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

(11) EP 1 103 668 A1

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 158(3) EPC

(43) Date of publication:
30.05.2001 Bulletin 2001/22

(21) Application number: **00931292.7**

(22) Date of filing: **01.06.2000**

(51) Int. Cl.[7]: **E04D 1/04**, E04D 1/30

(86) International application number:
PCT/ES00/00192

(87) International publication number:
WO 00/75454 (14.12.2000 Gazette 2000/50)

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **03.06.1999 ES 9901429 U**

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(54) PLANAR-CONVEX TILE

(57) It comprises two convex segments (1) open on the bottom and a further two deeply grooved segments (2) open on the top, all of these internally staggered; as well as with respective grooves (2) centrally placed with respect to nearby staggerings, (12) of the flat end (8) of the tile and (13) of the convex end, while a ridge (3) on its lower surface (4) is interposed between a doubly raised lateral overlap (6) and a further ridge (7) also longitudinal to flat end (8) of the next tile.

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Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a roof tile from among mixed tiles with curved and plane surfaces incorporating means of insertion and mutual support, as well as means for guiding rain water.

[0002] The invention is characterised by a particular construction of the tile, based on four clearly differentiated components, two convex ones and two provided with deep grooves and an inner staggering, as well as consecutively respectively aligned; a raised lateral overlap area; and a reinforcement of the seat in the shore area.

BACKGROUND OF THE INVENTION

[0003] Asymmetric mixed construction piano-convex tiles are widely known, as well as use of their flat area, which is thinner than the convex area as a lateral connection element between said tiles.

[0004] Such roof tiles are generally provided with consecutive transverse double ridges and a further longitudinal end ridge on the flat side in order to gradually stop water which jumps as it is drained to the gutter, a construction which is really functional in the transverse sense as the drip has a simpler construction, but which is more complex for the transverse sense due to the lateral jumps of the water caused by the slope of the roof.

[0005] A further problem is that of piling which is punctual in the base of conventional roof tiles and thus largely unstable during packaging and piling.

[0006] The applicant is not aware of the existence of roof tiles of this sort which solve these problems with the simplicity and ease which is hereunder described.

DESCRIPTION OF THE INVENTION

[0007] The invention object of the present memory relates to a piano-convex roof tile, from among mixed roof tiles with short flat parts and greater curved parts, defining a uniform corrugated roof which incorporating means of insertion and mutual support of the tiles, as well as means of guiding and channelling rain water.

[0008] The invention is characterised by a particular construction of the tile which incorporates four clearly differentiated elements which, as seen from the bottom plane of the tile, are two convex inferiorly open areas on the right and two deeply grooved and inversely open ones, that is, toward the top plane and with an internal staggering, both with respect to the flat area and the convex are of the tile.

[0009] Both pairs of differentiated elements are respectively aligned consecutively along and parallel to the axis of the tile.

[0010] It further incorporates lateral overlapping areas raised to at least twice the conventional height, in order to prevent water from entering the roof, with the aid of a ridge of the lower surface of the tile placed on top, next to the free convex end, for support between said raised longitudinal ridge and another of a lower height and paced on the opposite flat end of the next tile, in addition to a reinforcement in the longitudinal seat of the tile with a thickening of the lower shore ridge and two alignments of additional different lateral gusset plates.

DESCRIPTION OF THE DRAWINGS

[0011] As a complement of the description being made and for a better understanding of the characteristics of the invention, the present description is accompanied by a set of drawings where for purposes of illustration only the following is shown:

Figure 1 shows a view of the top plane of the tile.

Figure 2 shows a view of the bottom plane of said tile.

Figure 3 shows two side views, one from the right and one from the bottom, the latter sketched to the front plane.

Figure 4 shows a sketch of two sections of the tile, a cross section showing the area in which one tile bears on another, fully sectioned and without showing its support on the tray, and another drawing of a longitudinal section along the axis of the deep consecutive grooves.

PREFERRED EMBODIMENT OF THE INVENTION

[0012] In view of the above, the present invention relates to a piano-convex roof tile from among mixed tiles which incorporate means of insertion and mutual support between tiles, as well as further means for guiding and channelling rain water, characterised in that the eave is continuous and without setbacks along the transverse alignment of the roof channels and ridge tiles, as it incorporates four clearly differentiated components, two convex components (1) open on the bottom and two deeply grooved components (2) open on the top, all placed internally staggered and consecutively aligned with respect to the longitudinal tile axis, as well as with the grooves (2) placed central to nearby staggerings, (12) of the tile flat end (8) and (13) of the convex end.

[0013] A ridge (3) of the bottom surface (4) next to the free convex end (5) s interposed between a doubly raised lateral overlap (6) in order to improve the water tightness of the roof and a further ridge (7) also longitudinal of flat end (8) of the next tile, completed by a thickening of the lower shore ridge (9) and two alignments of two different sets of additional lateral gusset plates (10)

and (11) and continuous and uniform supports along the entire length of the tile, which allow an improved load distribution in piling and improve stability of the packaging, and finally, define a continuous, setback free arrangement of ends of ridge tiles and consecutive aligned grooves (2).

[0014] The essence of this invention is unaltered by variations in materials, shape, size and arrangement of the component elements described in a non-limiting manner, and sufficient for reproduction by an expert in the field.

Claims

1. Plano-convex roof tile from among mixed tiles which incorporate means of insertion and mutual support between tiles, as well as further means for guiding and channelling rain water, where the eave is continuous and without setbacks along the transverse alignment of the roof channels and ridge tiles, characterised in that the it incorporates four clearly differentiated components:

- two convex components (1) open on the bottom, and
- two deeply grooved components (2) open on the top, all placed internally staggered and consecutively aligned with respect to the longitudinal tile axis; as well as with the grooves (2) placed central to nearby staggerings
- staggering (12) of the tile flat end (8) and
- (13) of the convex end while a ridge (3) of the bottom surface (4) next to the free convex end (5) is interposed between
- a doubly raised lateral overlap (6) and
- a further ridge (7) also longitudinal of flat end (8) of the next tile, completed by
- a thickening of the lower shore ridge (9) and
- two alignments of two different sets of additional lateral gusset plates (10) and (11), and continuous and uniform supports along the entire length of the tile and, finally, defining a continuous, setback free arrangement of ends of ridge tiles (1) and consecutive aligned deep grooves (2).

FIG.1

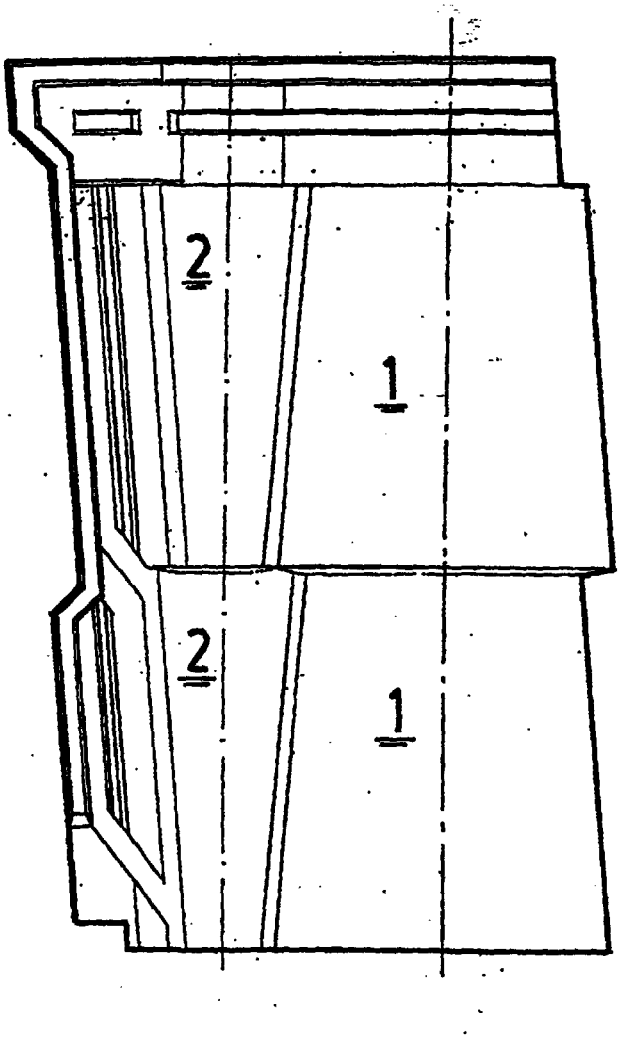


FIG. 2

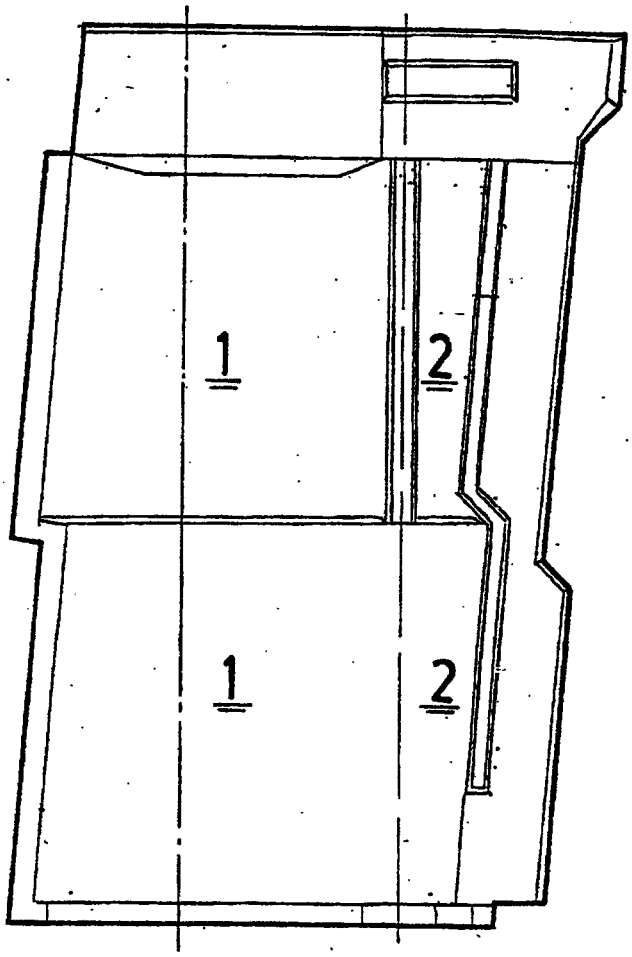
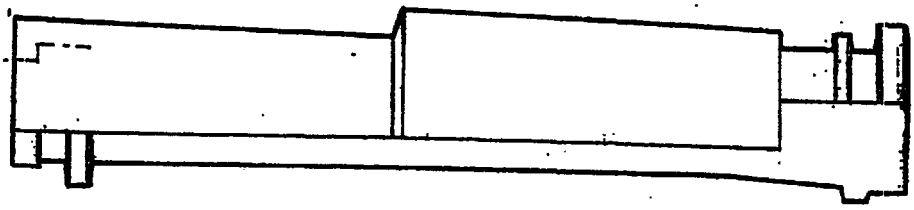


FIG.3



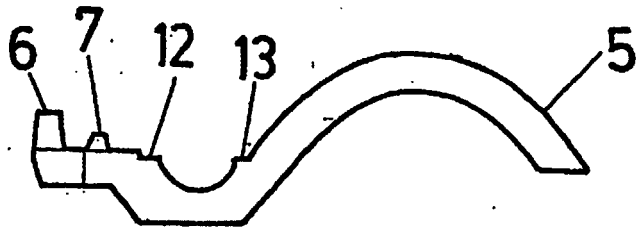
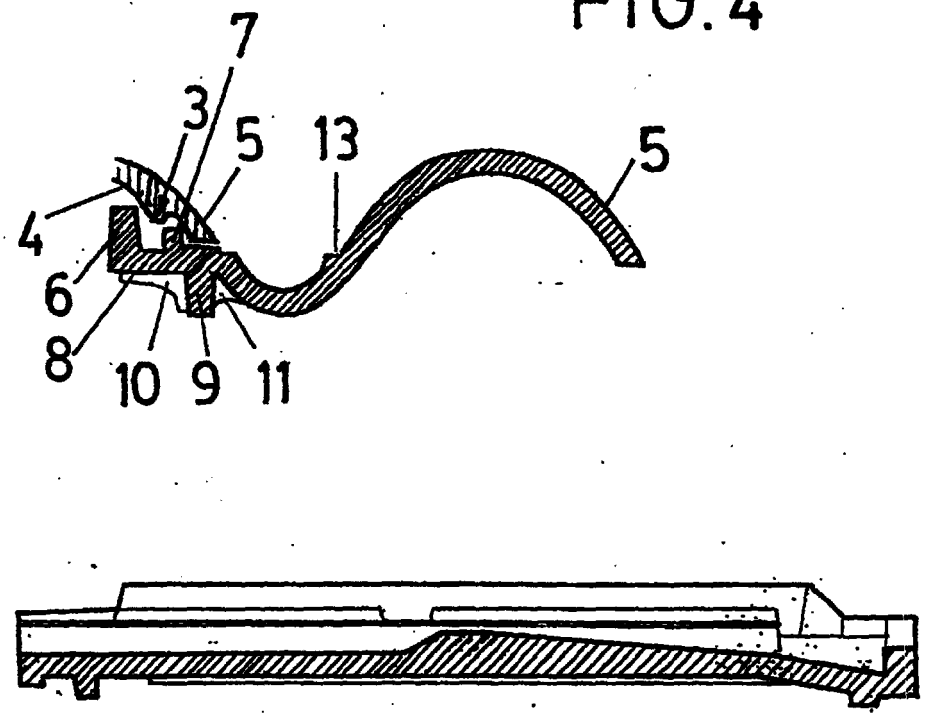


FIG. 4



INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 00/00192

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 : E04D 1/O4, 1/30
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 : E04D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
CIBEPAT, EPODOC, WPIL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FR 2335670 A (TUILERIE BRIQUETERIE FRANCAISE DE ROUMAZIERES), 15 July 1977 (15.07.77), the whole document	1
Y	FR 2263352 A (BISCH MARLEY), 03 October 1975 (03.10.75), the whole Document	1
Y	FR 1087801 A (L.F.LUDOWICI), 01 March 1955 (01.03.55), page 2, left Column, line 47-page 3, left column, line 9 ; figure 3	1
A	EP 0761899 A (M.C.LUDOWICI), 12 March 1997 (12.03.97), figure 2	1
A	FR 2497531 A (LAMBERT CERAMIQUES), 09 July 1982 (09.07.82) Figures 1,4	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
26 July 2000 (26.07.00)	03 August 2000 (03.08.00)
Name and mailing address of the ISA/ S.P.T.O	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International Application No
PCT/ ES 00/00192

Patent document cited in search report	Publication date	Patent familiy member(s)	Publication date
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Form PCT/ISA/210 (patent family annex) (July 1992)