(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 103 333**
A1

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **83201276.9**

(22) Date of filing: **05.09.83**

(51) Int. Cl.³: **E 04 B 7/02**, E 04 C 2/50, E 04 D 12/00

(30) Priority: **13.09.82 NL 8203547**

(43) Date of publication of application: **21.03.84 Bulletin 84/12**

(84) Designated Contracting States: **AT BE CH DE FR GB IT LI LU NL SE**

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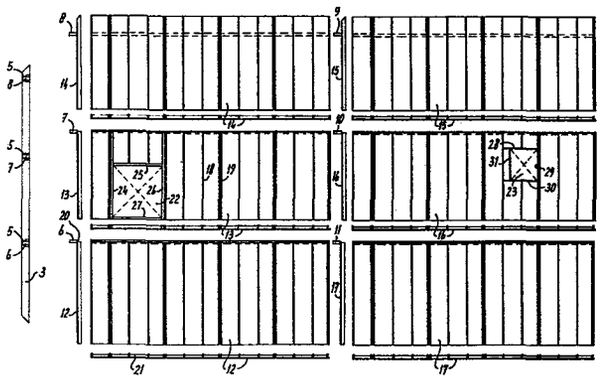
(54) Roof framework.

(57) Roof framework for a building structure, such as a house comprising a plurality of purlins (6, 7, 8, 9, 10, 11) passing through from wall (2) to truss or wall. On the purlins plates (12, 13, 14, 15, 16, 17) are attached lying in the plane of the roof and having thereon battens for tile-laths for example. The roof face is assembled from one or more panels (12, 13, 14, 15, 16, 17) prefabricated to size and each consisting of one or more plates. The plates are connected to at least one purlin (6, 7, 8, 9, 10, 11) along the whole length of said purlin. The faces of the walls (2) or trusses facing to each other are provided with U-shaped supporting brackets (5) between the legs of which the ends of the purlins (6, 7, 8, 9, 10, 11) fit.



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Roof framework.

The invention relates to a roof framework for a building structure, such as a house comprising a plurality of purlins passing through from wall to truss or wall and on which are attached plates lying n the plane of the roof and having thereon battens for tile-laths for example.

Such a roof framework is generally known. Usually it is assembled in situ from beams being prepared in contractor or carpenter workshop. It is also known to preassemble the trusses, to position these onto the wall locations at the building structure and to couple these with the purlins. In smaller building structures sometimes only purlins are sufficient traversing from wall to wall and said purlins being coupled with transversely extending rafters the lower ends of which are coupled with the building wall and the upper ends with a ridge beam. This assembly is closed with plates on which battens are provided and on said battens tile-laths may be positioned extending horizontally for fixing and supporting the roofing-tiles. Usually the plates are provided with an insulating layer from foam material between the battens. It is well known to deliver presized plates to the building structure.

However, the known roof framework still requires always relatively much time.

The object of the invention is to provide a roof framework, which can be manufactured very quickly.

According to the invention this object is achieved in that the roof face is assembled from one or more panels prefabricated to size and each consisting of one or more plates connected to at least one purlin along the whole length of said purlin and that the vertical faces of the walls or trusses facing to each other are provided with U-shaped supporting brackets between the legs of which the ends of the purlins fit. Consequently the principle on which the invention is based is that prefabricated panels and dependent on the dimensions of the roof face one or more are placed with a purlin attached thereto in prepositioned supporting brackets so that the whole structure of the roof framework is reduced to:

a. Prefabricating a panel and transporting it to the building site,

b. Attaching supporting brackets on vertical faces of the walls or trusses and

c. Hoisting by means of a hoisting means and positioning a panel with the purlin ends in the brackets.

Thereafter, only the necessary connecting means need to be provided in form of anchors and the roof framework is completed.

For a house the roof framework will usually have dimensions such that the roof face between gutter and ridge consists of three panels the lower and central one of which have the purlin at the upper edge, said purlin projecting out of the upper edge of the plate or plates and supporting with said projecting portion the lower edge of the higher panel. Thus, each panel has one purlin and at the lower panel and center panel these serve also the support of the panel positioned thereabove. This latter has a purlin being not at a location of the ridge but at a lower level.

In the center panel apertures may be provided having an edge reinforcement the thickness of which is at least equal to that of the battens, i.e. not thinner but if desired thicker. This edge reinforcement may serve the attachment thereon of roof windows or dormers.

Each panel may be assembled from adjacent plates attached to the purlin and provided with battens and further having a foamed plastic material between the battens. Thereby it is possible to assemble the panels itselves from plates being provided with apertures or not.

The way of construction of the roof framework according to the invention has the consequence that the ridge beam requires additional considerations.

The ridge beam may consist of two halves to be attached to each other with each half attached to a panel.

According to the invention it is preferred however, that at the location of the ridge the upper edges of the panels hardly join each other with the ends of the panels and battens beveled in a vertical plane and on the upper surface of several pairs of battens lying in a vertical plane a bracket is attached having an U-shaped portion being open upwards and in which the ridge beam or board is located. Then, a complicated construction is not necessary as one needs only to position the bracket on a number of battens and thereafter, to place

a ridge beam or board into the bracket.

The U-shaped brackets for receiving the purlin ends may be attached one by one on the correct locations on the vertical faces of the walls or trusses. However also herein, according to the invention a provision may be possible allowing a prefabrication. According to the invention this is achieved in that the U-shaped brackets for receiving the ends of the purlins are attached previously onto boards or wall strips provided onto vertical faces of wall respectively truss. Thus, one needs only to attach on the correct location the boards having connected the brackets thereto and thereafter, to position the panels therein.

Now, the invention will be elucidated by reference to the drawings.

Fig. 1 shows schematically the roof framework according to the invention in vertical cross-section.

Fig. 2 shows several parts of the roof framework.

Fig. 3 shows an enlarged cross-section of the ridge portion.

Fig. 4 shows an enlarged cross-section of a junction and

Fig. 5 shows an enlarged cross-section of the junction at the location of the lower edge.

Fig. 1 shows a floor 1 placed onto building walls not shown further and in a view onto the triangular wall portion 2 of end wall or intermediate wall of a building structure not shown. The roof framework consists of strips 3 and 4 in form of boards, positioned against the vertical face of the end wall 2 and to be connected in suitable way, for example with anchors to the wall and on which the U-shaped brackets 5 are attached. Each U-shaped bracket 5 receives the end of a purlin 6, 7, 8, 9 and 10 or 11 and each purlin is connected to a panel 12, 13, 14, 15, 16 and 17 respectively. The purlin 6 is attached to the panel 12, the purlin 7 to the panel 13, the purlin 8 to the panel 14 and so on.

Fig. 2 shows the strip 3 to enlarged scale having connected thereto brackets 5.

The panels 12 upto and including 17 are shown in top view in Fig. 2 as well as in side view with the side views at the left hand side of the top views.

Further Fig. 2 shows at the lower edge of each panel the view

onto the edge.

Each panel 12 upto and including 17 may comprise one single plate onto which the battens 18 are connected being doubled at some locations as indicated by 19. Each plate with battens is connected to the purlin and in the panels 12, 13, 16 and 17, the purlins 6, 7, 10 and 11 are provided at the edge such that the purlins project slightly as appearing most clearly from the side views. The free projecting face, for example 20, of each purlin 6, 7, 10 and 11 respectively represents a bearing face for the lower edge of a panel following in upward direction. So the purlin 6 defines with its projecting face 20 a bearing face for the lower edge of the panel 13.

The panels may be assembled also from a plurality of plates each having for example a width substantially defined by the spacing between two doubled battens 19, in which the seam between the plates engaging hardly each other is located then between said battens.

Between the battens a foam layer 21 known perse may be provided

The panels 12, 14, 15 and 17 are uninterrupted.

The panels 13 and 17 have apertures 22 and 23 respectively for connecting thereto a roof window for example. Said apertures are defined by laths 24, 25, 26 and 27 at the aperture 22 and laths 28, 29, 30 and 31 at the aperture 23.

The strip 3 shown at the left hand side in Fig. 2 is naturally provided also at the right hand side because both of the ends of the purlins should be received in the brackets. For a long roof said strips may be attached to the side faces of trusses positioned between the end walls.

Fig. 3 shows to an enlarged scale the ridge portion and shows thereby the upper ends of the strip 3 and 4 with the upper part of the panels 14 and 15 having thereon the battens 18 and the foam layer 21 lying therebetween. The purlins 8 and 9 respectively are spaced from the upper edge of the panels.

The brackets 5 are in U-shape and provided with flanges 32 for the connection to the strips 3 and 4 respectively.

The upper ends of the panels and of the strips are beveled vertically, such as indicated by the plane 33. On the ridge a bracket is positioned having an U-shaped portion 35 being open

upwards and in which the ridge beam 36 or board is located.

Fig. 4 shows the junction of for example the panels 15 and 16 at the level of the purlin 10 connected to the panel 16. Therein it is also shown how the lower edge of the panel 15 is supported on the projecting purlin 10 and connected with a hook 37.

Fig. 5 shows the connection of the lower panel 12 or 17 onto the floor or ceiling structure 1 by connection with hooks 37 to a beam 38. The lower edge of this panel has a finishing lath 39 from hard wood. This is located above a further gutter 40 attached to the building wall.

It will be clear that with this way of prefabrication a roof can be manufactured in a very quick way.

It will also be clear that the principle of the invention may be applied to other roof configurations.

CLAIMS.

1. Roof framework for a building structure, such as a house comprising a plurality of purlins (67,11) passing through from wall (2) to truss or wall (2) and on which are attached plates lying in the plane of the roof and having thereon battens (18,19) for tile-laths for example, characterized in that the roof face is assembled from one or more panels (12-17) prefabricated to size and each consisting of one or more plates connected to at least one purlin (6, 7, 8, 9, 10 or 11) along the whole length of said purlin and that the vertical faces of the walls (2) or trusses facing to each other are provided with U-shaped supporting brackets (5) between the legs of which the ends of the purlins fit.

2. Roof framework according to claim 1, characterized in that the roof face lying between gutter and ridge consists of three panels (12, 13, 14) the lower (12) and center (13) of which have the purlin (6,7) at the upper edge, said purlin projecting out of the upper edge of the plate or plates and with said projecting part supporting the lower edge of the higher panel(14).

3. Roof framework according to claim 2, characterized in that the center panel (13) is provided with at least one aperture (22) having an edge reinforcement with a thickness being at least equal to that of the battens (18,19).

4. Roof framework according to one or more of the preceding claims, characterized in that at the location of the ridge the upper edges of the panels (14, 15) hardly join each other with the ends of the panels (14, 15) and battens (18, 19) beveled in the vertical plane and on the upper face of several pairs of battens lying in a vertical plane a bracket (34) is attached having an U-shaped portion (35) being open upwards and in which a ridge beam (36) or board is located.

5. Roof framework according to one or more of the preceding claims, characterized in that the U-shaped brackets (5) for receiving the ends of the purlins (6-11) are connected previously to boards (3, 4) or wall strips provided on the vertical faces of wall and truss respectively.

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Fig-1

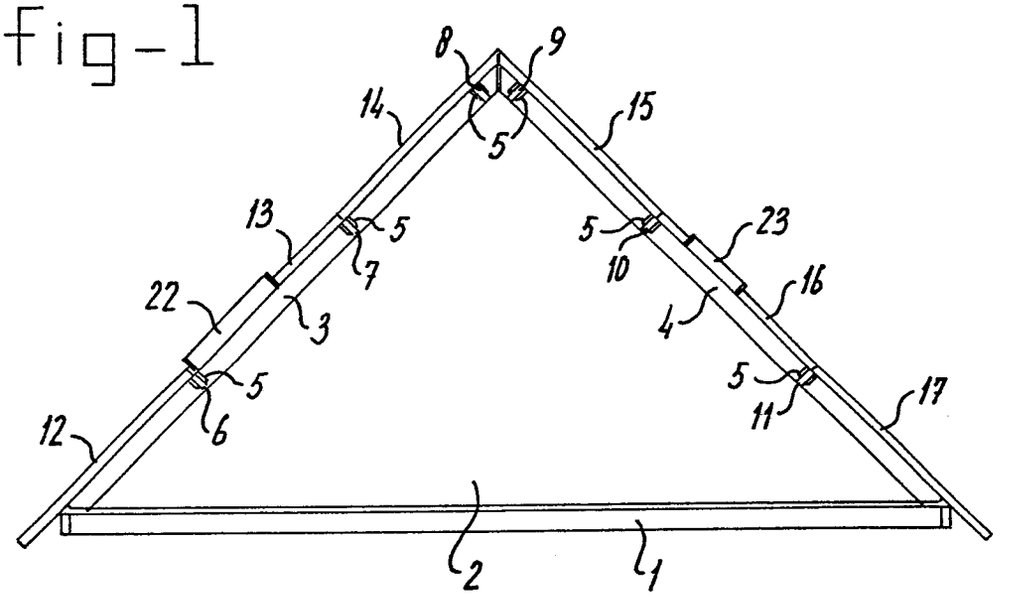
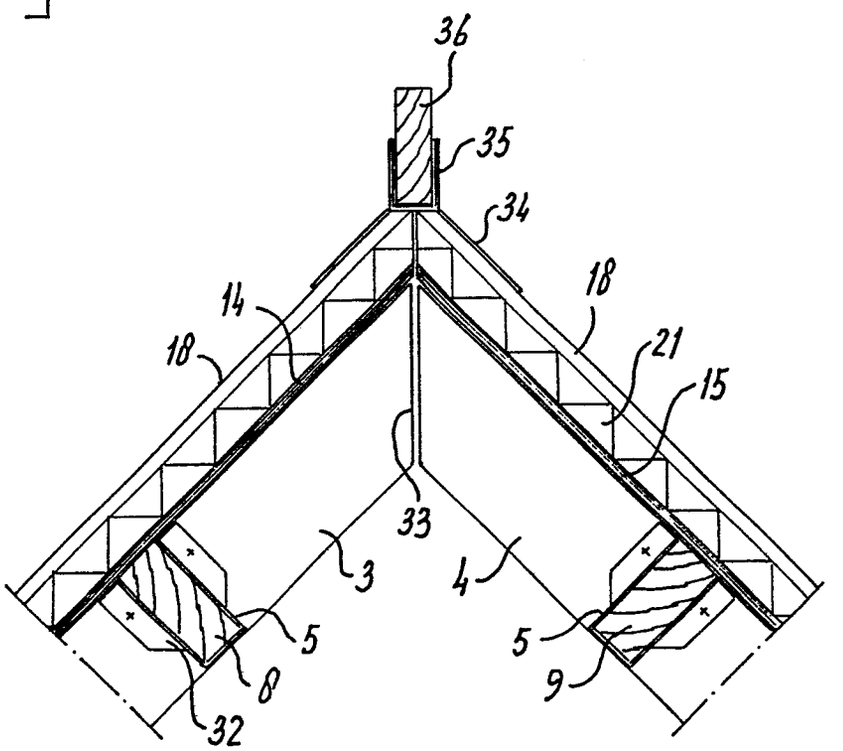


Fig-3



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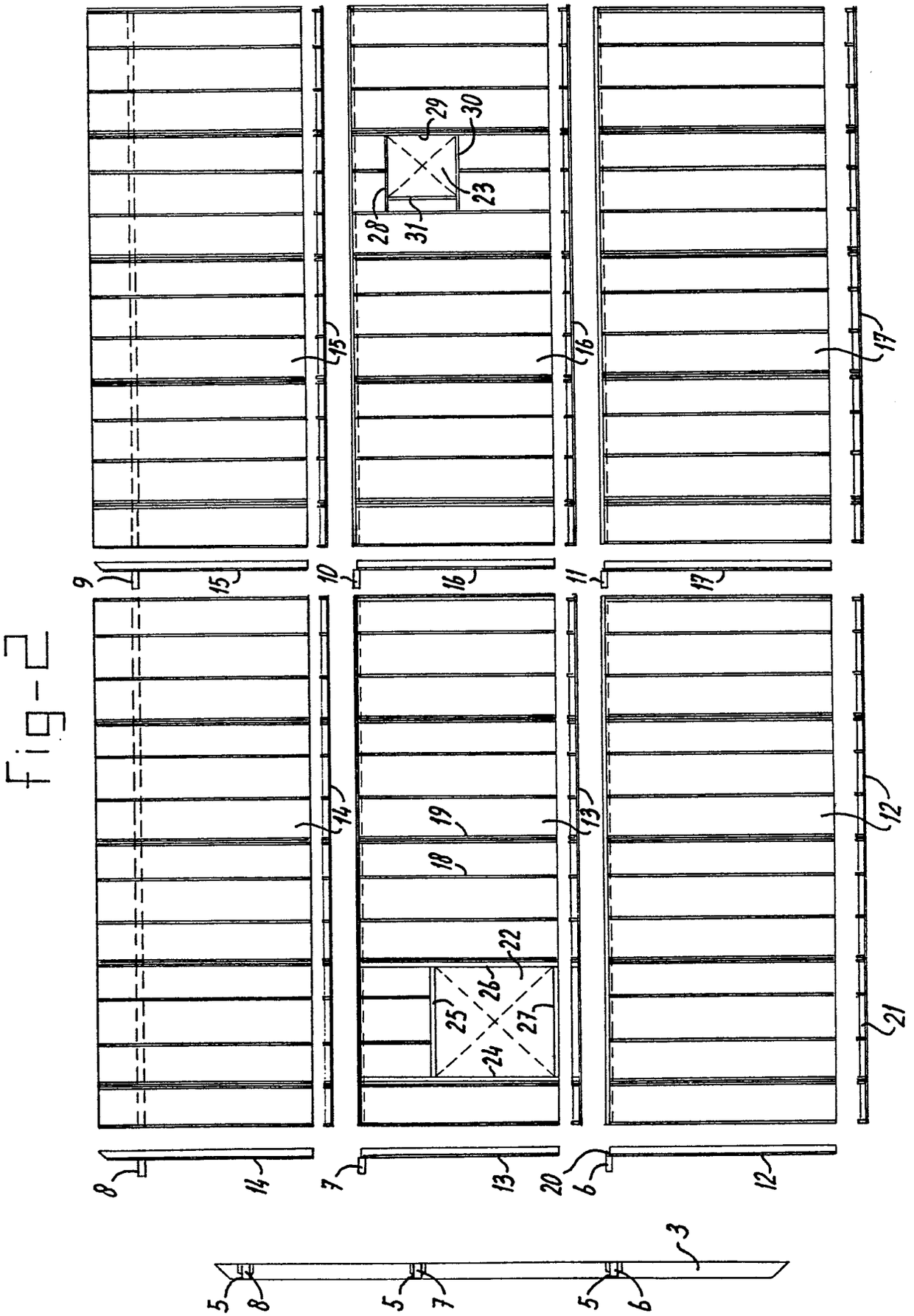

Fig-2

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Fig-4

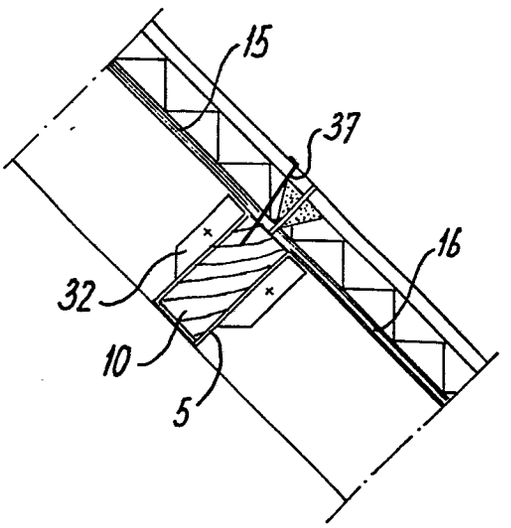
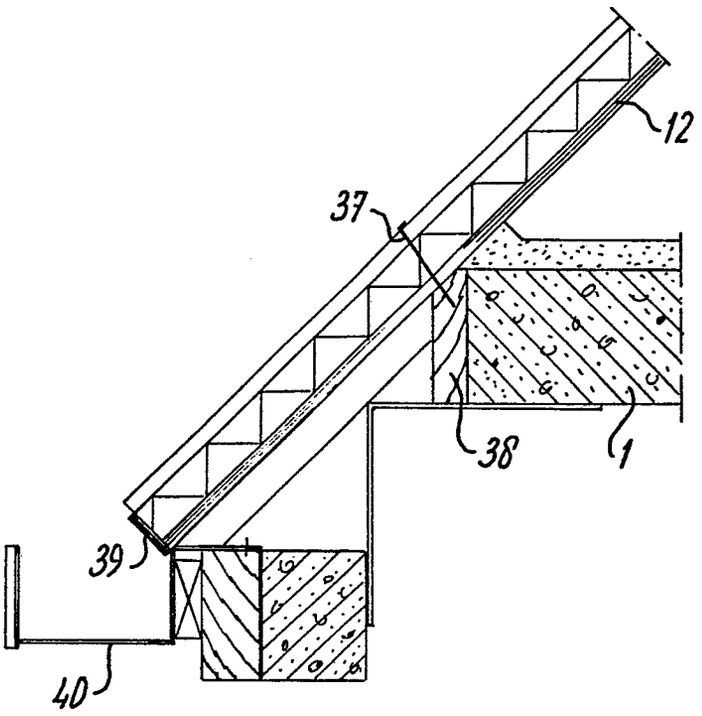


Fig-5



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Application number

EP 83 20 1276

EUROPEAN SEARCH REPORT

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. ³)
Y	FR-A-2 231 832 (GAY) * Page 1, line 8 - page 2, line 13; page 4, line 36 - page 5, line 3; page 6, lines 9-17, 30-34; figures 1,2 *	1	E 04 B 7/02 E 04 C 2/50 E 04 D 12/00
Y	CA-A- 968 124 (CHAMBERS) * Page 4, lines 9-20; page 5, lines 9,10; figures 1,2 *	1	
A	US-A-3 172 507 (BLYVEIS) * Column 1, lines 13-21; column 2, lines 6-11, 38,39; figure 1 *	1	
A	DE-A-1 658 965 (S.P.A.I.R.) * Page 13, line 9 - page 14, line 1; figures 15,16 *	1	TECHNICAL FIELDS SEARCHED (Int. Cl. ³)
A	FR-A-1 304 817 (AGRIPLAST) * Page 1, left-hand column, lines 1-11, right-hand column, lines 1-22; figures 1,2 *	1	E 04 B E 04 C E 04 D
A	NL-A-7 310 764 (HOUTKONSTRUKTIE VUREN) * Page 4, line 15 - page 5, line 24; figures 1a,1b,2 *	3	

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	11-10-1983	SPIEGEL R.P.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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D : document cited in the application
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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. ³)
A	GB-A-2 075 081 (REDLAND ROOF TILES) * Page 1, lines 85-94; page 2, lines 7-13; figures 1,2 *	4	
A	GB-A- 422 765 (DURMAN) * Whole document *	5	
A	DE-A-3 039 112 (LEGA-NORM)		
A	NL-A-7 712 483 (MONDIALIN-DUNSPAN)		
A	US-A-4 335 555 (SOUTHERLAND)		
			TECHNICAL FIELDS SEARCHED (Int. Cl. ³)

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