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(54) **Composable paving tile structure for making floorings and the like.**

(57) The tile comprises a plastics material plate-like element provided with a top floor surface and a bottom or lower reinforcement and bearing cell structure which latter is peripherically encompassed by a perimetrical edge provided with mating female and male elements effective to be mutually engaged with male and female elements of an adjoining paving tile respectively.

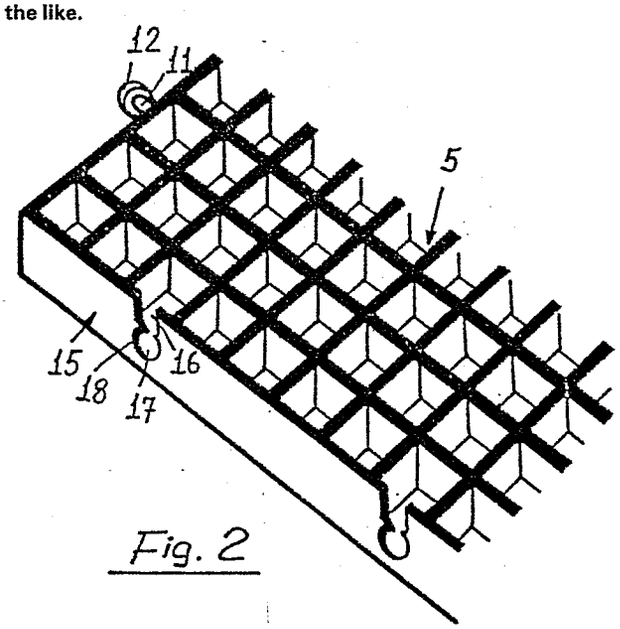

Fig. 2

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BACKGROUND OF THE INVENTION

The present invention relates to a composable paving tile structure, particularly for making floorings and the like.

As it is known, there are presently commercially available resilient floors, which are made starting from vinyl, rubber, linoleum and the like materials, in the form of tiles or rolls, of several different size.

The mentioned floors, which may be defined as conventional, are to be realized by skilled personnel, by using suitable adhesive materials and by precisely levelling the concrete bearing surface.

More specifically the floorings of the above mentioned type can not be laid in moist environments, since the used adhesive materials are not effective to satisfactorily bind the tiles to the bearing floor surface, with consequent distortions of the tiles themselves, in particular as the latter are of the "roll" type.

Thus, the resilient known tiles can not be applied directly on the ground, on basements or in

open spaces.

SUMMARY OF THE INVENTION

Accordingly the task of the present invention is to overcome the thereinabove mentioned drawbacks, by providing such a composable paving tile structure, for making floorings and the like, which, while being made from resilient materials, may be easily and quickly applied even in moist environments, without the need of using any adhesive materials.

Within that task, it is a main object of the present invention to provide such a paving tile which is effective to be applied by unskilled personnel, by means of simple operations.

Another object of the invention is to provide such a paving tile which may be formed with any desired surface finishings, for fitting the desired environment architecture.

Yet another object of the present invention is to provide such a paving tile structure which may be produced starting from easily commercially available materials and which is highly competitive from an economical standpoint.

According to one aspect of the present

invention the above task and objects, as well as yet other objects which will become more apparent thereinafter, are achieved by a composable paving tile for making floorings and the like, characterized in that it comprises a plastics material plate like element provided with a top floor surface and an under reinforcement and bearing cell structure, said cell structure being peripherically encompassed by a perimetrical edge provided with mating female and male elements effective to mutually engage with male and female elements of an adjoining paving tile respectively.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the paving tile structure according to the present invention will become more apparent thereinafter from the following description of an embodiment whereof, being illustrated by way of an indicative example in the accompanying drawings, where:

fig.1 is a perspective view schematically illustrating a tile portion, as seen from the exposed surface whereof;

fig.2 is another perspective view schematical-

ly illustrating a tile portion, as seen from the bottom whereof;

fig.3 illustrates a female coupling element included in the paving tile according to the invention;

fig.4 is a partial cross-sectional view illustrating a male coupling element facing a corresponding female coupling element, for coupling two adjoining paving tiles;

and

fig.5 schematically illustrates a flooring which may be constructed by using the paving tiles according to the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the drawings, the composable paving tile for making floorings and the like, according to the present invention, which is indicated overally at 1, comprises a plate like element 2, which is made from a plastics material, consisting, preferably, of a polyvinylchloride-stabilizing material -mineral filler mixture.

Preferably, though not necessarily, the paving tiles have a square shape, with size which may range from 25x25 to 60x60 cm, and with thicknesses which may

range from 6 to 12 mm.

To this respect it should be noted that the tile may be made with any desired geometrical shapes, provided that it is effective to be laid on a flat surface.

More specifically, the above mentioned plate-like element 2 is provided, on the top surface whereof, with a load bearing surface 3 which, advantageously is provided with a raised pattern 4, of any desired design, since the making mold affords the possibility of interchanging the embossing elements whereof.

On the lower or bottom side whereof, the plate-like element 2 is provided with a cell structure 5, formed by interlacing strips arranged with their small sides on a horizontal plane.

It will however be clear that the tile bottom, which provides a reinforcement and bearing function, may be realized with other geometrical shapes, such as in the form of circles, diamonds, rectangles and so on, the inventive idea being that of having such a structure effective to support and stiffen the plate like element 2, in such a way as to hold it spaced from the tile bearing surface or ground.

On the periphery thereof, the mentioned cell structure is bound or encompassed by a perimetrical edge 10, having substantially the same heigth as said strips forming the cell structure, which edge is joined to the strips themselves.

More specifically the perimetrical edge 10 defines male and female coupling elements, which may be mutually engaged in order to join adjoining paving tiles 1.

According to a preferred embodiment, the male coupling elements consist of pins 11, provided with a respective enlarged head 12, and perpendicularly projecting from the edge 10 in such a way as to extend in a parallel plane to the paving tile lying plane.

The mentioned coupling male elements 11, may be inserted into the corresponding coupling female elements, consisting of notches 15, also defined on the edge 10, and are provided, at the bottom whereof, with a lead-in tapered portion 16 joining with a circular zone 17, with the interposition of tooth members 18, which allow for a pin 11 to be snap engaged and held in its engaging position, with its enlarged head being prevented from exiting the circular opening 17.

According to a preferred embodiment, the male coupling elements are formed on two adjoining sides of the paving tile 1, whereas the female coupling elements are provided on the two other adjoining sides.

Obviously any other suitable arrangement may be used, effective to provide an insertion type of coupling.

The thus constructed paving tiles are of the auto-assembling type and may be applied without using any adhesive materials, thereby they may be laid also on moist environments, by unskilled personnel.

From the above disclosure, it will be clear that the invention fully achieves the intended objects.

In particular the fact is to be pointed out that the paving tile according to the invention may be easily and quickly coupled to adjoining like tiles, thereby affording the possibility of making stable floorings without using any adhesive materials.

In practicing the invention, the used materials, though the best results have been obtained by using the thereinabove mentioned materials, as well as the contingent shapes and sizes may be any according to requirements.

C L A I M S

1- A composable paving tile for making floorings and the like, characterized in that it comprises a plastics material plate like element provided with a top floor surface and an under reinforcement and bearing cell structure, said cell structure being peripherically encompassed by a perimetrical edge provided with mating female and male elements effective to mutually engage with male and female elements of an adjoining paving tile respectively.

2- A composable paving tile for making floorings and the like, according to the preceding claim, characterized in that said plate like element is provided with a rised pattern.

3- A composable paving tile for making floorings and the like, according to claim 1, characterized in that said cell structure comprises a plurality of interlacing strips.

4- A composable paving tile for making floors and the like, according to claim 1, characterized in that said cell structure is effective to space said plate like element from the tile bearing surface.

5- A composable paving tile for making floorings and the like, according to claim 1, characterized in that said male elements comprise pin members provided with enlarged heads and projecting substantially perpendicularly from said perimetrical edge and extending substantially parallelly to the paving tile lying plane.

6- A composable paving tile for making floorings and the like, according to claim 1, characterized in that said female elements comprise downwardly open notches formed on said perimetrical edge, said notches being provided, at the bottom whereof, with tapered lead-in portions ending with respective circular portions, tooth members being provided effective to snap engage with said pins.

7- A composable paving tile for making floorings and the like, according to any preceding claims and substantially as disclosed and illustrated for the intended objects.

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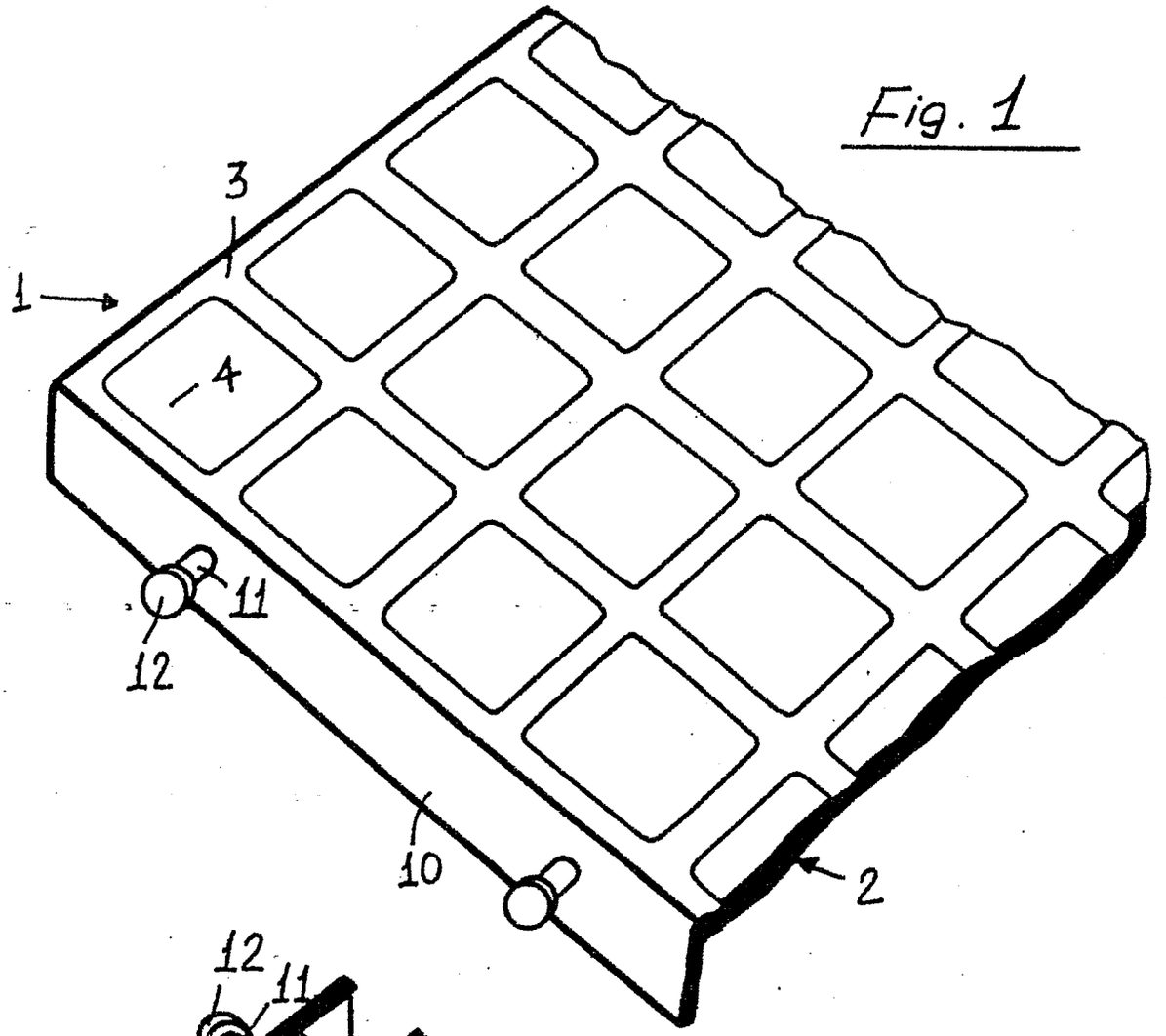
Fig. 1



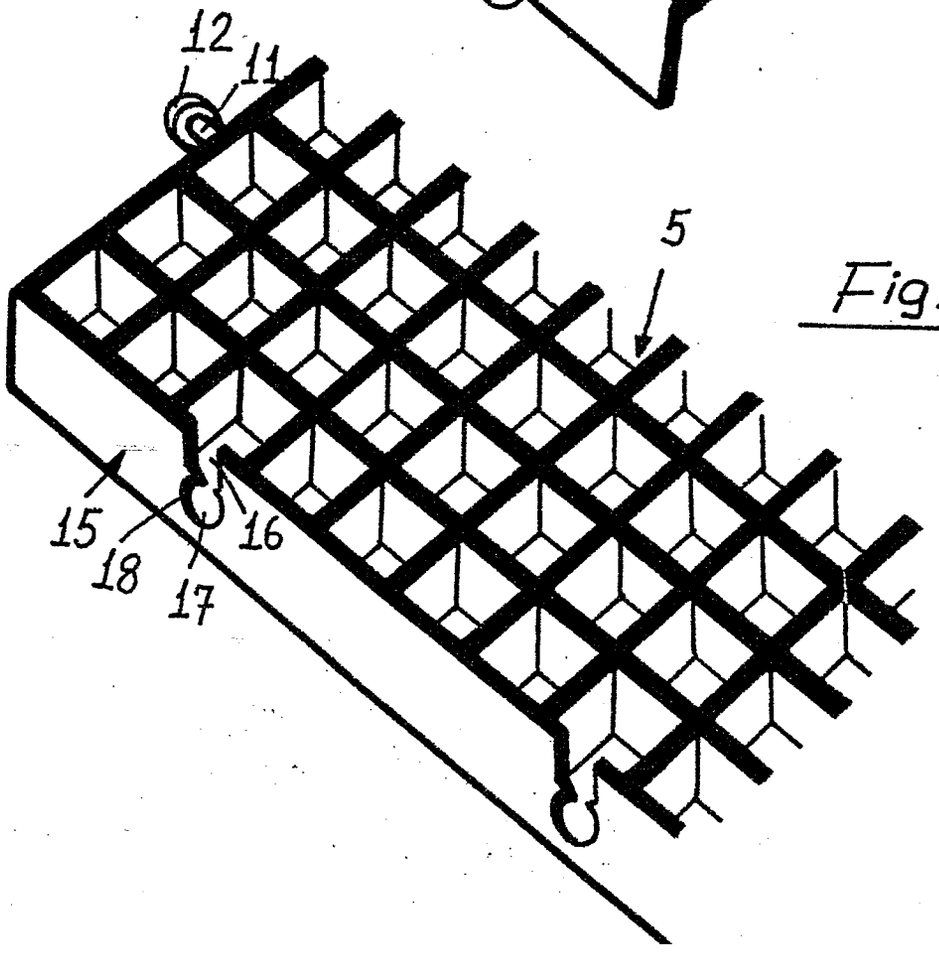


Fig. 2

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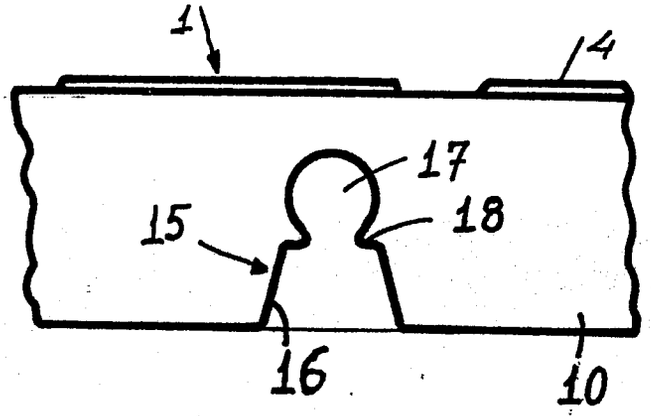
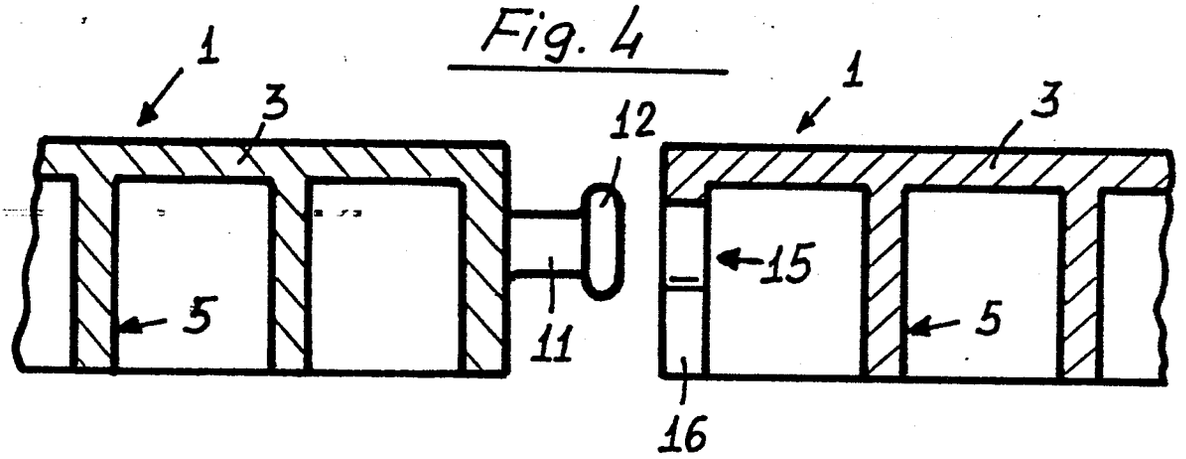


Fig. 3

Fig. 4



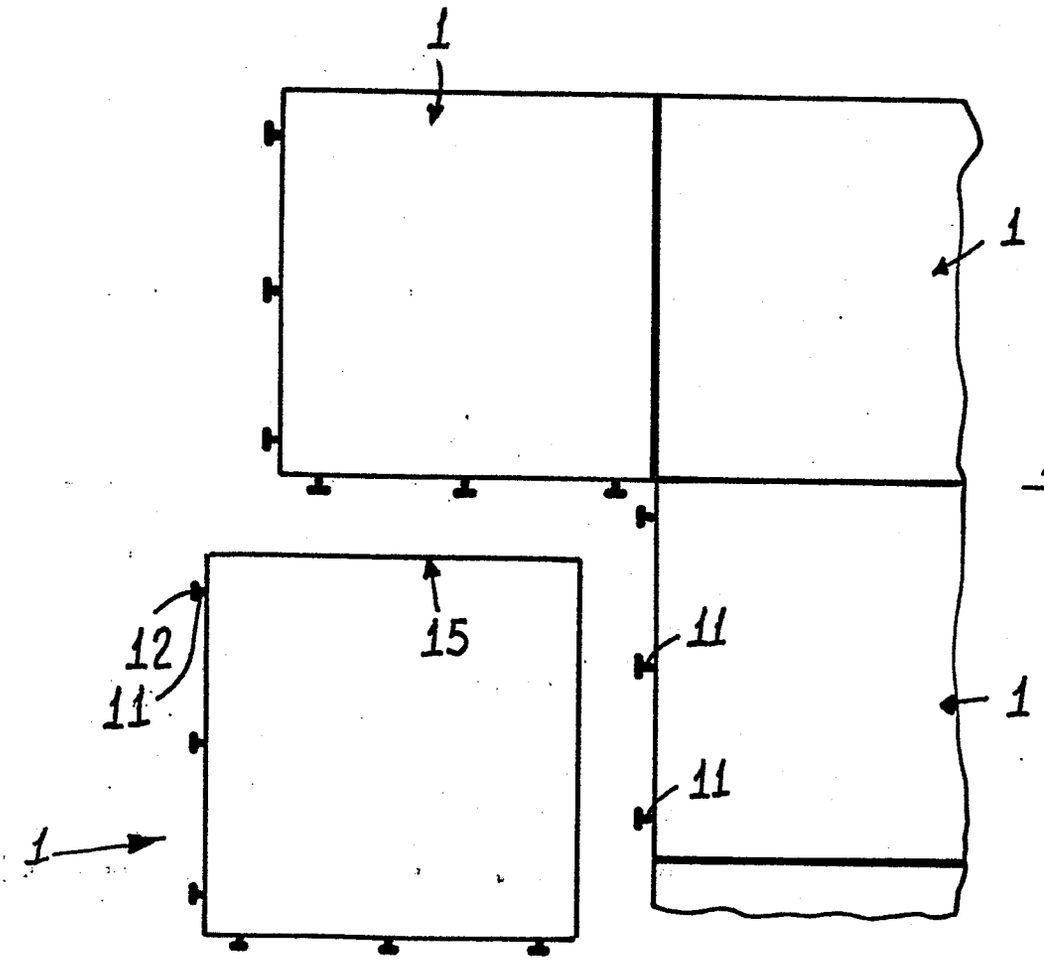


Fig. 5