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(72) Inventor: **Gioia, Francesco**
05039 Stroncone (Terni) (IT)

(74) Representative: **Forattini, Amelia et al**
c/o Internazionale Brevetti
Ingg. ZINI, MARANESI & C. S.r.l.
Piazza Castello 1
20121 Milano (IT)

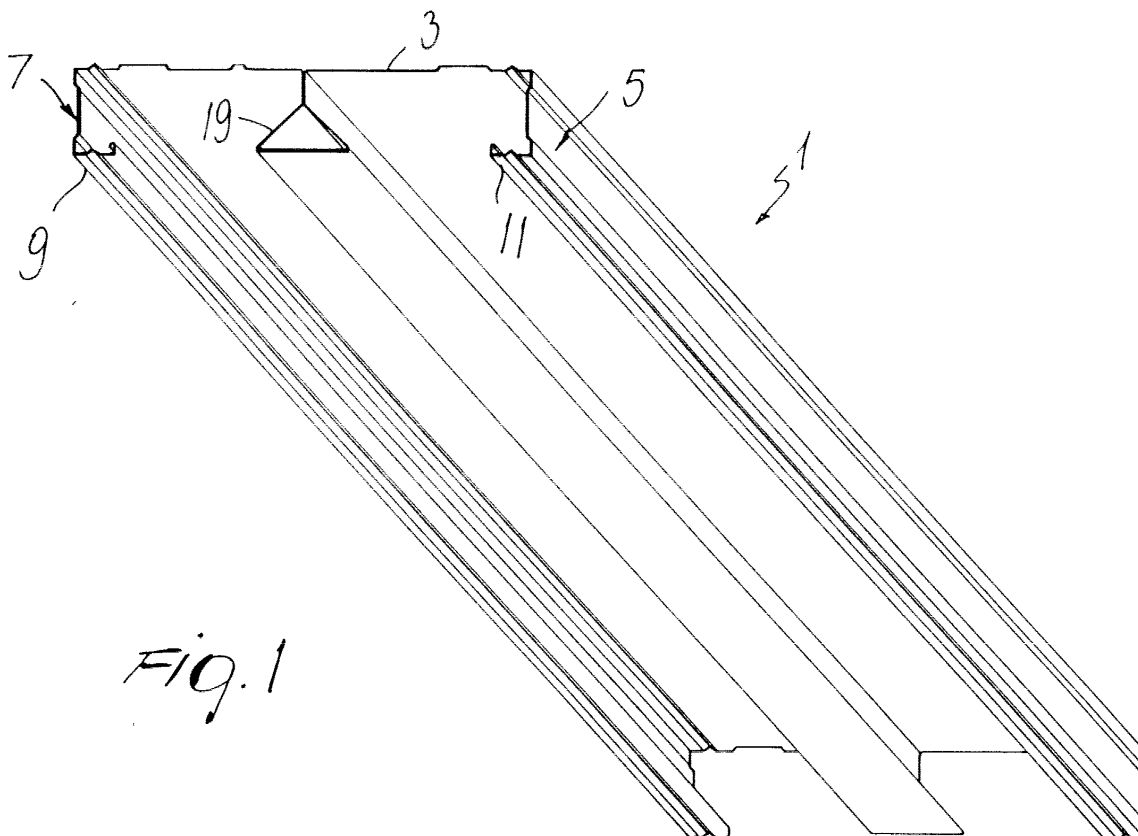
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(71) Applicant: **Emmesse S.R.L.**
05039 Stroncone (Terni) (DE)

(54) **Flooring member, particularly for scaffolds, shelves, mezzanines and the like**

(57) A flooring member (1,101), particularly for scaffolds, shelves, mezzanines and the like, comprising a metal plate which is folded so as to form a walking surface (3,103), two side walls (5,7,105,107) which lie lon-

gitudinally at the edges of the walking surface (3,103), and one or more central reinforcements (19,119). Each one of the side walls (5,7,105,107) includes at least one strengthening fold (13).



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Description

[0001] The present invention relates to a flooring member particularly for scaffolds, shelves, mezzanines and the like.

[0002] Scaffolds used for example in erecting or maintaining buildings are constituted by a tubular structure comprising a plurality of flooring members which constitute the surface on which the workers can walk.

[0003] Metal plate flooring members are commonly used which have standard sizes and are constituted by a walkable surface provided with heads which can be coupled to the tubular structure.

[0004] It is of course desirable that these flooring members be sufficiently strong, i.e., capable of withstanding the stresses to which they are subjected without deforming, and at the same time be lightweight, in order to facilitate their installation and transport.

[0005] The aim of the present invention is to provide a flooring member which is improved with respect to the flooring members that are currently in use.

[0006] A particular object of the invention is to provide a flooring member which is particularly strong and at the same time inexpensive from the point of view of manufacture.

[0007] Another object is to provide a flooring member which is reliable and durable.

[0008] This aim, this object and others which will become better apparent hereinafter are achieved by a flooring member, particularly for scaffolds, characterized in that it comprises a metal plate whose profile is shaped so as to form a walking surface, two side walls and one or more central reinforcements which lie longitudinally at the edges of the walking surface, each one of the side walls including at least one strengthening fold.

[0009] Further characteristics and advantages will become better apparent from the description of a preferred but not exclusive embodiment of the invention, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a perspective view of the metal plate that constitutes the flooring member for scaffolds according to the invention;

Figure 2 is a partial front sectional view of a portion of the flooring member for scaffolds according to the invention;

Figure 3 is a plan view of the flooring member for scaffolds according to the invention;

Figure 4 is a front sectional view of the flooring member for scaffolds according to the invention;

Figure 5 is a plan view of the flooring member for scaffolds according to another aspect of the invention;

Figure 6 is a front sectional view of the flooring member for scaffolds according to another aspect of the invention.

[0010] With reference to the above figures, the flooring member, particularly for scaffolds, generally designated by the reference numerals 1 and 101, comprises a metal plate whose profile is shaped so as to form a walking surface 3, 103 and two side walls 5, 105 and 7, 107 which lie longitudinally at the edges of the walking surface. The reference numerals, increased by 100, designate the similar components of the flooring member 101 shown in Figures 5 and 6.

[0011] Each side wall is folded so as to strengthen it. More particularly, each side wall is folded so as to form a horizontal portion, designated by the reference numerals 9, 109 and 11, 111 respectively, which is substantially parallel to the walking surface; moreover, each wall includes at least two strengthening folds 13, as shown more clearly in Figure 2.

[0012] Each horizontal portion also comprises a V-shaped longitudinal rib 15, 115 which is adapted to co-operate with a similar V-shaped longitudinal rib 17, 117 which is provided on each lateral portion of the walking surface 3, 103 of a flooring member which is stacked above the flooring member 1, 101. The presence of the ribs prevents transverse mutual sliding of the flooring members when they are mutually stacked for transport and storage.

[0013] The walking surface also comprises water drainage holes which are arranged longitudinally with respect to the flooring member with a preset spacing.

[0014] The flooring member also comprises at least one central reinforcement portion 19, 119 which is formed by a plurality of folds of the metal plate. The flooring member 1 shown in Figures 1 to 4 comprises a single central reinforcement portion 19, while the flooring member 101, which is wider and is shown in Figures 5 and 6, includes two central portions 119.

[0015] More particularly, the central reinforcement portion 19, 119 is formed by six folds of the metal plate, so as to constitute a triangular box-like member 21, 121 which runs longitudinally below the walking surface 3, 103 and is connected to it by means of a vertical portion 23, 123. The lower side of the triangle is further stiffened by means of two longitudinal ribs 30, 130.

[0016] The flooring member has, at its ends, heads 25 and 27 which are not obtained monolithically from the metal plate but are rigidly coupled thereto by cold forming, preferably by clinching and partial blanking, so as to avoid the use of added materials which are typical of the welding, riveting or nailing processes commonly used in these cases. The heads are identical and therefore allow to use the flooring member in both directions without forcing the operator to identify its orientation during installation.

[0017] Use of the flooring member according to the invention is fully similar to the use of conventional flooring members, but with some important advantages from the point of view of functionality and reliability.

[0018] The flooring member according to the invention is formed monolithically from a single metal plate,

with the only application of the heads by cold forming, and is therefore advantageous from the point of view of manufacture.

[0019] The particular construction of the flooring member, particularly of the side walls and of the central reinforcement, makes it particularly strong and reliable, to the full advantage of personnel safety and of flooring member durability.

[0020] The presence of the drainage holes, for example, prevents accumulations of liquids due to rain or work on the building, which are unpleasant and cause damage over time.

[0021] The particular reinforcements of the side walls and of the walking surface make the flooring member particularly strong and resistant to the impacts that can occur for example during assembly and disassembly and during transport.

[0022] In practice, it has been observed that the invention achieves the intended aim and objects, a flooring member for scaffolds having been provided which is particularly strong and at the same time easy to manufacture.

[0023] The device according to the invention is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept; all the details may furthermore be replaced with technically equivalent elements.

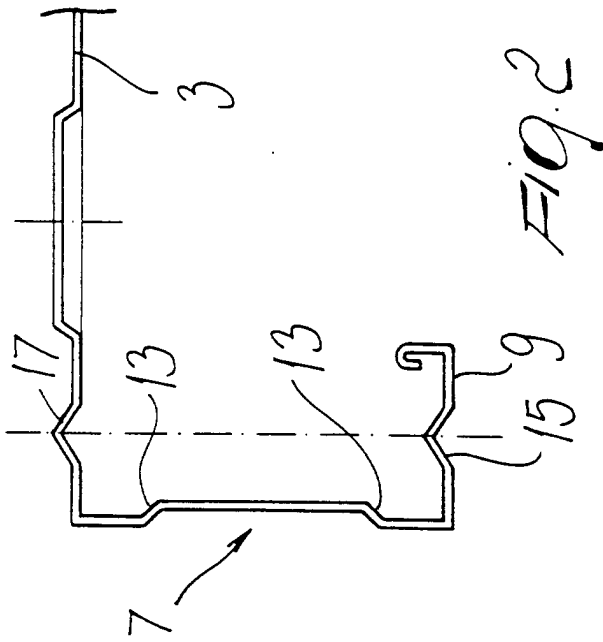
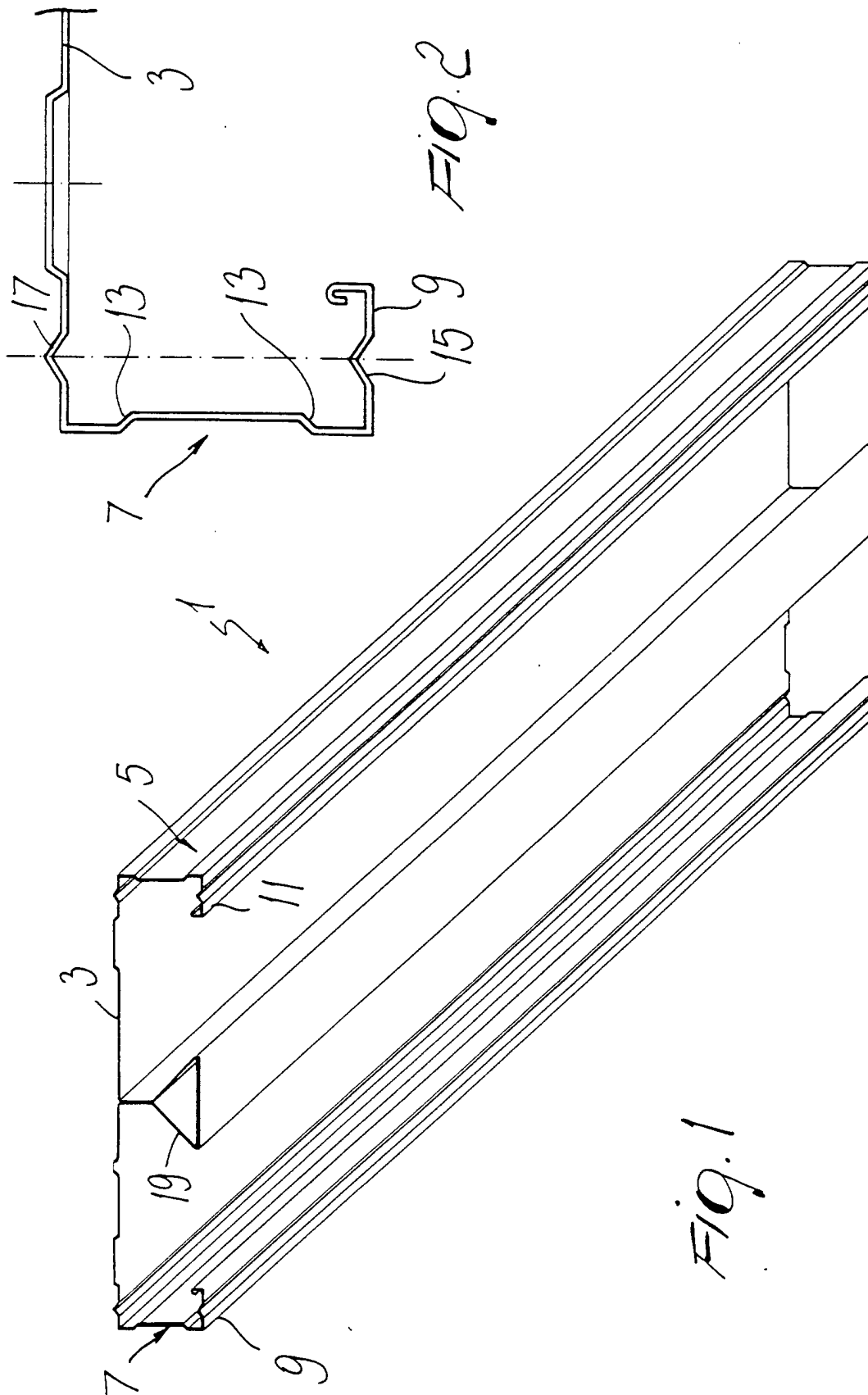
[0024] The materials used, as well as the dimensions, may of course be any according to requirements and to the state of the art.

Claims

1. A flooring member, particularly for scaffolds, **characterized in that** it comprises a metal plate whose profile is shaped so as to form a walking surface, two side walls and one or more central reinforcements which lie longitudinally at the edges of the walking surface, each one of the side walls comprising at least one strengthening fold.
2. The flooring member according to claim 1, **characterized in that** each one of said side walls comprises at least one horizontal portion which is substantially parallel to said walking surface.
3. The flooring member according to claim 1 or 2, **characterized in that** each one of said side walls comprises at least two strengthening folds.
4. The flooring member according to one or more of the preceding claims, **characterized in that** said horizontal portion comprises a V-shaped longitudinal rib which is adapted to cooperate with a similar V-shaped longitudinal rib provided on each lateral portion of said walking surface of a flooring member which is stacked above, in order to prevent trans-

verse sliding among said flooring members.

5. The flooring member according to one or more of the preceding claims, **characterized in that** the horizontal walking surface comprises water drainage holes.
6. The flooring member according to one or more of the preceding claims, **characterized in that** said central reinforcements comprise a central reinforcement portion which is formed by a plurality of folds and ribs of said metal plate.
7. The flooring member according to one or more of the preceding claims, **characterized in that** said central reinforcements comprise two central reinforcement portions, each portion being formed by a plurality of folds and ribs of said metal plate.
8. The flooring member according to one or more of the preceding claims, **characterized in that** each one of said central reinforcement portions is formed by six folds of said metal plate, so as to constitute a triangular box-like member which runs longitudinally below said walking surface and is connected thereto by means of a vertical portion.
9. The flooring member according to one or more of the preceding claims, **characterized in that** it comprises, at its ends, heads which are rigidly coupled thereto by cold forming.
10. The flooring member according to one or more of the preceding claims, **characterized in that** said heads are rigidly coupled thereto by way of clinching and partial blanking operations.
11. The flooring member according to one or more of the preceding claims, **characterized in that** it comprises intermediate reinforcements which are open at the front and are folded so as to not allow the formation of condensation or of accumulations of liquids.



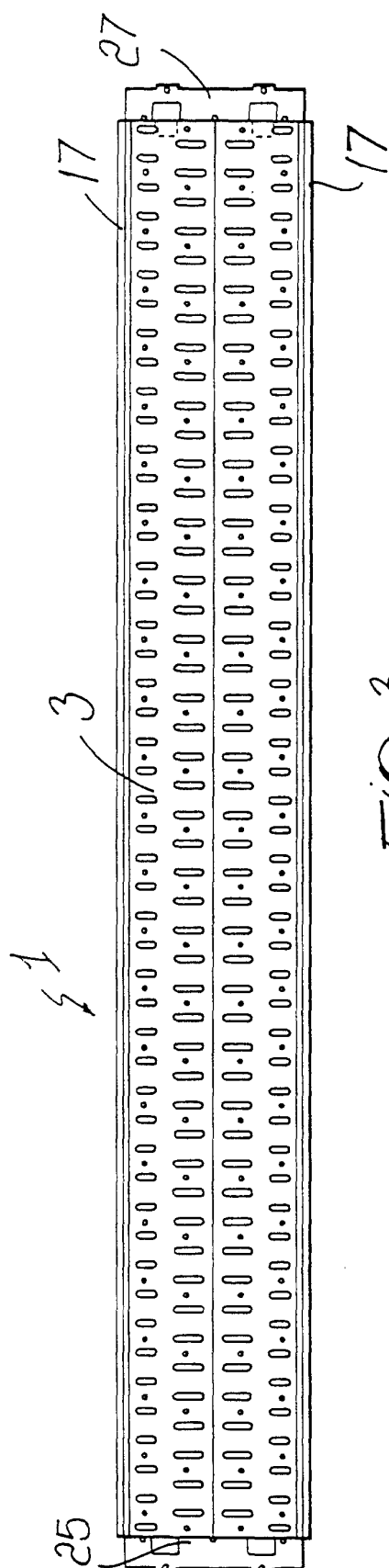


Fig. 3

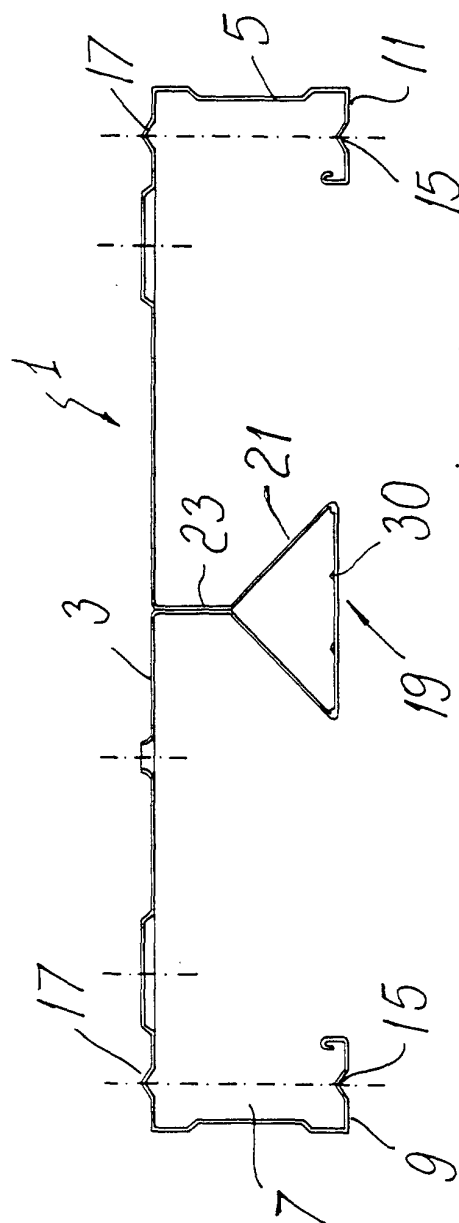


Fig. 4

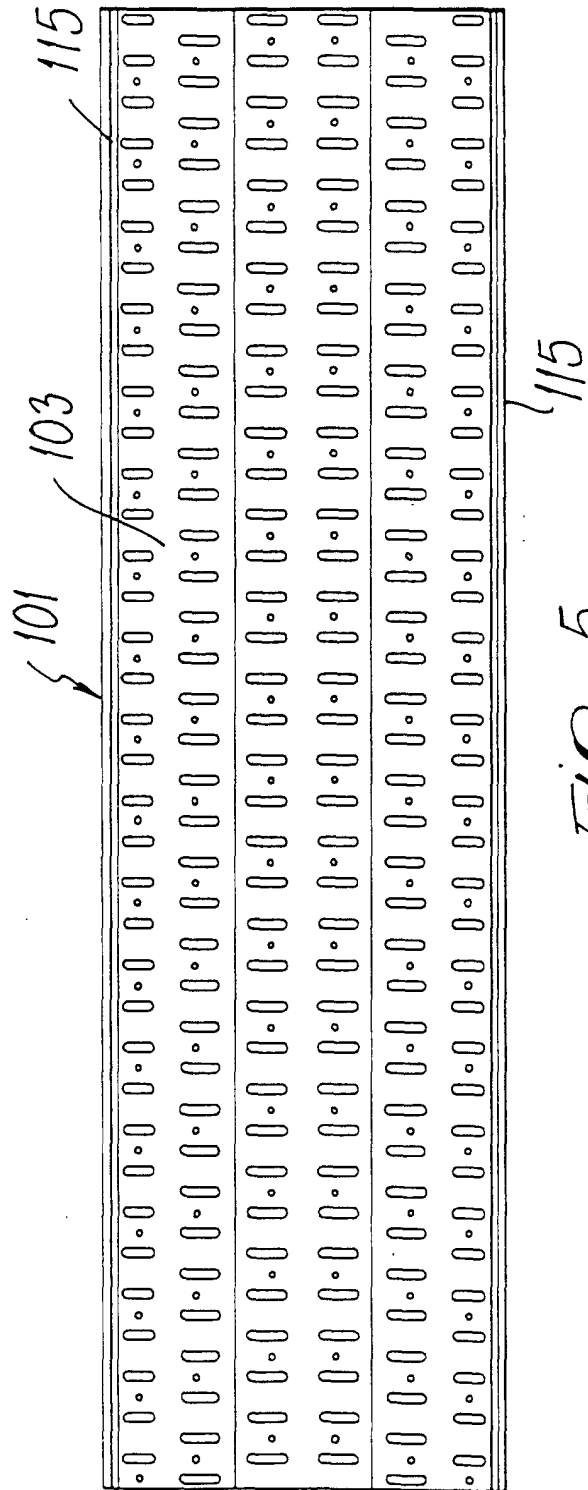


Fig. 5

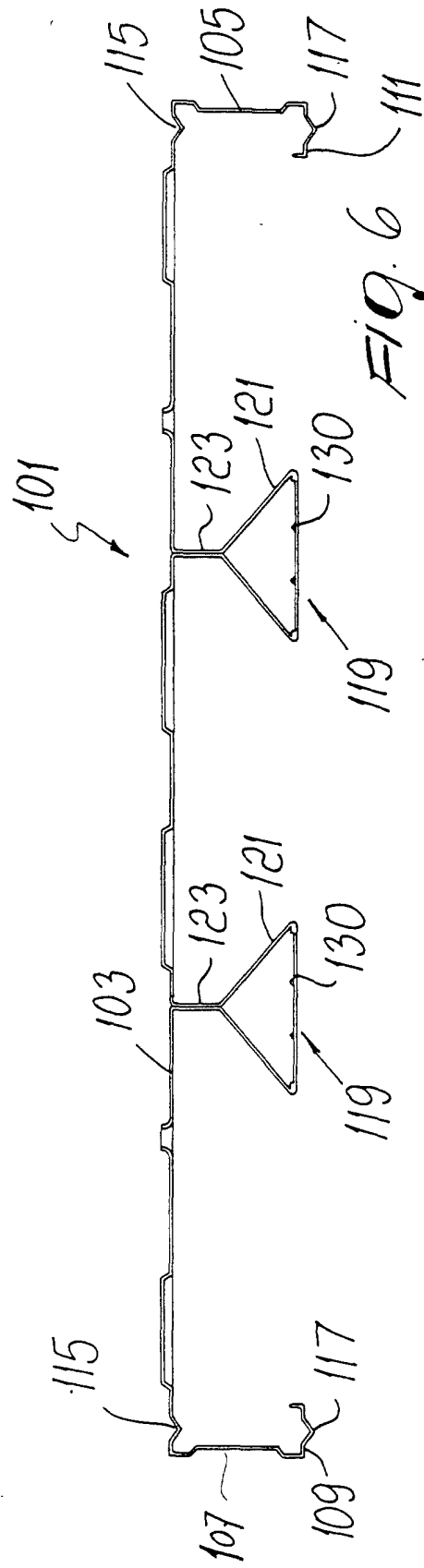


Fig. 6



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EUROPEAN SEARCH REPORT

Application Number
EP 01 10 9548

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	DE 195 15 062 A (LANGER RUTH GEB LAYHER) 31 October 1996 (1996-10-31) * column 4, line 62 - column 5, line 64 * * column 9, line 16 - column 10, line 17 * * figures 1,2,5.1-6.3,7-9,11-14 *	1-8,11	E04G1/15
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E04G A47B
Place of search		Date of completion of the search	Examiner
THE HAGUE		23 July 2001	Andlauer, D
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			

EPO FORM 1503 03/92 (P04001)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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23-07-2001

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