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(71) Applicant: **Kemac S.P.A.**
42010 Salvaterra di Casalgrande (RE) (IT)

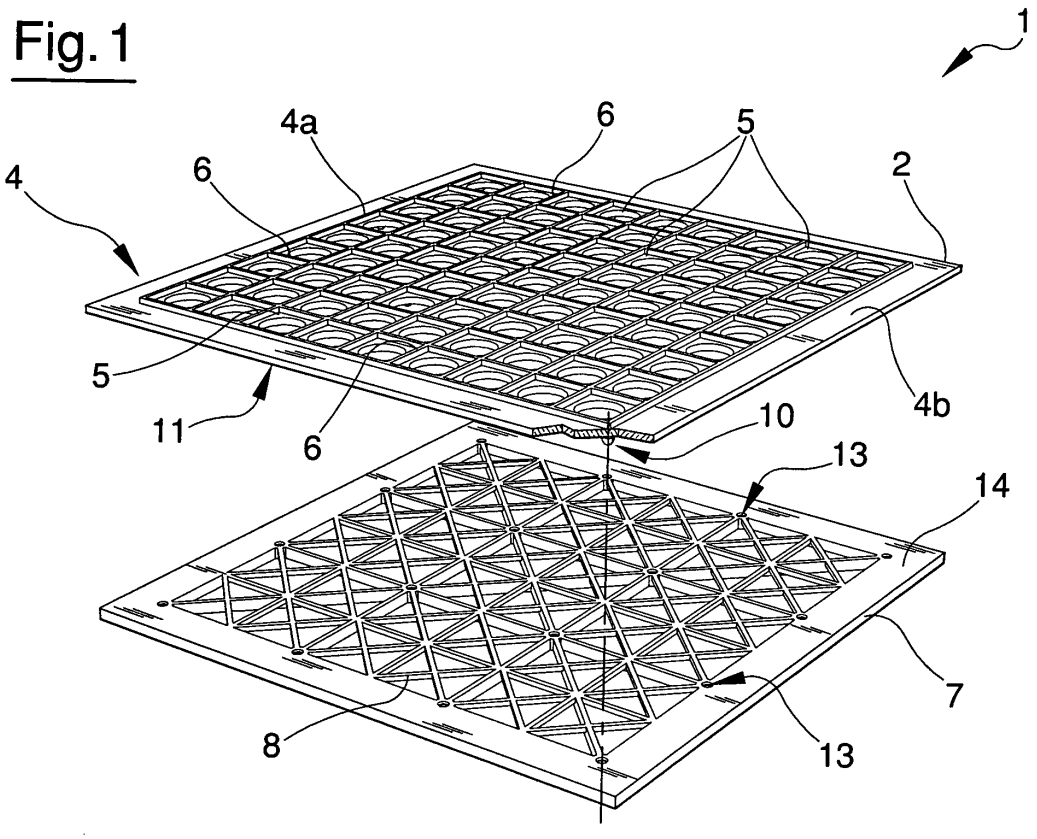
(72) Inventor: **Laroma Iezzi, Mario**
42013 Casalgrande (Reggio Emilia) (IT)

(74) Representative: **Gotra, Stefano**
BUGNION S.p.A.
Via Vellani Marchi, 20
41100 Modena (IT)

(54) A support tray for ceramic tesserae

(57) A support tray for ceramic tesserae, used in a process for realising ordered matrices of ceramic tesserae, comprises a rest unit (2) of the ceramic tesserae (3), made of an elastically deformable material which is non-stick and glue-resistant so that it can detach, and has a first surface (4) which is provided with a plurality of cells (5) for housing the tesserae (3). The tray (1) further comprises a support unit (7), made of a rigid material, for the rest unit (2). The rest unit (2) and the support unit (7) are distinct and couplable by means for mechanically coupling (9).

Fig. 1



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Description

[0001] The invention relates to a support tray for ceramic tesserae.

[0002] The invention preferably relates to a support tray to be used in a procedure for realising ordered matrices of ceramic tesserae.

[0003] Ordered matrices of ceramic tesserae are normally used for realising mosaic-effect coverings. They comprise a certain number of ceramic tesserae arranged in an ordered way and distanced from one another by space lines of determined width, also known as fugues. The tesserae are joined to one another by points of grout. In more detail, each point of grout is arranged partly internally of a space line between two ceramic tesserae located side-by-side, and in part on the laying surfaces of the two side-by-side tesserae.

[0004] The ceramic tesserae are deposited in an orderly fashion on a tray having a plurality of ordering cells. In particular, the tesserae are arranged resting on the decorated surface thereof, i.e. the surface which will be in view when they are laid, so that the laying surface, i.e. the non-visible surface, is facing upwards. In this way the points of grout can be deposited at the positions of the space lines. The grout insinuates by force of gravity partially internally of the space lines and adheres to the flanks of the ceramic tesserae.

[0005] At this point the tray is subjected to a process of heating or firing in order to bring the points of grout to a drying heat (according to the type of grout used), at the end of which the connection between the tesserae is complete.

[0006] The tray used for each tesserae matrix during the whole process, i.e. the composition of the tesserae matrix, for depositing the points of grout and for the following heating stage, is the same in all cases. In particular the tray is generally made of silicone and has an upper surface which is subdivided into a sort of grid, or in other words, a plurality of cells.

[0007] A rigid, generally metal core frame is sunk into the silicone, in order to lend rigidity to the whole tray.

[0008] The metal core prevents the arrangement of tesserae from bending during the various working stages, causing the mosaic to discompose or even some tesserae to break off, and in any case compromising the correct configuration of the finished product.

[0009] A tray of the above-described type tends to wear rather easily, especially in the dividing walls between the silicone cells; this causes infiltration of grout into parts where it is not desired. Once the cells have been subjected to considerable wear, the tray has to be thrown away, without any part of it being recuperable. This inevitably leads to a waste of material.

[0010] Market requirements dictate that the matrices of ceramic tesserae are made in various formats. It is therefore necessary to provide trays having various dimensions.

[0011] Further, the tesserae matrices are produced in series, so that for each format to be realised a certain number of matrices are required.

[0012] All of the above leads to storage problems, room problems and management costs for dealing with the trays, as each tray has a metal core inside it, increasing its width as well as its cost.

[0013] The aim of the present invention is to provide a support tray for ceramic tesserae which obviates the drawbacks inherent in trays of known type.

[0014] In particular, the aim of the present invention is to provide a support tray for ceramic tesserae which is less expensive and occupies less space.

[0015] Finally, a further aim of the support tray for ceramic tesserae of the present invention is to eliminate storage problems connected thereto.

[0016] Further characteristics and advantages of the support tray for ceramic tesserae of the present invention will more clearly emerge from the following detailed description made with reference to the accompanying figures of the drawings, which are provided by way of non-limiting example, and in which:

figure 1 is a first perspective view, partially sectioned, of an exploded view of a support tray for ceramic tesserae, according to the present invention, in a non-operative configuration;

figure 2 is a second perspective view, partially sectioned, of the support tray in an operative configuration;

figure 3 is a schematic plan view of the tray in a second operative configuration;

figure 4 is a sectioned view according to line IV-IV of figure 3, with a detail in enlarged scale.

[0017] The support tray 1 illustrated in figure 1 comprises a rest unit 2 for the ceramic tesserae 3. The rest unit 2 exhibits a first surface 4 comprising a central portion 4a formed by a plurality of cells 5 for housing each single tessera 3.

[0018] Each cell 5 is delimited by separator walls 6 against which the lateral surfaces of the tesserae 3 strike, and which identify a sort of grid on the first surface 4 of the rest unit 2.

[0019] The rest unit 2 is generally made of an elastically deformable, non-stick and glue-resistant material.

[0020] In particular, the rest unit 2 is preferably made of a silicone rubber and has the appearance of a flexible sheet with a low degree of rigidity.

[0021] The rest unit 2 can be made by casting or, preferably, by moulding.

[0022] The tray 1 further comprises a support unit 7, distinct from the rest unit 2, which lends rigidity to the rest unit 2. The support unit 7 is made of a rigid material and is coupled to the rest unit 2, generally below it, as illustrated in figures 1 and 2.

[0023] The support unit 7 is a sheet made of a metal material or, preferably, plastic material able to resist temperatures of at least 200°C.

[0024] The support unit 7 can be a full sheet or can have a frame including lightening structures 8, as illustrated in figures 1 and 2. This latter solution is preferred because it provides lighter trays 1 which are still sufficiently rigid to enable working with and transport of the rest units 2 without the rest units 2 bending.

[0025] The rest unit 2 is couplable to the support unit 7 by means for mechanically coupling 9.

[0026] The means for mechanically coupling 9 preferably comprise a plurality of elastically deformable elements 10.

[0027] In a preferred embodiment, which is illustrated in the accompanying figures of the drawings, the elastically deformable elements 10 project from a second surface 11 of the rest unit 2. In more detail, the elastically deformable elements 10 are substantially cylindrical bodies, each having a broadened part 12 which engages by friction in respective seatings 13 afforded on a surface 14 of the support unit 7, as can be seen in figure 4.

[0028] The elastically deformable elements 10 are preferably made in a single piece with the rest unit 2.

[0029] In an alternative embodiment, not illustrated, the means for mechanically connecting can comprise a plurality of rigid elements which project from the support unit, which engage in respective seatings afforded in the second surface of the rest unit 2.

[0030] More in general, the means for mechanically coupling 9 can comprise any type of connection system, such as for example elastic pegs or hooks, able to realise a removable coupling between an elastically deformable element and a rigid element.

[0031] The tray 1 generally has a quadrilateral shape.

[0032] In order to adapt the tray to the various ceramic tessera matrix formats, the size of the central portion 4a of the rest unit 2 is varied, which changes the number and/or the size of the single cells.

[0033] In this way rest units 2 can be of a standard size, in which the size of the central portion 4a is varied, i.e. the number and size of the cells 5 and, consequently, the edge 4b surrounding the central portion 4a, or the rest unit 2 can be of a variable size, in which the size of the central portion 4a can be changed while the handling edge 4b remains the same.

[0034] The support units 7 too can either have standard or variable sizes, in conformity with the dimensions of the rest units 2.

[0035] Note that the possibility of uncoupling the support unit 7 from the rest unit 2 enables use of a same support unit 7 for various rest units 2.

[0036] It is therefore advantageous to realise support units 7 having standard dimensions, or being possibly at least as big as the largest rest units 2 if the rest units 2 are of variable dimensions.

[0037] What really counts is that the support unit 7 should have a surface extension which is at least equal to the surface size of the rest unit 2 to which it is coupled.

[0038] Therefore, whatever the size of the rest unit 2, the support unit 7 can be made interchangeable, universal and adaptable to any rest unit 2, by positioning the means for coupling 9 in places which are fixed and predetermined on both units.

[0039] Using of a tray of the present invention enables a reduction in space required for storing the units, as it is sufficient to have a number of support units 7 which is equal to the number of rest units 2 that can be dealt with in a production line. Further, the rest units 2 alone, even if stored in numbers and dimensions such as to cover an entire range of realisable matrices of tesserae, occupy a considerably smaller space than prior-art trays.

[0040] Finally, should the cells 5 and/or the walls 6 on which the single ceramic tesserae rest break, it is sufficient to replace the rest unit 2 alone.

[0041] Consequently, the production and management costs for the support trays for ceramic tesserae of the present invention are contained.

[0042] The described trays, in particular those having a support unit made of hard plastic and/or having lightening structures, are very light and are therefore easier to handle.

Claims

1. A support tray for ceramic tesserae, used in a process for realising ordered matrices of ceramic tesserae, **characterised in that** it comprises a rest unit (2) of the ceramic tesserae (3), having a first surface (4) which is provided with a plurality of cells (5) for housing the tesserae (3), and a support unit (7) for the rest unit (2); the rest unit (2) and the support unit (7) being distinct and couplable by means for mechanically coupling (9).

2. The support tray of claim 1, **characterised in that** the rest unit (2) is made of an elastically deformable material which is non-stick and glue-resistant.

3. The support tray of claim 2, **characterised in that** the rest unit (2) is made of a silicone rubber.

4. The support tray of claim 2, **characterised in that** the rest unit (2) is made by moulding.

5. The support tray of one of the preceding claims, **characterised in that** the means for mechanically coupling (9) comprise a plurality of elastically deformable elements (10).

6. The support tray of claim 5, **characterised in that** the elastically deformable elements (10) project from a second surface (11) of the rest unit (2) and engage by friction force in respective seatings (13) afforded on a surface (14) of the support unit (7).

7. The support tray of claim 6, **characterised in that** the elastically deformable elements (10) are sub-

stantially cylindrical bodies having a broadened part (12) which engages in the seatings (13) of the support unit (7).

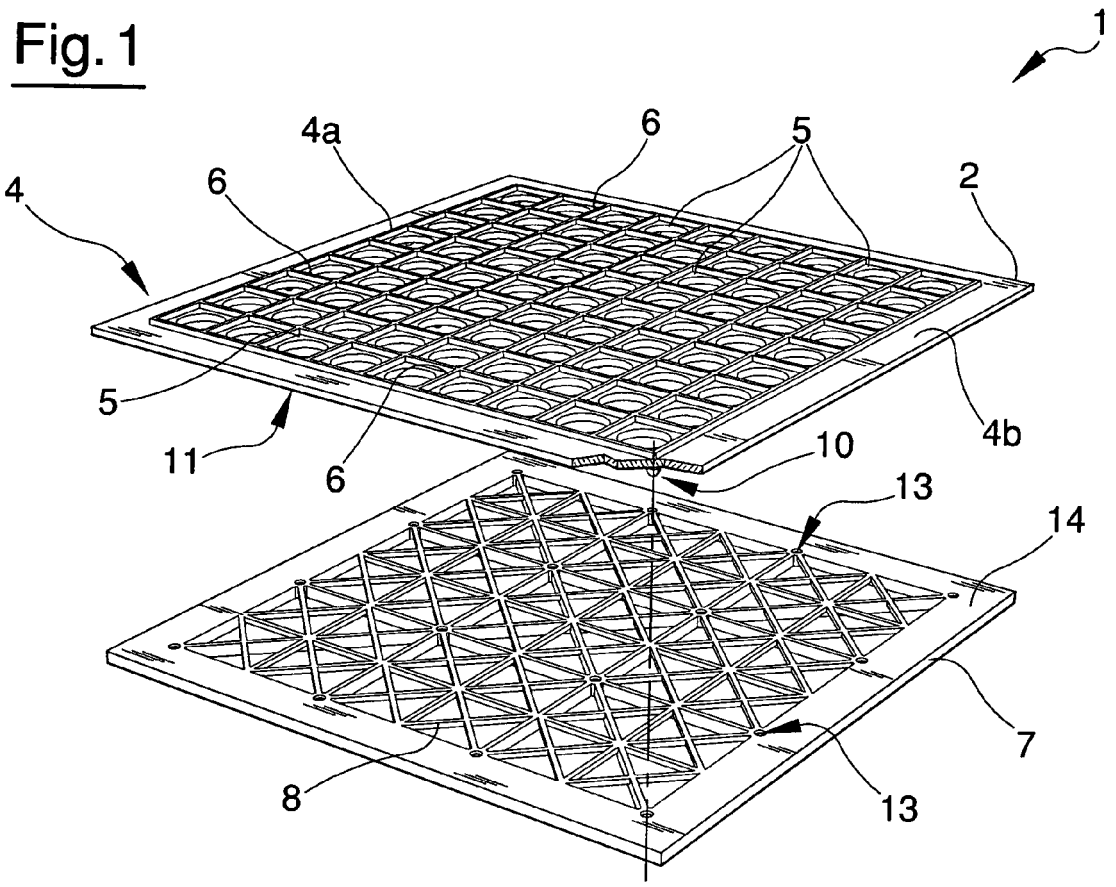
8. The support tray of claim 5, **characterised in that** the elastically deformable elements (10) are made in a single piece with the rest unit (2).

9. The support tray of claim 1, **characterised in that** the support unit (2) is made of a rigid material.

10. The support tray of claim 9, **characterised in that** the rigid material is hard plastic which is resistant to temperatures of at least 200°C.

11. The support tray of claim 9, **characterised in that** the rigid material is a metal.

Fig. 1



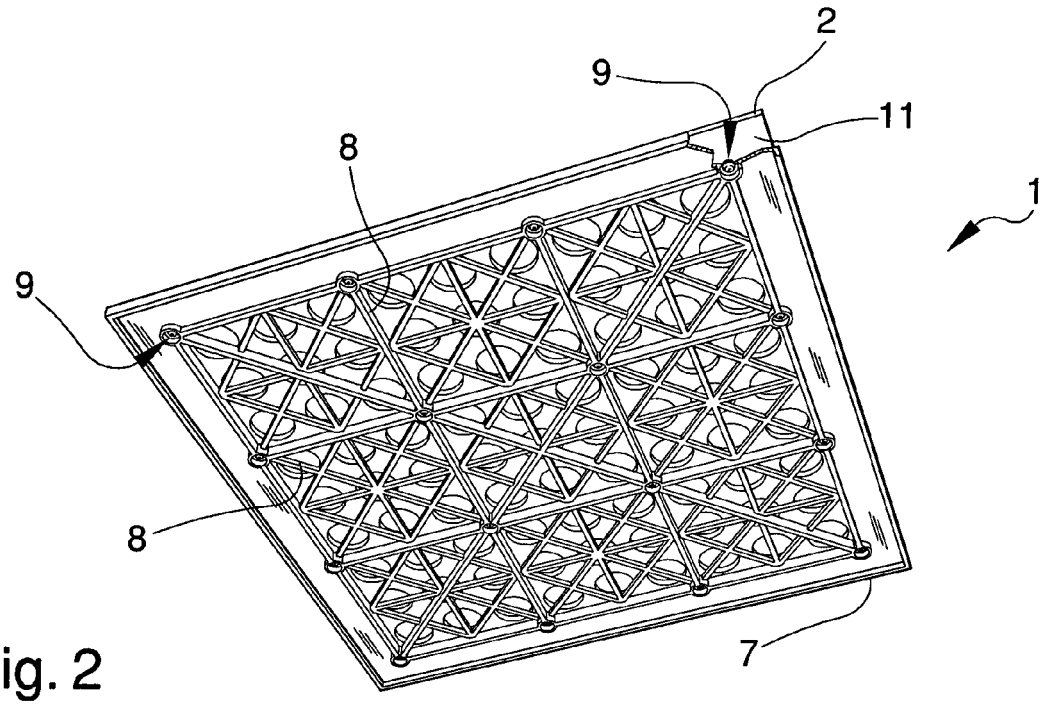
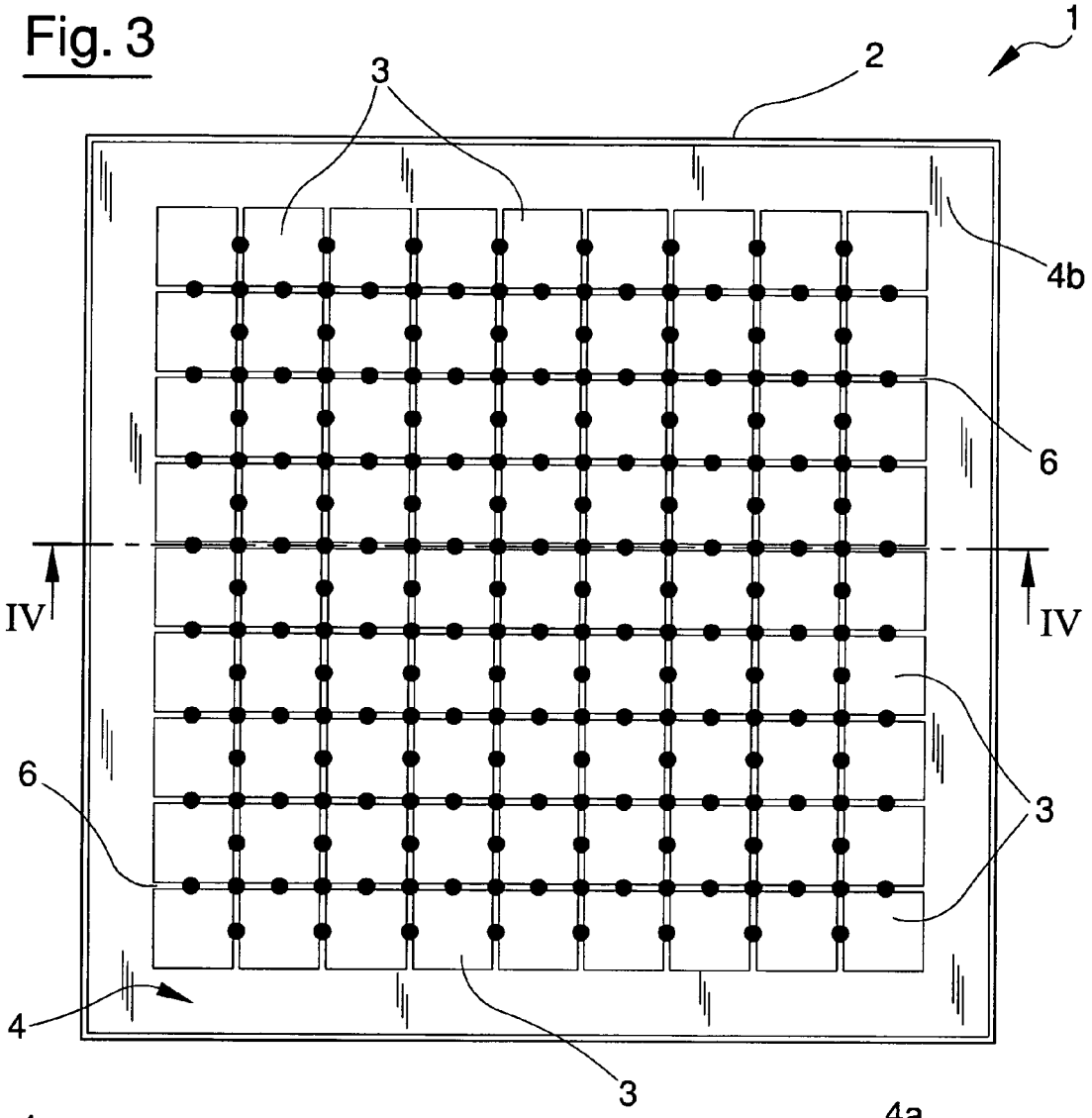


Fig. 2

Fig. 3



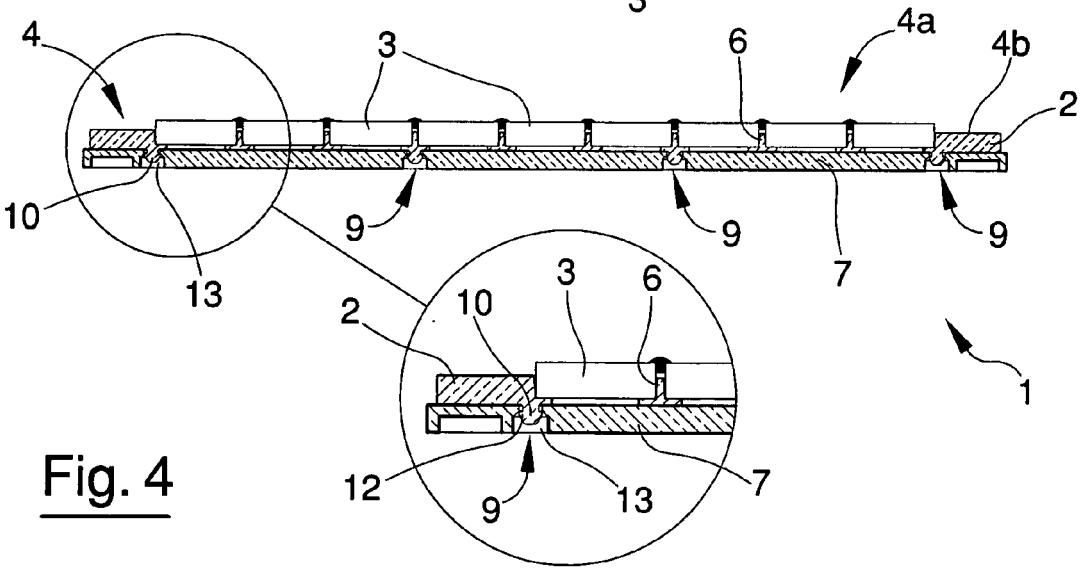


Fig. 4