the skylight, which overlap each other in the way shown in FIG. 4, are entirely similar to the element shown in FIG. 1, with the exception of the end wall **8**, which has been omitted in the intermediate elements. The flanged strip at the lower end of the end wall **8** is naturally also absent from the intermediate elements.

FIG. 2 illustrates the arched form of an element of FIG. 1 and is here shown for a span of 4 metres with ribs 10 cm. in height, intermediate arches 5 cm. in height, and a height of 50 cm. in the middle of the arch. Such an element is able to resist without difficulty a load of 300 kg./sq. metre and more. The flanged strips have a maximum width of 15 cm. and the bent edge has a height of 5 cm.

FIG. 3 illustrates the fastening of the elements on a supporting structure, which in this case is formed by part of a wall **9** made of concrete or similar material. From this figure it is clear that the rib **2** is slightly shorter than the intermediate arching **4**, while it is clear from this figure and FIG. 1 that a load on the arched intermediate zone can be taken very well by the moulding of the bent edge **6**, **7**.

The fastening is effected in a simple way with the aid of a screw **10**, which is secured in a hole of the wall **9** in some conventional way by means of a plug. Between the underside of the flanged strip **6** and the wall **9** a layer **11** of flexible material may be present, while underneath the head of the screw a sealing disc may be located. Between the flexible layer **11** and the wall **9** there is further a sealing strip **12**, e.g. of lodorite. In this way a very simple fastening and sealing is obtained.

What I claim is:

1. In a skylight of transparent synthetic material consisting of a number of juxtaposed arched elements supported by their end edges which define the longitudinal edges of the skylight, in which each said element has vertical hollow ribs along both edges of the element extending perpendicular to the longitudinal axis of the skylight with the hollow ribs of adjacent elements overlapping each other; the improvement comprising horizontally extending flat flanges on said end edges of said elements, downwardly extending edges on the outer edges of said flat flanges, and on the said elements at each end of the skylight a vertical wall extending downwardly from and

integral with the outermost vertical rib over the entire arch area, each said vertical wall at its lower edge having an integral horizontally extending flat flange and a downwardly extending edge along the outer edge thereof, said flange and edge of said vertical wall being integral with the said flanges and edges along said end edges of said end elements, said ribs having a shorter length in a direction perpendicular to the length of the skylight than the portions of said elements between said ribs thereby to provide regions along said flat flanges for the reception of fasteners adjacent the ends of said ribs.

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