Oct. 9, 1956 A. HOROWITZ 2,765,887

PROFILATED COVERING ELEMENT OF CHANNEL SHAPED CROSS SECTION FOR WALLS, ROOFS AND THE LIKE

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FIG:1

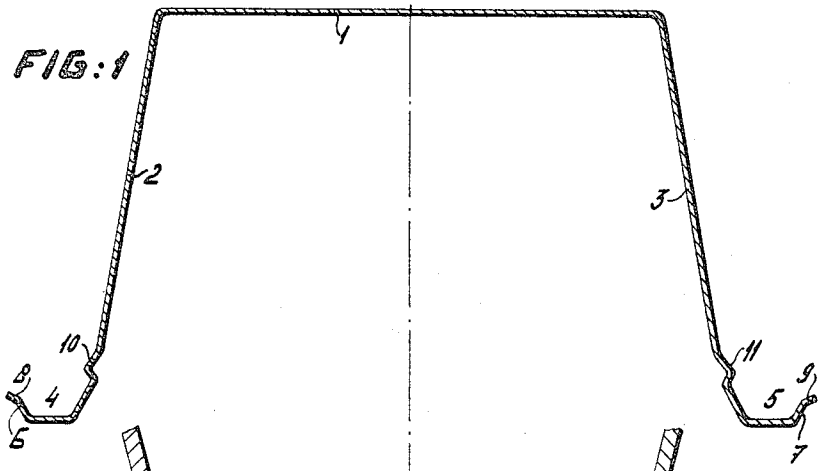


FIG:2

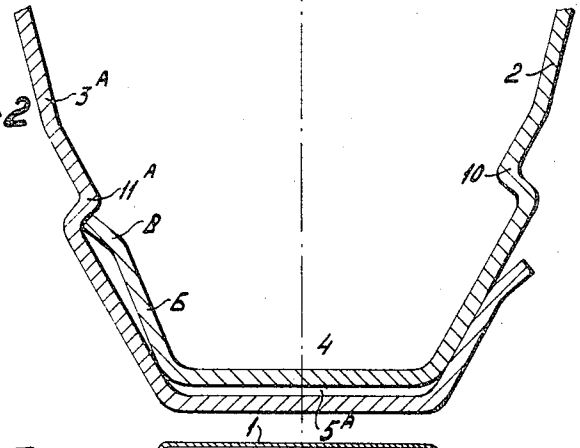
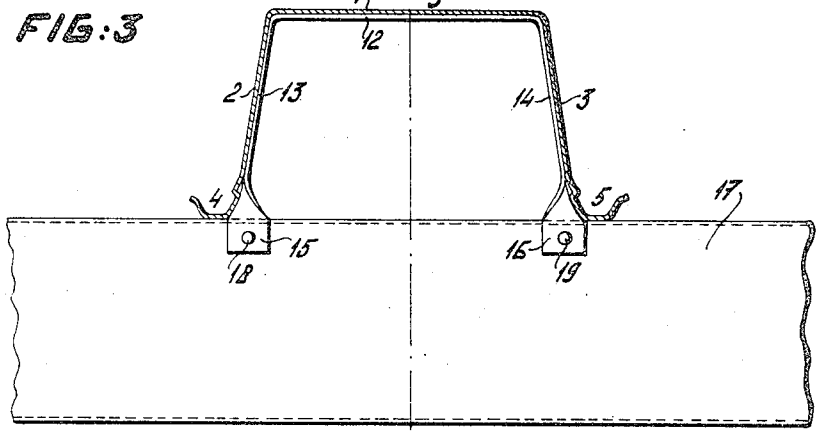


FIG:3



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FIG: 4

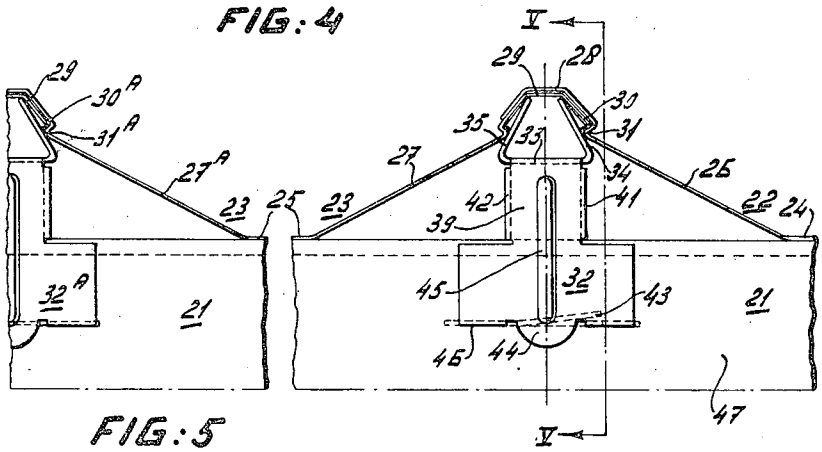


FIG: 5

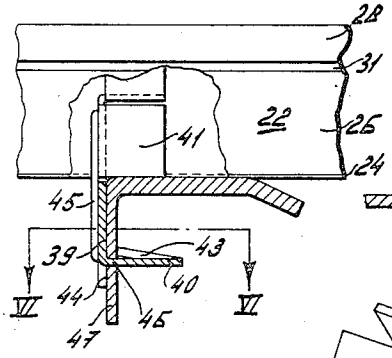


FIG: 6

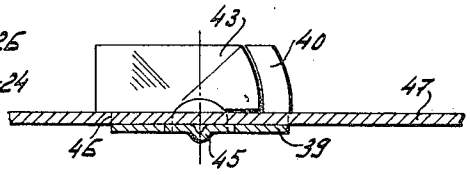
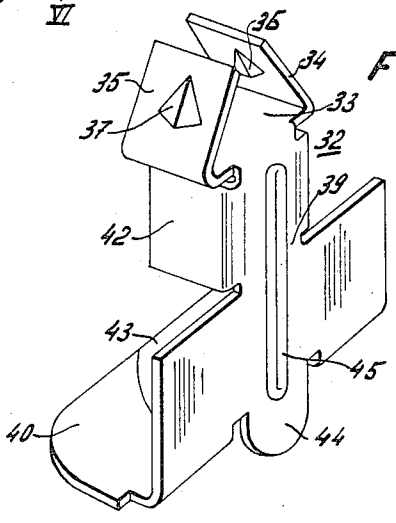


FIG: 9



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FIG: 8

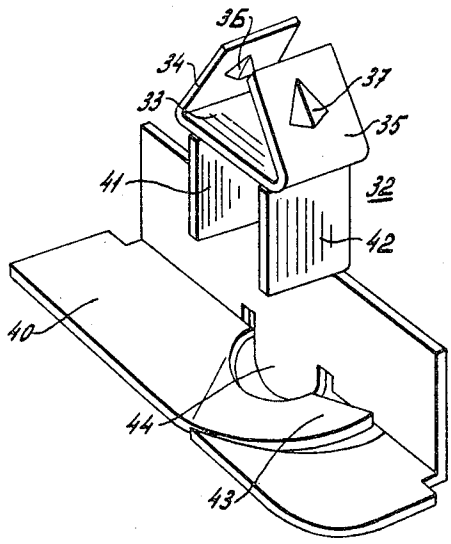
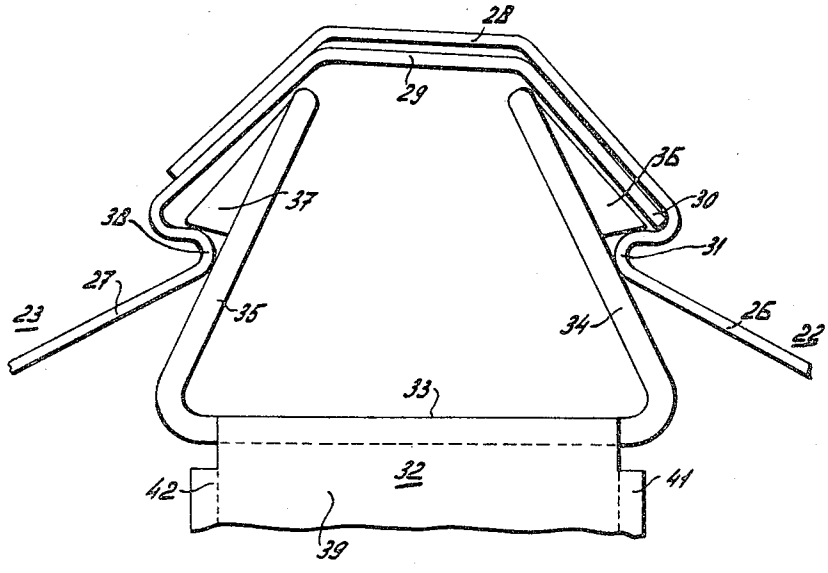


FIG: 7



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United States Patent Office

2,765,887

Patented Oct. 9, 1956

2,765,887

PROFILATED COVERING ELEMENT OF CHANNEL SHAPED CROSS SECTION FOR WALLS, ROOFS AND THE LIKE

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Application February 3, 1953, Serial No. 334,951

Claims priority, application Netherlands February 5, 1952

8 Claims. (Cl. 189—86)

This invention relates to a profilated covering element of thin sheet metal and of channel shaped cross section.

It is an object of this invention to provide covering elements of the above mentioned kind which can be arranged beside each other in interlocking engagement, so as to form a completely closed outer covering or bearing surface in wall or roofing structures.

According to the invention the cross sectional profile of the covering element comprises a central channel with outwardly inclined side walls and two smaller lateral channels of inverted shape having also outwardly inclined side walls, each of said smaller lateral channels being disposed along the free edge of an inclined side wall of the central channel and being formed by bending said free edge outwardly, the outer side wall of said lateral channels being of smaller height than the inner side wall thereof, said inner side wall being separated from the corresponding side wall of the central channel by an outwardly projecting rib located somewhat above the level of the free outer edge of the outer side wall of said lateral channels.

A further object of the present invention is to provide a wall or roof comprising a plurality of adjacent covering elements arranged in interlocking engagement by means of their adjoining lateral channels fitting into each other.

Another object of the invention is to provide a wall or roof in which the interlocked covering elements are turned with the opening of their central channel towards the supporting structure of the wall or roof.

Still another object of the invention is to provide a wall or roof in which the interlocked covering elements are turned with the bottom of their central channel towards the supporting structure of the wall or roof.

A still further object of the present invention is to provide the supporting structure of the wall or roof with a plurality of retaining members fitting resiliently within the interlocking lateral channels of two adjacent covering elements.

With these and other objects in view the invention will now be more fully described with reference to the accompanying drawings, in which some practical embodiments of the invention have been shown by way of example and in which:

Fig. 1 is a cross sectional view of a profilated covering element according to the invention;

Fig. 2 shows a partial cross section of the interlocking engagement of the adjoining lateral channels of two adjacent covering elements;

Fig. 3 is a cross sectional view of the element shown in Fig. 1 arranged upon a support with the opening of the central channel turned towards said support;

Fig. 4 is a cross sectional view of adjacent covering elements having the bottom of their central channel turned towards a supporting structure;

Fig. 5 shows a section taken on the line V—V in Fig. 4;

Fig. 6 is a section on the line VI—VI in Fig. 5;

Fig. 7 is a detail on a larger scale of the retaining member fittng within the interlocking lateral channels of two adjacent covering elements, and

Figs. 8 and 9 are perspective views of the retaining member, viewed respectively from the front and from behind.

Referring to Figs. 1, 2 and 3 of the drawings, the covering element comprises a web 1 of thin sheet metal and two outwardly inclined flanges 2, 3, constituting respectively the bottom and the side walls of a central channel. Each side wall 2 or 3 is provided at its free edge with a small lateral channel 4 or 5, respectively said lateral channels being of inverted shape with regard to the central channel 1, 2, 3 and having outwardly inclined side walls, of which the outer wall 6 or 7, respectively, is of smaller height than the inner side wall and is provided with an outwardly bent free edge 8 or 9, respectively. The inner side wall of the lateral channels 4 and 5 is separated from the corresponding side wall 2 or 3, respectively, of the central channel by an outwardly projecting rib 10 or 11, respectively, located somewhat above the level of the free outer edges 8 and 9 of the outer side walls of the lateral channels 4 and 5.

The covering elements are arranged adjacent each other with their adjoining lateral channels 4 and 5A in interlocking engagement (vide Fig. 2). The outer edge 8 of the outer side wall 6 of the uppermost channel 4 is locked behind the projecting rib 11A at the inner side wall of the lowermost channel 5A.

In Fig. 3 is shown, in what manner the covering elements may be secured to a supporting structure. A supporting bow 12 of the same shape as the cross sectional shape of the central channel of the covering element is fixed with the flat extremities 15 and 16 of its legs 13 and 14 to a supporting member 17 by means of bolts 18 and 19. If the supporting bow 12 is made from striplike material, the flat extremities 15 and 16 may be formed by simply twisting the ends of said strips at right angles.

It will be understood that due to the tapering walls of the central channel and the lateral channels of the covering elements, a number of said elements can be easily piled up to a compact stack, so that the transport of these covering elements is greatly facilitated.

In the embodiment shown in Figs. 4–9 the covering elements 22 and 23 are disposed with their web or bottom portion 24 and 25, respectively, turned towards the supporting member 21 and with the lateral channels 28 and 29 of their adjoining side walls 26 and 27 in interlocking engagement. As shown in Fig. 7, the free edge 30 of the outer side wall of the channel 29 belonging to the covering element 23 is engaged behind the rib 31 provided at the inner side wall of the adjoining channel 28 belonging to the covering element 22. It appears further from Fig. 4 that the rib 31A of the other lateral channel of the covering element 23 engages the free edge 30A of the outer side wall of the adjoining lateral channel of the next covering element.

The interlocking covering elements are secured to the supporting member 21 by means of retaining elements 32 and 32A. The upper end of said retaining elements, which are made from a flat metal plate, is carried out as a locking head comprising a web 33 and two resilient lips 34 and 35 tapering towards each other (vide also Figs. 8 and 9). The exterior face of each of said lips 34 and 35 is provided with a cam shaped projection 36 and 37, respectively, decreasing in height towards the free end of the lips. As appears from Figs. 4 and 7, the cam shaped projections 36 and 37 are clipped behind the projecting ribs 31 and 38, respectively, when the interlocking channels 28 and 29 of two adjacent covering elements 22 and 23 are pressed upon the locking head of the retaining element 32.

The body of the retaining element **32** consists of a back portion **39** and a base plate **40** which is bent substantially at right angles thereto. The back portion **39** is provided with lateral incisions and the parts located above said incisions are bent at right angles to the plane of said back portion, so as to constitute supporting walls **41** and **42** for the web **33** of the locking head. From the base plate **40** a portion is cut out which constitutes an upwardly projecting resilient cam **43**. The back portion **39** has a central extension **44** and is stiffened by a longitudinal pressed-out rib **45**.

In Figs. 4, 5 and 6 is shown, how the base plate **40** of the retaining element **32**, after having mounted said element upon the supporting member **21**, fits through a slit **46** provided in the flange **47** of said member **21**. The resilient cam **43** of the base plate **40** secures the retaining element **32** behind said flange **47**, since said cam will spring back again after having passed through the slit **46**.

The embodiment of the invention shown in Figs. 4–9 of the drawings presents the advantage that the exterior surface of the wall or roof is provided with a plurality of wide parallel channels which are particularly adapted to drain off water and the like. In the embodiment shown in Figs. 1–3 a suitable exterior covering may be provided comprising flat covering plates or slabs laid upon the bottoms **1** of the central channels.

What I claim is:

1. A profilated covering element of thin sheet metal, in which the cross sectional profile of the covering element comprises a central channel with outwardly inclined side walls and two identical smaller lateral channels of inverted shape having also outwardly inclined side walls, each of said smaller lateral channels being disposed along the free edge of an inclined side wall of the central channel and being formed by bending said free edge outwardly, the outer side wall of each of said lateral channels being of smaller height than the inner side wall thereof, said inner side wall being separated from the corresponding side wall of the central channel by an outwardly projecting rib located somewhat above the level of the free outer edge of the outer side wall of said lateral channels.

2. A profilated covering element as defined in claim 1, wherein the free outer edge of the outer side wall of each lateral channel is bent in outward direction.

3. A wall or roof, comprising a plurality of identical adjacent profilated covering elements of thin sheet metal, each having a cross sectional profile consisting of a central channel with outwardly inclined side walls and two identical smaller lateral channels of inverted shape having also outwardly inclined side walls, each of said smaller lateral channels being disposed along the free edge of an inclined side wall of the central channel and being formed by bending said free edge outwardly, the outer side wall of each of said lateral channels being of smaller height than the inner side wall thereof, said inner side wall being separated from the corresponding side wall of the central channel by an outwardly projecting rib located somewhat above the level of the free outer edge of the outer side wall of said lateral channels, the adjacent covering elements of the wall or roof being arranged in interlocking engagement by means of their adjoining lateral channels fitting into each other, the projecting rib on one side of a covering element engaging the free extremity of the outer side wall of a lateral channel of the adjacent covering element.

4. A wall or roof as defined in claim 3, wherein the central channels of the covering elements are turned with their opening towards a supporting structure for said wall or roof.

5. A wall or roof as defined in claim 4, wherein the covering elements are supported by bows of substantially the same shape as the cross sectional shape of the central channel of the covering elements.

6. A wall or roof as defined in claim 3, wherein the central channels of the covering elements are turned with their bottom towards a supporting structure for said wall or roof.

7. A wall or roof as defined in claim 6, wherein the supporting structure carries a plurality of retaining elements, each fitting resiliently within the interlocking lateral channels of two adjacent covering elements.

8. A wall or roof as defined in claim 7, wherein each retaining element is provided with a locking head comprising a web and two resilient lips tapering towards each other and each provided with a locking cam clipped behind the projecting ribs of the interlocking lateral channels.

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