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(54) A system for lying wooden floors having a square or rectangle pattern without nails, screws or glue

(57) A system for lying wooden floors using reticular panels provided with raised edges which are so shaped as to fit one another.

Wooden boards (11) provided with milled profiles all over their sides are laid to said reticular panels and blocked against relieves of the panels and fastened between the latter by suitable T-shaped tabs (14).

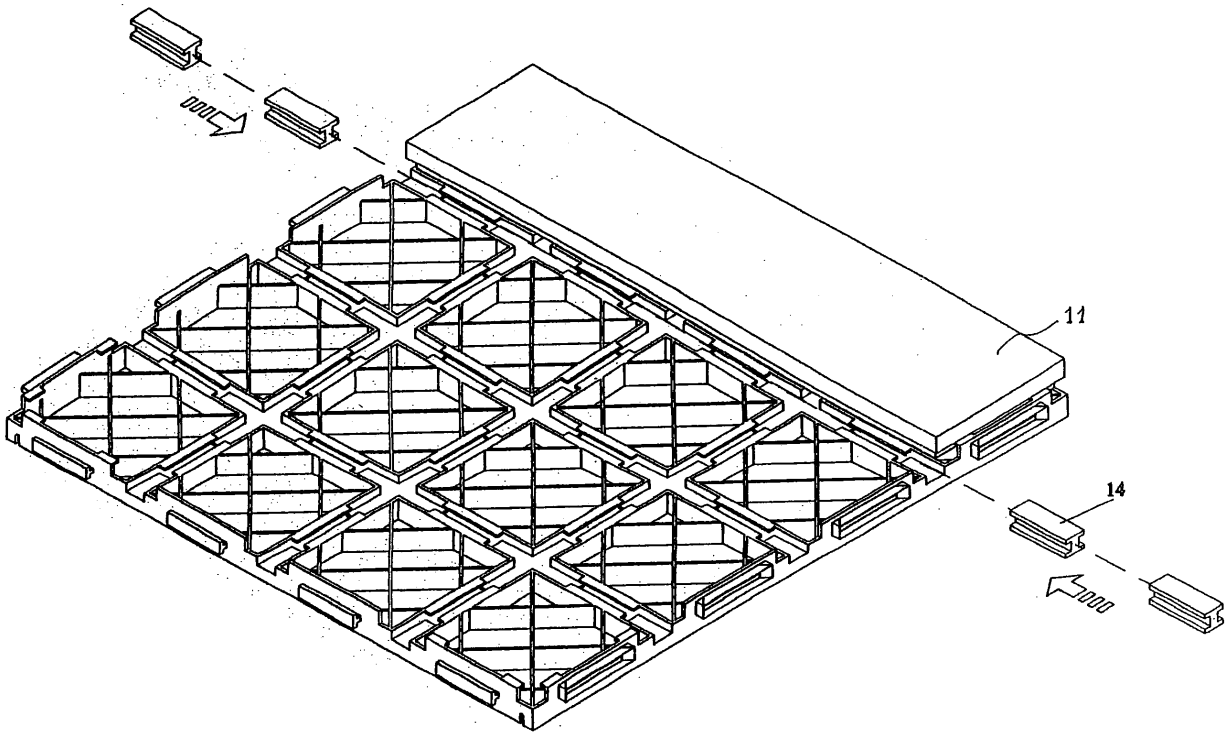

Fig. 6

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Description

[0001] Wooden floorings consisting of panels of plastic materials or wood to which wooden boards are fastened with their lower faces to the supports by screws.
Such operation requires a special machinery and long times of installation with high cost.
The present invention aims at allowing the boards to be fastened to plastic supports without screws, nails or glue.
A further object of the invention is to avoid a special machinery to fit the boards, just requiring a suitable wrench.
These and other advantages will be apparent from the description of the solution proposed by the present invention consisting of using suitable supports provided with inner and outer peripheral relieves and boards with milled edges to allow the coupling to the supports.

[0002] The accompanying drawings show the system in several fitting steps.

[0003] Fig. 1 of sheet 1/7 shows a view of two sides of the support made to receive and to block the boards.

[0004] Fig. 2 of sheet 2/7 shows an overturned view of the same support showing the other two sides and the bottom thereof.

[0005] Fig. 3 of sheet 3/7 shows two supports joined and
fastened by suitable stops.
Fig. 4 of sheet 4/7 relates to the joining step of three supports coupled with their frontal and lateral sides.

[0006] Fig. 5 of sheet 5/7 shows the connection step of a board to a support.

[0007] Fig. 6 of sheet 6/7 shows the blocking step of a board by suitable stops.

[0008] Fig. 7 of sheet 7/7 shows the board finally fastened to the support.

[0009] Fig. 8 of sheet 7/7 shows the wrench used to fit and remove the stops for fastening the boards.

[0010] Fig. 9 of sheet 7/7 shows the board used to make the floor.

[0011] With reference to the figures, the supports consist of squares or rectangles having a reticular outline in its central portion and a peripheral frame.
The central portion of the supports is divided into several boxes having alternately an empty bottom and a solid bottom to improve the lying on less hard soils, i.e. sand.
The supports have male connection members (1) placed at side "A" and at side "B" and having a "T"-shaped cross section on side "A" and a rectangular section 2 on side "B".
Female joints 3 are provided at side "C" shaped like a overturned "U", the open side of which has a "V" shape.
At side "D" female joints 4 are provided with a truncated cone section the greater base of which is directed outside for a better fitting.
The joints at the sides A, B, C, D of the supports allow the supports to be coupled side by side by front sliding connection according to the local condition. The supports have shoulders 5 divided by gaps and provided at their corners with protruding inner stops 6.
The reticular outline of the supports is divided into squares separated by crossing guides 7 provided with sides 8.
Said guide are provided with upper rectangular protrusions 9 and 10.
The system includes boards 11 of special type as they are provided with milled female edges 12 with recessed lower sides 13.
Stops 14 blocking the boards to the panel and having a double "T"-shaped section and stops 15 inserted into suitable holes 16 at the corner of the supports make the system.
The insertion of stops 14 is carried out by using a suitable wrench 17. Under such conditions, it is easy to understand the system for fitting the boards without any additional engaging member.
With reference to figure 4, every square or rectangular support can be fitted by frontal slide coupling with the aid of the disclosed engaging means.
The boards are applied by laying them one at a time on the single support and allowing the first board with the milled edge directed towards the edge of the support to slide on shoulder 5 so that said milled edges fit the angular stops 6.
Afterwards, the boards are inserted one after the other so that they engage side by side with their grooves the adjoining boards.
The boards coupled side by side are blocked to one another by tabs 14 which are inserted by a suitable wrench (figure 8) with one flange into the milled edges of two boards placed side by side and with the other flange forced (figure 6) under protrusions 9 and 10 of guide 7.
After having fitted the board to the supports, the latter are connected to one another by joints at the periphery of sides A, B, C, D, thus making the floor.
The present system allows boards of different lengths to be fitted to the supports and to be positioned such as to provide attractive patterns. The system has no connecting means such as nails, screws and glue. The boards are fitted just by using the wrench shown in figure 8.

[0012] It is self evident that the system advantageously allows to shorten the lying time, also requiring among others less skilled installers than those for lying a traditional parquet.
Formal and structural changes within the scope of the same inventive concept can be made by those skilled in the art, the invention being defined by the following claims.

Claims

1. A system for lying wooden floors without nails, screws or glue, **characterized in that** the boards (11) of the floor rest on supports capable of receiving and fastening the same in suitable guides (7) formed therein, said supports having:

- outer peripheral male (1, 2) and female (3, 4) relieves,
- stop members (6) at the inner corners capable of being inserted into grooves of the wooden boards,
- protrusions (9) and (10) at the sides (8) of the supports.

2. The system according to the preceding claim, **characterized in that** the supports have a square or rectangular shape and consist of a bottom and raised edges that allow the supports to be coupled side by side by reciprocal frontal sliding connection of the outer relieves.

3. The system according to the preceding claims, **characterized in that** once placed side by side the supports are retained by stops (15) fitted into suitable holes (16) at their bases.

4. The system according to the preceding claims, **characterized in that** the supports consist of squares or rectangles placed side by side and divided by guides (7) crossing to one another.

5. The system according to the preceding claims, **characterized in that** boards (11) have a peripheral milled female edge (13) with their lower side being recessed.

6. The system according to the preceding claims, **characterized in that** the boards are driven against the sides of the support and placed side by side, then blocked by stops with a double "T"-shaped cross section (14) which are inserted with their upper flanges into the milled edges of boards (11) and with their lower flanges under the protrusions (9, 10) by means of a suitable wrench (17).

7. The system according to the preceding claims, **characterized in that** the boards are fastened at all of their sides.

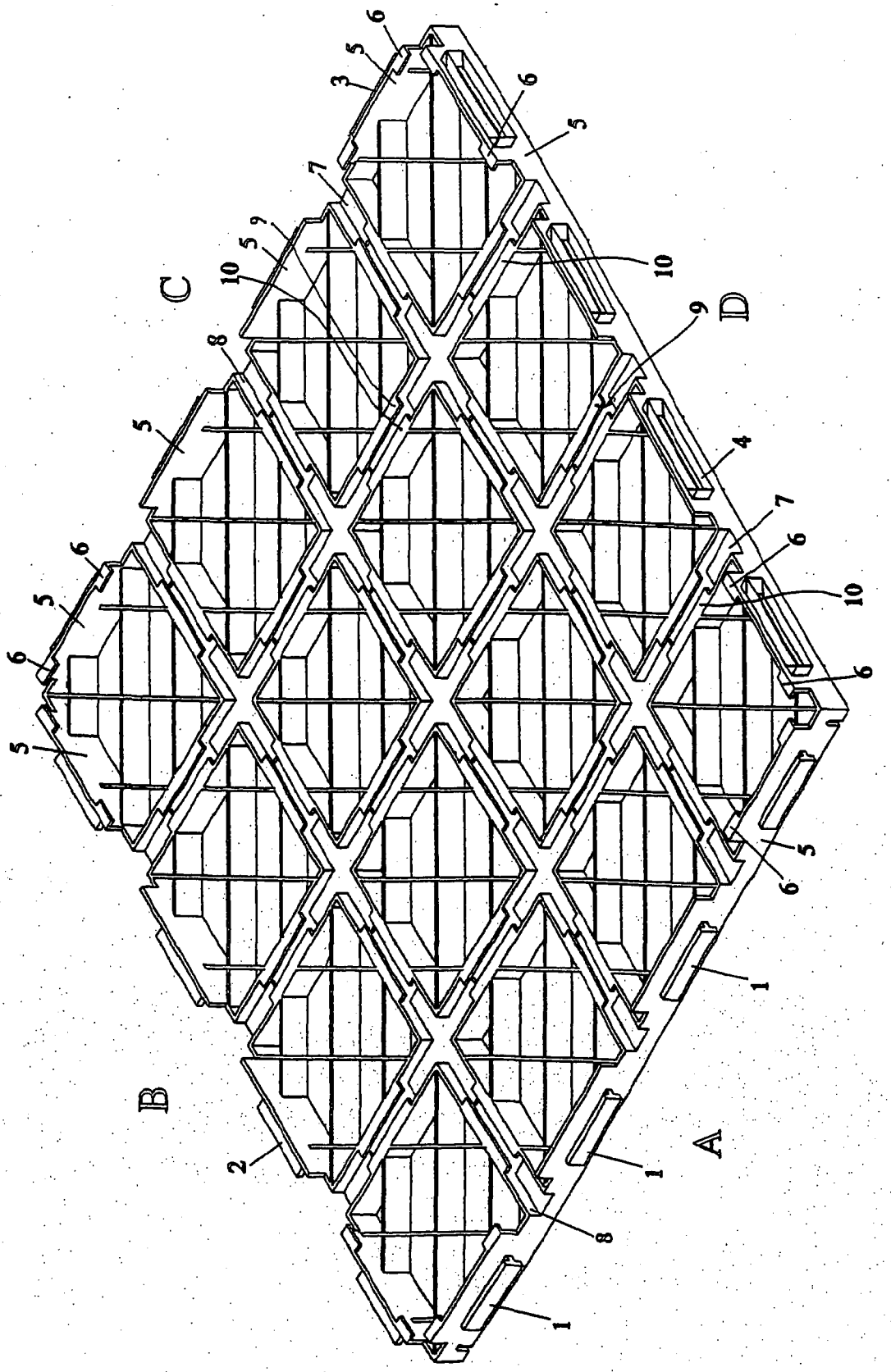

Fig. 1

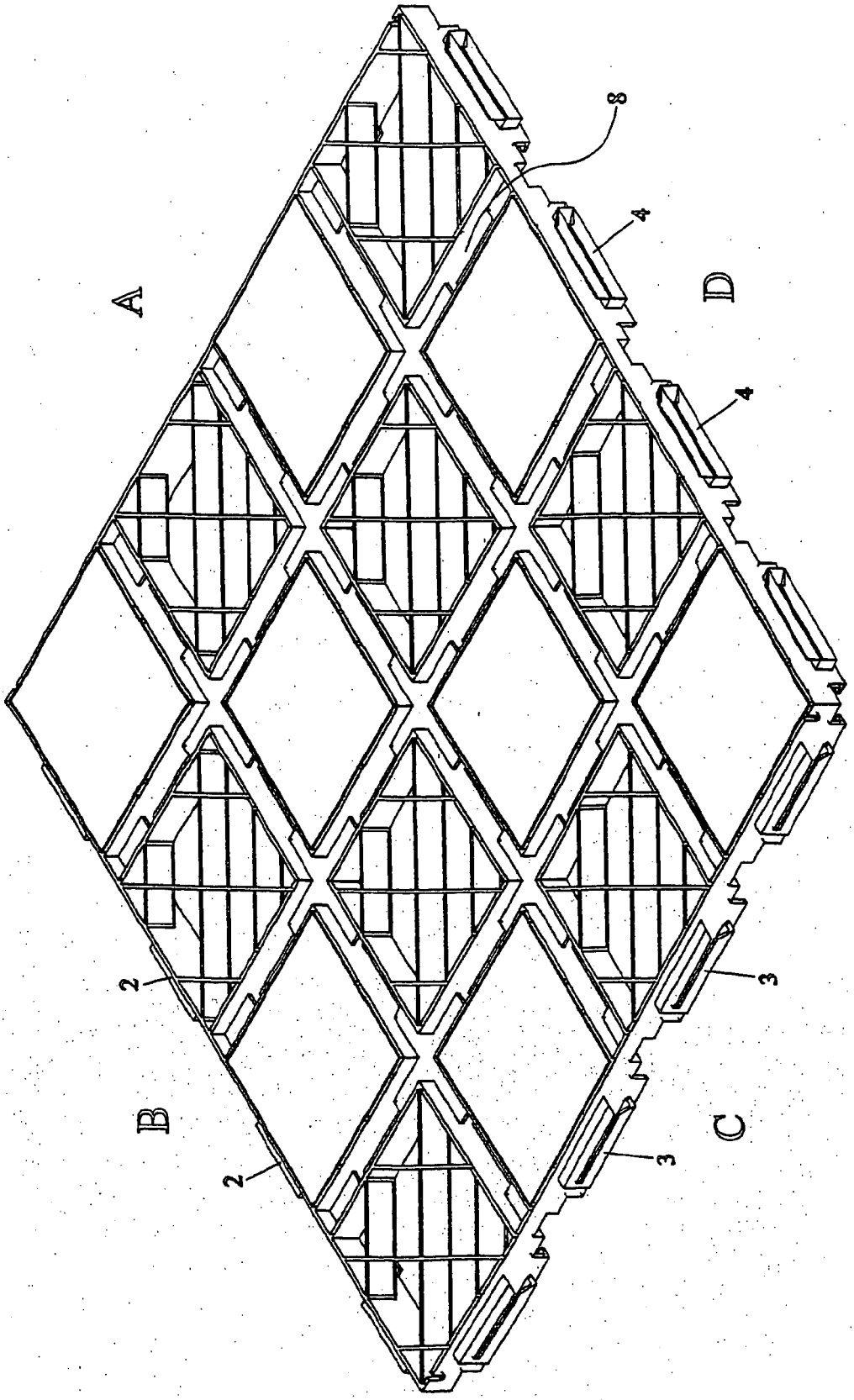

Fig. 2

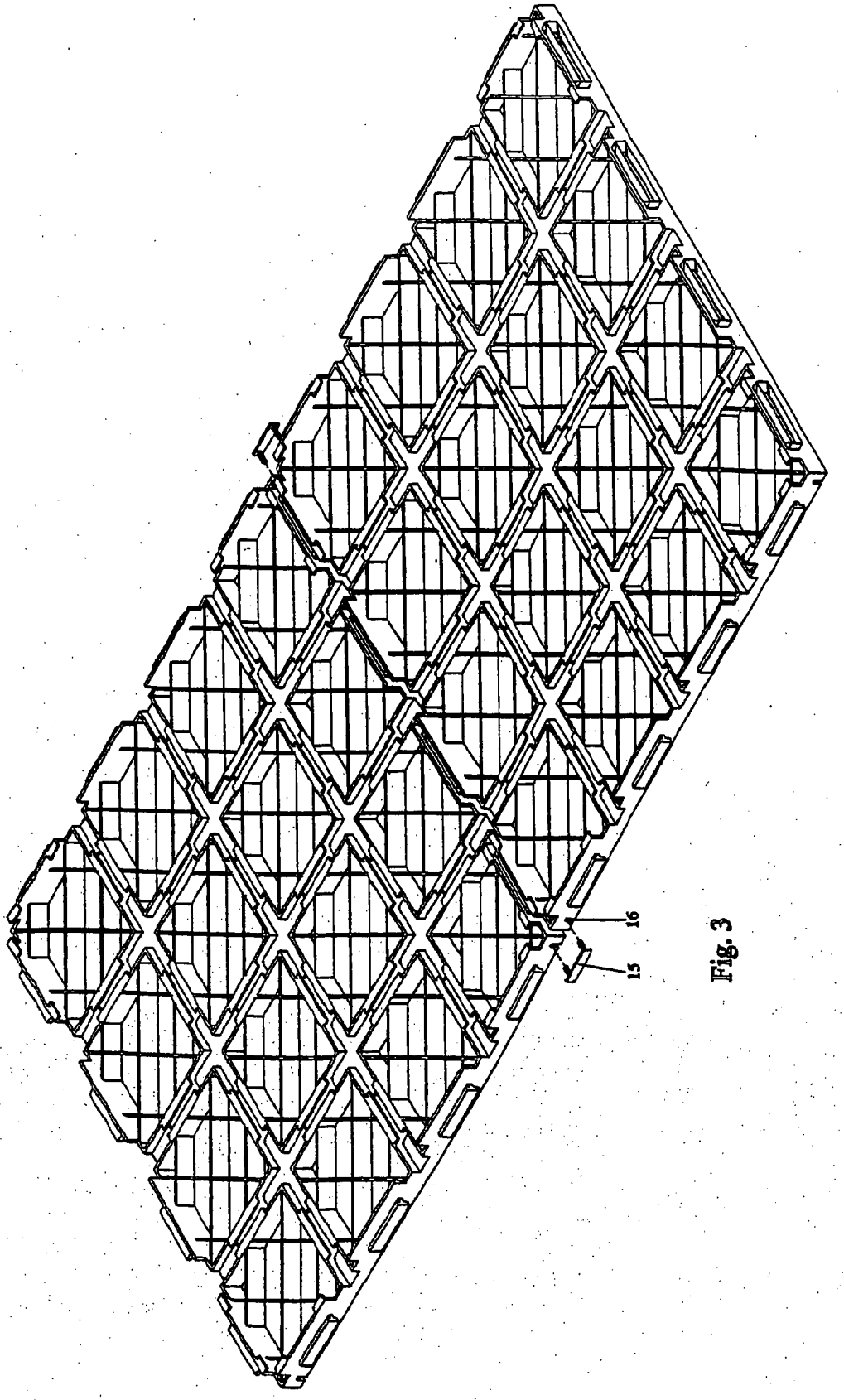

Fig. 3

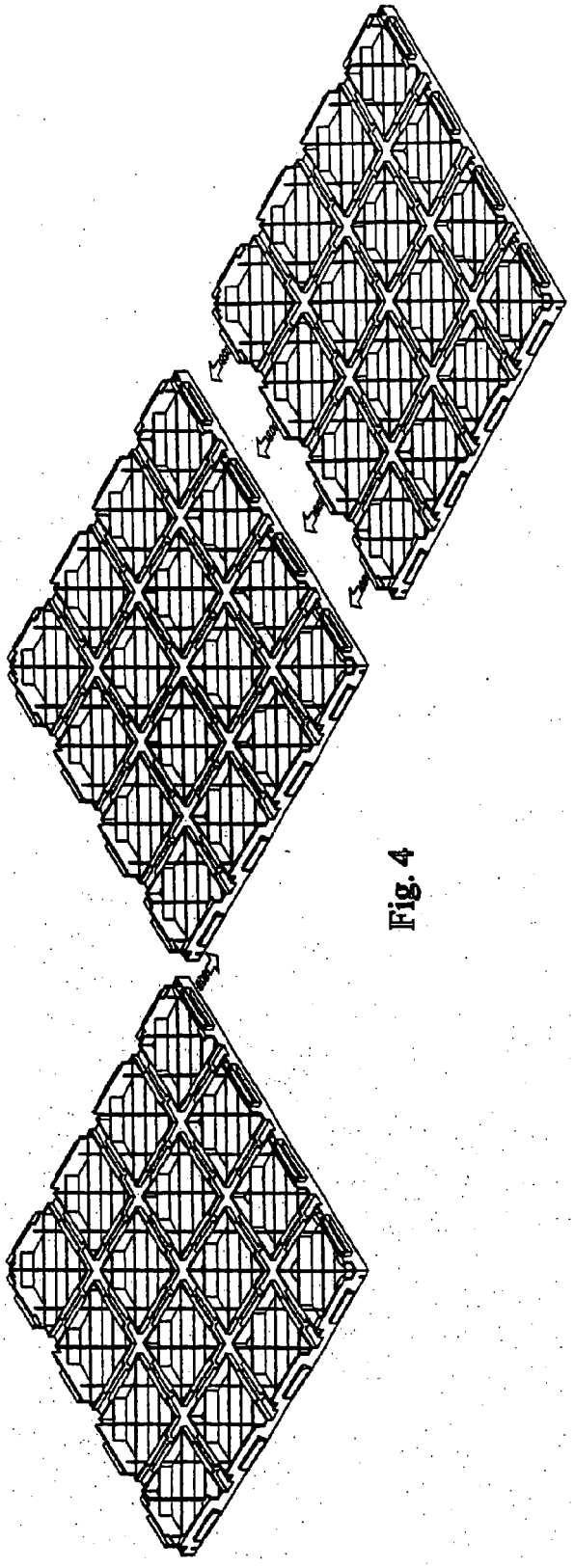

Fig. 4

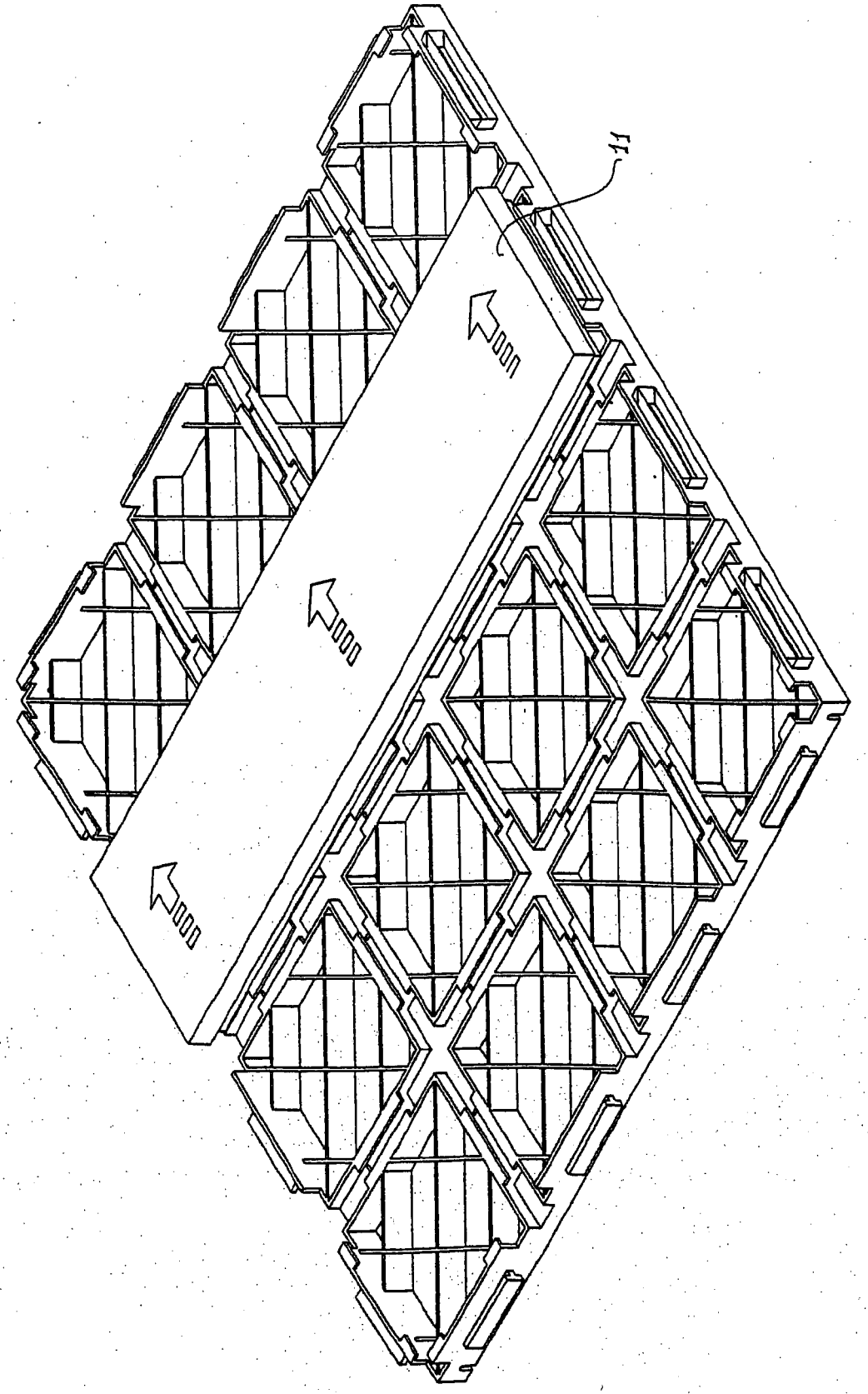

Fig. 5

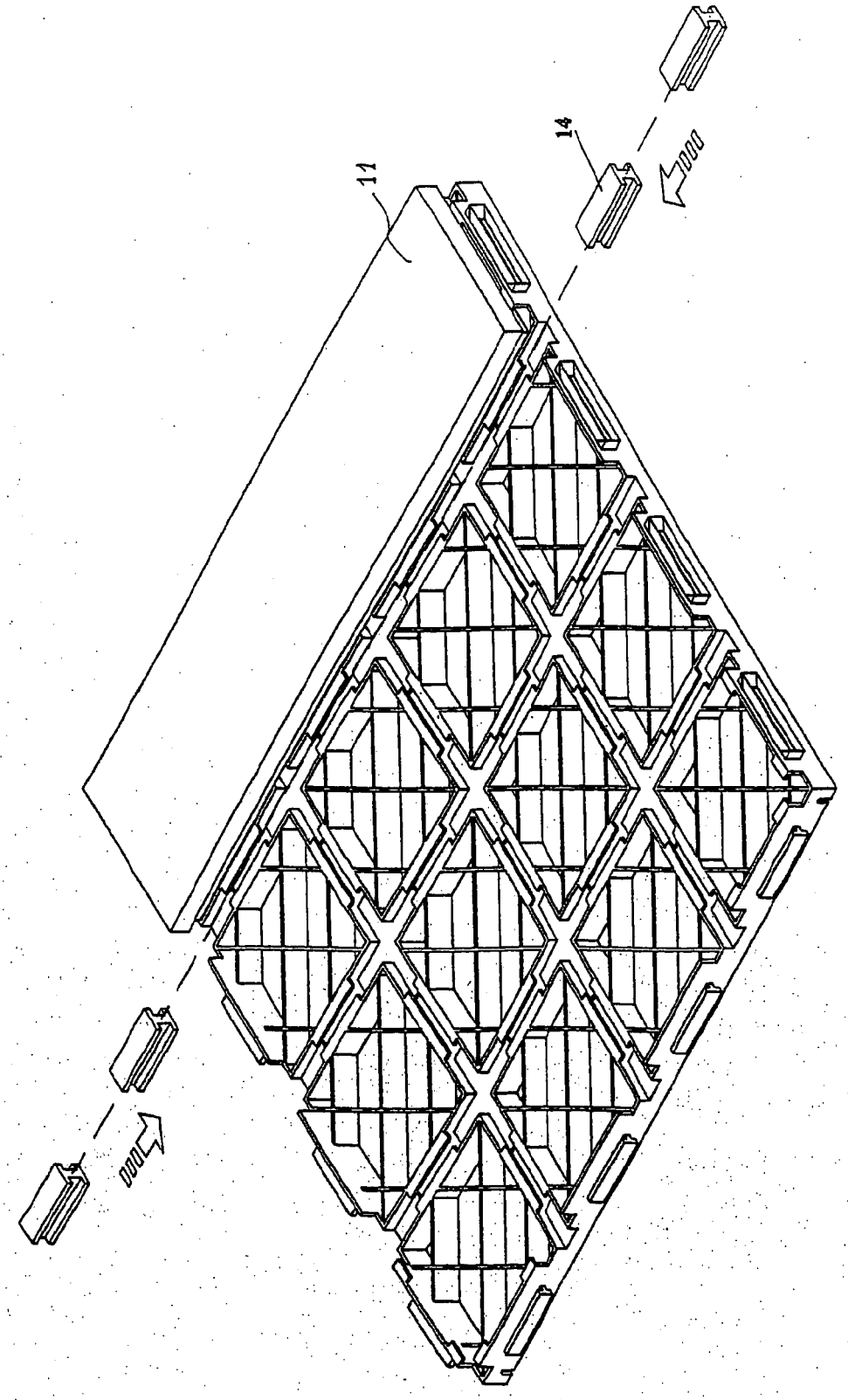

Fig. 6

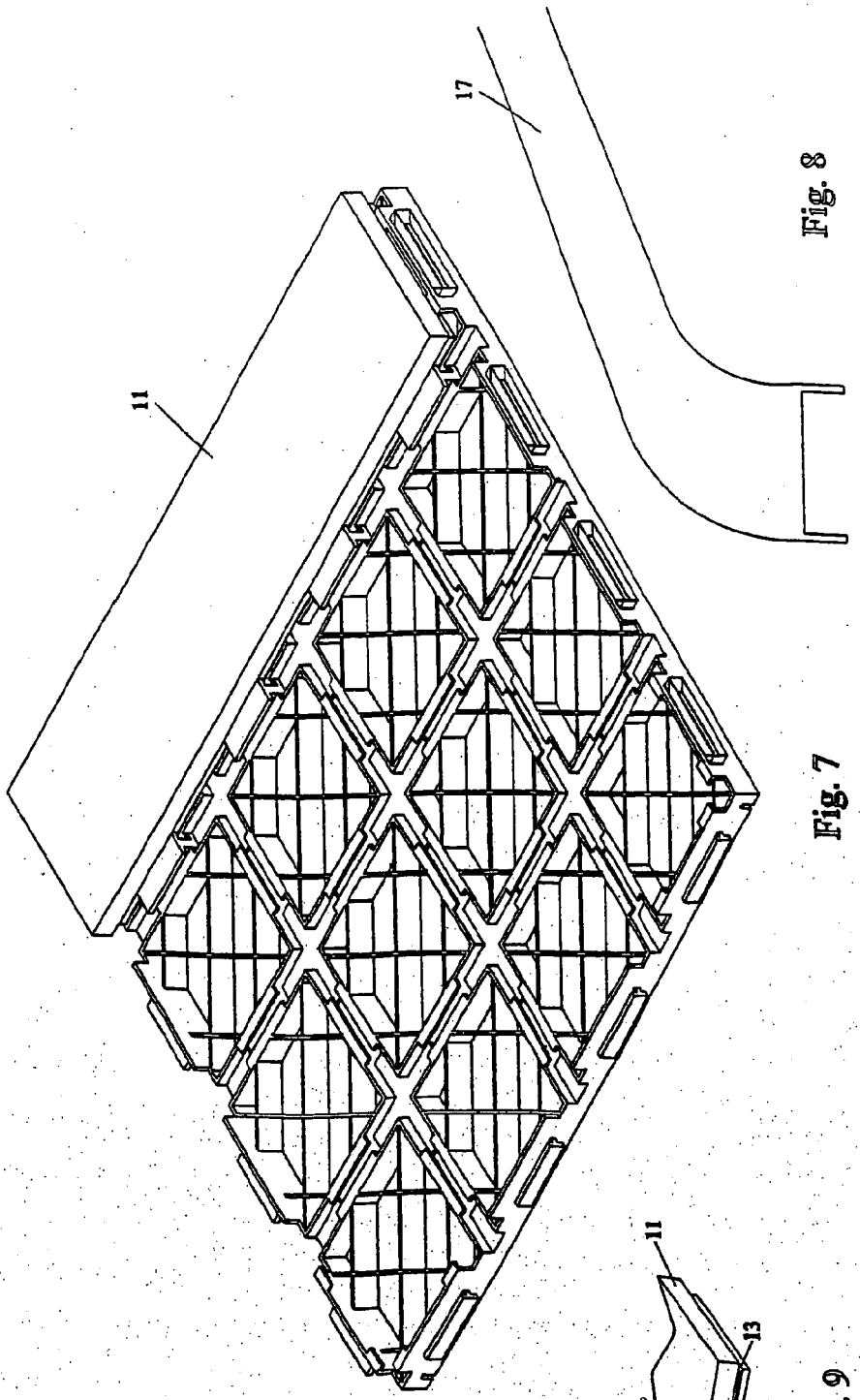

Fig. 8

Fig. 7

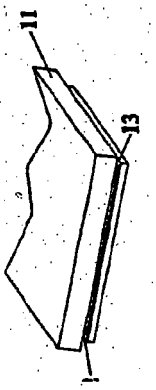

Fig. 9

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EUROPEAN SEARCH REPORT

Application Number
EP 09 42 5279

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TECHNICAL FIELDS SEARCHED (IPC)
E04F
E01C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	9 November 2009	Bouyssy, Vincent

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

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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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