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(11) Publication number:

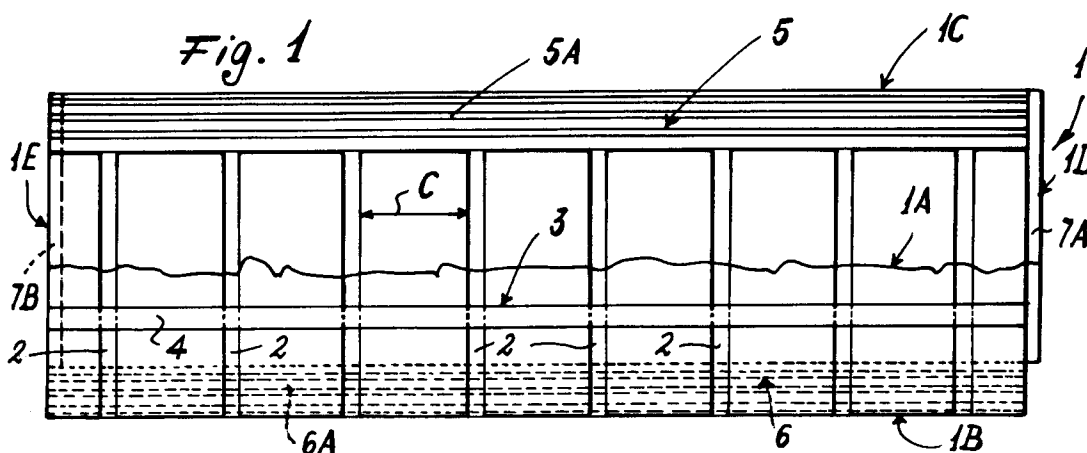
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EUROPEAN PATENT APPLICATION(21) Application number: **95103227.5**(51) Int. Cl.⁶: **E04B 7/20**, E04D 12/00,
E04D 3/38(22) Date of filing: **07.03.95**(30) Priority: **15.03.94 IT MI940478**(43) Date of publication of application:
20.09.95 Bulletin 95/38(84) Designated Contracting States:
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I-20129 Milano (IT)(54) **Insulating panel of variable pitch for roofing in general.**

(57) An insulating panel (1) for roofing in general, of the type comprising at least one longitudinal support and/or fixing element for tiles. The panel comprises, along two parallel sides (1B, 1C), means (5, 6) for

connecting one panel to the next, said means (5, 6) enabling the distance (D, D') between said sides (1B, 1C) of two connected panels to be varied in order to be able to lay different-length tiles on the panel.

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This invention relates to an insulating panel for roofing in general, of the type comprising at least one longitudinal element for supporting and/or fixing tiles.

Panels of the aforesaid type have been known for some time, they being generally rested adjacent to each other on the slab of the roof on which the tiles are to be laid. The panels can be fixed to the roof slab for example by adhesives or nails. Available tiles are known to be of different lengths, the most common tiles having a length for example of 33, 34 and 35 cm. As the tiles have to be coupled or fixed to the longitudinal support element, the correct type of panel to suit the tile used must be available.

An object of the present invention is to provide a panel of the aforesaid type which enables tiles of different length to be used.

A further object is to provide a panel which ensures good connection between one panel and the next, and is of simple construction.

These and further objects which will be apparent to the expert of the art are attained by a panel in accordance with the accompanying claims.

The present invention will be more apparent from the accompanying figures, which are provided by way of non-limiting example and in which:

Figures 1 and 2 are respectively a schematic plan view and a side view of a panel according to the invention;

Figure 3 is an enlarged schematic transverse lateral view of two panels connected together;

Figure 4 is a schematic side view of a panel completion element;

Figure 5 is an enlarged detailed transverse lateral view showing the connection between two panels with the additional elements inserted.

With reference to said figures, a panel 1 according to the invention, which in the illustrated example is of parallelepiped shape, comprises on its upper face 1A a plurality of transverse ventilation channels 2 and a longitudinal recessed portion 3 onto which the tiles are hooked or into which there is inserted a strip 4 (Figure 3) to which the tiles are fixed.

Along the major edges 1B, 1C of the panel there are provided means 5 and counter-means 6 for connecting two panels together in such a manner that the distance D (Figure 3) between one panel and the next can be varied. In the illustrated example said means and counter-means comprise two parts 5A and 6A shaped to allow a male-female connection, said parts 5A and 6A having a sawtooth profile, which in the illustrated example is shown with a trapezoidal cross-section, enabling the distance D between one panel and the next to be easily varied.

Along the minor sides 1D, 1E of the panel there are provided respectively a projecting portion 7A and a recessed portion 7B to also enable a butt-connection to be made between two panels along their minor sides.

Figure 4 shows an additional panel element comprising a sawtooth portion 8A of the same pitch and dimensions as those of the panel parts 5A and 6A. The element 8 has a length equal to the distance C (Figure 1) between one panel transverse channel 2 and the next, and is inserted between one panel and the next when these have been connected together and are separated by a distance D or D1 (Figures 3, 5). In this case the element 8 is inserted between one panel channel 2 and the next so as to fill the space between one and the next panel when the panels are separated by a distance D or D' (Figures 3, 5).

The element 8 advantageously comprises a weakening 8B, for example a longitudinal cut 9A and a longitudinal recess 9B, to enable the element 8 to be divided into two equal parts, so that the element 8 can be inserted when the distance D between the panels is equal to one pitch of the toothing (Figure 3).

The panels of the invention are advantageously constructed by milling an insulated panel marketed under the name of Styrofoam and manufactured by Dow Italia, it being formed of single-layer extruded expanded polystyrene, a high-density thermoplastic material which well supports both shear and compressive loads. The panels could however be constructed of any known substantially rigid insulating material suitable for the purpose, and also by moulding or cutting.

Assuming that the panel of the invention has a support element 3, 4 suitable for laying tiles of length 33 cm, then if the pitch of the sawteeth 6A, 5A is one cm the panel of the invention can also be used for tiles of length 34 and 35 cm.

To accommodate the particular type of tile, either no space or one or more spaces are left between one panel and the next.

Finally it should be noted that the illustrated embodiment is provided by way of example, and that numerous modifications are possible all falling within the same inventive concept, and in particular the means 5, 6 for connecting the panels together could be different from those described.

Claims

1. An insulating panel for roofing in general, of the type comprising a longitudinal support and/or fixing element for tiles, characterised by comprising, along at least two parallel sides (1B, 1C), means (5, 6) for its connection to one or more further panels, said means (5, 6) en-

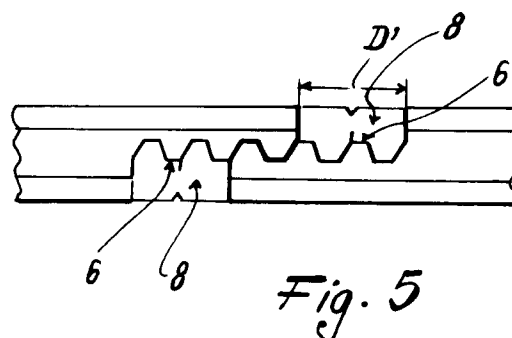
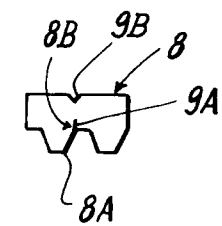
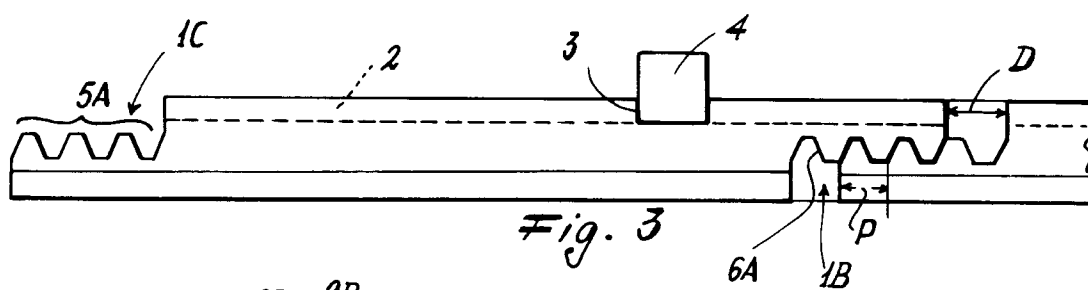
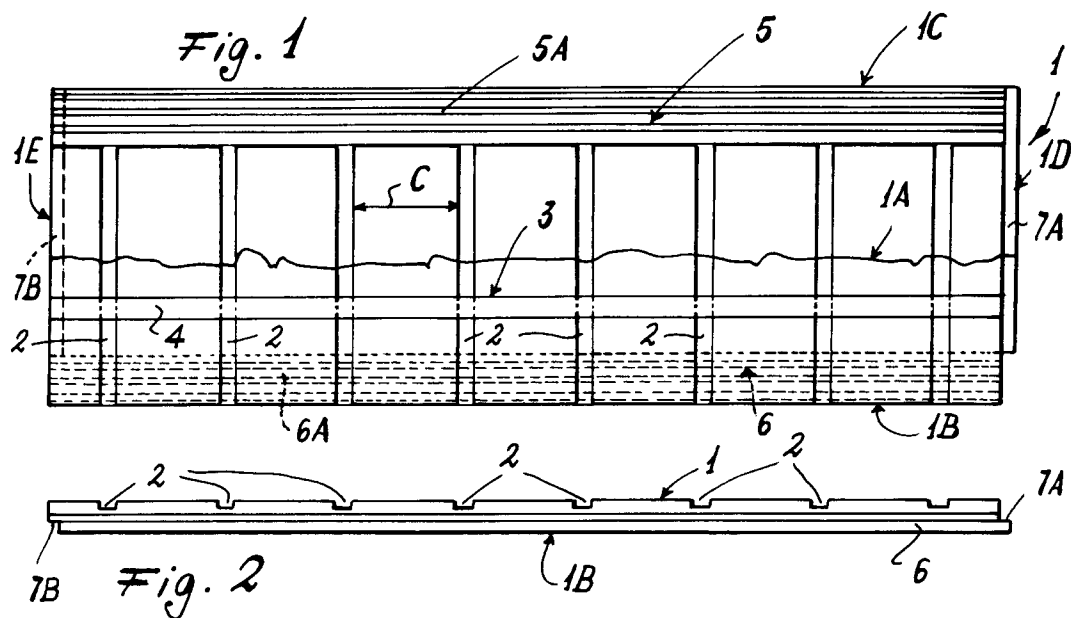
abling the distance (D, D') between said sides (1B, 1C) of two connected panels to be varied in order to be able to lay different-length tiles on the connected panels.

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2. A panel as claimed in claim 1, characterised in that said means (5, 6) comprise at least two parts (5A, 6A) presenting recessed portions and projecting portions to enable a male-female connection to be made. 10
3. A panel as claimed in claim 2, characterised in that said two parts (5A, 5B) have a sawtooth profile. 15
4. A panel as claimed in claim 1, characterised by comprising additional elements (8) to be inserted into the empty space between the sides (1B, 1C) of two panels when connected together. 20
5. A panel as claimed in claim 4, characterised in that the additional element (8) comprises a sawtooth-shaped part able to cooperate with said means (5, 6). 25
6. A panel as claimed in claim 5, characterised in that the additional element (8) comprises weakenings (8B) to facilitate its division into parts. 30
7. A panel as claimed in claim 4, characterised in that the additional element (8) has a length equal to the distance (c) between the panel transverse ventilation channels (2). 35
8. A panel as claimed in claim 1, characterised by being of substantially flat parallelepiped shape and comprising along its major sides (1C, 1B) said connection means (5, 6), and along its minor sides (1D, 1E) at least one projecting portion (7A) and, respectively, a recess (7B) to enable a butt-connection to be made. 40

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EUROPEAN SEARCH REPORT

Application Number
EP 95 10 3227

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X Y	DE-A-30 01 339 (W. SCHILLER) * page 8, paragraph 3 - page 9; figures 1-4 * ---	1-3 4,8	E04B7/20 E04D12/00 E04D3/38
X A	FR-A-2 658 220 (HEIDELBERGER KUNSTSTOFFTECHNIK) * page 2, line 9 - page 5, line 32; figures * ---	1 2,4,8	
Y A	EP-A-0 397 278 (SHELL) * column 3, line 33 - line 45; figures * ---	4,8 1,2,5-7	
A	DE-A-34 20 793 (FLEUCHAUS ET AL.) * page 8, paragraph 3; figures * ---	1-3	
A	CH-A-656 419 (M. AMBÜHL) * abstract; figures * ---	1	
A	FR-A-2 422 003 (B. HUE) * page 3, line 12 - page 4; figures * -----	1	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 29 June 1995	Examiner Righetti, R
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			