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(54) **A METHOD FOR REALISING A FLOOR AND A FLOOR OBTAINED WITH THE METHOD**

(57) A method is disclosed for realising a floor and a floor obtained using the method. The method comprises steps of: positioning the first plurality of planks (9) and the plurality of blocks of lightening material (5) in such a way that: they are flanked to one another; they contact one another; they are aligned with respect to a same horizontal plane (H); each block of lightening material (5) of the plurality of blocks of lightening material (5) can be held still by at least two planks of the first plurality of planks (9) which are opposite one another; a containing surface (3) is defined for a casting of concrete (2); fixing the first plurality of planks (9) to one another and/or to a frame; fixing a plurality of reinforcing elements (4) to the first plurality of planks (9); arranging a plurality of containing walls (16) for a casting of concrete (2), which emerge from the horizontal plane (H) and which surround the containing surface (3) to define, with the containing surface (3), a containing volume (27); casting concrete into the containing volume (27) so as to fix the plurality of blocks of lightening material (5) and the plurality of reinforcing elements (4) to one another.

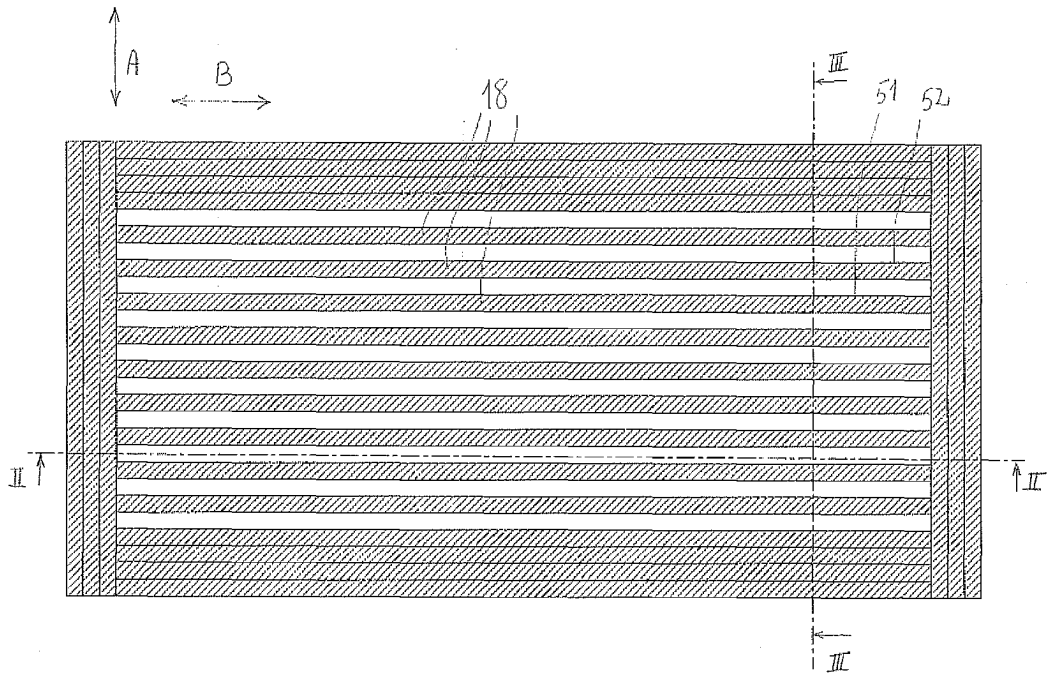

FIG 1

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Description

DESCRIPTION OF THE INVENTION

[0001] The present invention relates to the technical sector concerning the construction of floors.

[0002] Document FR 2 316 401 discloses a method for realising a floor, comprising steps of: arranging a wooden plank layer on a horizontal plane; gluing a plurality of polystyrene blocks above the wooden layer, so that a plurality of longitudinal and parallel channels is defined between each block of polystyrene and the adjacent one; arranging a plurality of reinforcing elements internally of the plurality of channels; casting concrete into the plurality of channels, fixing the reinforcing elements, the blocks of polystyrene and the layer of wood to one another. The gluing of the plurality of blocks of polystyrene to the wooden plank layer is necessary for preventing the plurality of blocks of polystyrene from displacing when the concrete is cast.

[0003] The above-described method however has some drawbacks, outlined in the following: the wooden plank layer is voluminous and consequently complicated to move; the positioning of the polystyrene blocks on the wooden plank layer makes it necessary to measure up in order to guarantee that between one polystyrene block and an adjacent one a channel is defined, having a constant width, and this takes time to accomplish; further, the gluing of the polystyrene blocks to the wooden plank layer requires manual labour and time in order to apply the glue, as well as drying time, before proceeding with the concrete casting.

[0004] The aim of the present invention consists in obviating the above-mentioned drawbacks.

[0005] The above aim has been attained by means of a method for realising a floor according to claim 1, and by means of a floor according to claim 8.

[0006] To realise the floor a first plurality of planks is used instead of a wooden plank layer, as happened in the prior art: therefore each plank of this first plurality of planks will be smaller than the wooden plank layer and will be easier to move. Advantageously, no application of glue is required for fixing each block of lightening material to the planks of the first plurality of planks: in fact, each block of lightening material is held still by at least two opposite planks of the first plurality of planks, and therefore cannot move even when concrete is cast. Further, it is not necessary to measure up for the positioning of the blocks of lightening material and the planks: in fact, it is possible for example to alternate the blocks of lightening material with the planks, thus obtaining a floor having homogeneous mechanical characteristics along the whole extension thereof.

[0007] Specific embodiments of the invention will be described in the following part of the present description, according to what is set down in the claims and with the aid of the accompanying tables of drawings, in which:

- figure 1 illustrates a first step of a method for realising a floor, object of the present invention, according to a preferred embodiment;
- figures 2, 3 are respectively the view of sections II-II and III-III of figure 1;
- figure 4 illustrates a second step of the above-mentioned method;
- figures 5, 6 are respectively the view of sections V-V and VI-VI of figure 4;
- figure 7 illustrates a third step of the above-mentioned method;
- figures 8, 9 are respectively the view of sections VIII-VIII and IX-IX of figure 7;
- figure 10 illustrates a fourth step of the above-mentioned method;
- figures 11, 12 are respectively the view of sections XI-XI and XII-XII of figure 10;
- figure 13 illustrates a fifth step of the above-mentioned method;
- figures 14, 15 are respectively the view of sections XIV-XIV and XV-XV of figure 13;
- figures 16, 17 are other section views alike the section views of figures 14,15 but relating to a sixth step of the above-mentioned method;
- figure 18 is a larger-scale view of detail K of figure 16, in which the plurality of reinforcing elements and the electro-welded grid are illustrated;
- figure 19 is a section view, in larger scale, alike the section view of figure 17 but in relation to a seventh step of the above-mentioned method.

[0008] With reference to the appended tables of drawings, reference numeral (1) denotes in its entirety a floor that is the object of the present invention, comprising: a first plurality of planks (9) and a plurality of blocks of lightening material (5) which are positioned in such a way that (figures 7, 8, 9): they are flanked to one another; they contact one another; they are aligned with respect to a same horizontal plane (H); each block of lightening material (5) of the plurality of blocks of lightening material (5) is abutted by at least two planks of the first plurality of planks (9) which are opposite one another; a containing surface (3) is defined for a casting of concrete (2). The floor (1) further comprises: a plurality of reinforcing elements (4) arranged above the first plurality of planks (9) and fixed to the first plurality of planks (9) (figures 7, 8, 9); a casting of concrete (2) which rises from the containing surface (3) and which fixes the plurality of blocks of lightening material (5) and the plurality of reinforcing elements (4) to one another (figures 10, 11, 12). The first plurality of planks (9) are fixed to one another and/or to a frame (for example the pre-existing walls (12)).

[0009] The plurality of blocks of lightening material (5) are preferably made of polystyrene and are for example 60 cm wide.

[0010] Each block of lightening material (5) of the plurality of blocks of lightening material (5) is preferably parallelepiped.

[0011] Each block of lightening material (5) of the plurality of blocks of lightening material (5) preferably has a longitudinal extension.

[0012] The first plurality of planks (9) are preferably made of wood, for example spruce, for example having a thickness of 2.2 cm.

[0013] The planks of the first plurality of planks (9) preferably have a parallelepiped shape.

[0014] The planks of the first plurality of planks (9) preferably have a longitudinal extension.

[0015] Each plank of the first plurality of planks (9) preferably has a lower face that is aligned to the horizontal plane (H) and each block of lightening material (5) of the plurality of blocks of lightening material (5) has a lower face that is aligned to the horizontal plane (H) (see for example figures 8, 9).

[0016] The floor (1) is preferably realised in height, due to the use of a temporary scaffolding (17) (already visible in figures 2, 3). Alternatively (solution not illustrated) the horizontal plane (H) can be the ground surface: in this case, the floor (1) can be made on the ground, at the worksite or in another place, and only raised subsequently.

[0017] The containing surface (3) does not allow passage of concrete. In other words, the first plurality of planks (9) and the plurality of blocks of lightening material (5) can preferably be dimensioned and arranged in such a way not to allow any space for concrete to pass through the horizontal plane (H) of the concrete.

[0018] The first plurality of planks (9) and the plurality of blocks of lightening material (5) are preferably positioned in such a way that: each block of lightening material (5) of the plurality of blocks of lightening material (5) is interposed between two opposite planks (41, 42), both orientated in a first horizontal direction (A) and being a part of a first part of the first plurality of planks (9) (figure 7). The first part of the first plurality of planks (9) can only comprise planks that are orientated in the first horizontal direction (A) (see also figure 4). The first plurality of planks (9) and the plurality of blocks of lightening material (5) are preferably positioned in such a way that each plank (43) of a second part of the first plurality of planks (9) is orientated in a second horizontal direction (B), perpendicular to the first horizontal direction (A), and is interposed between two blocks of lightening material (7, 8) of the plurality of blocks of lightening material (5) (figure 7). The second part of the first plurality of planks (9) can comprise only planks that are orientated in the second horizontal direction (A) (see also figure 4).

[0019] The first plurality of planks (9) and the plurality of blocks of lightening material (5) (this solution is not illustrated but can easily be deduced from the figures) are preferably positioned in such a way that: the first plurality of planks (9) form a plurality of borders; and the plurality of blocks of lightening material (5) are arranged in the borders of the plurality of borders. The first plurality of planks (9) and the plurality of blocks of lightening material (5) are preferably dimensioned and arranged in such a way that each block of lightening material of the plurality of blocks of lightening material (5) arranged in a corresponding border of the plurality of borders is jointed internally thereof.

[0020] The floor (1) preferably comprises a second plurality of planks (18) (figures 1, 2, 3) which are distanced from one another (for example by 10cm), to enable passage of connections (13), for example electric cables or water pipes, or the passage of one (or more) electrical, electronic or mechanical devices (14), for example a lamp or a fire-prevention device comprising a water dispenser, to be inserted in a housing (15), made in a block of lightening material (5) of the plurality of blocks of lightening material (5) (figure 19); the first plurality of planks (9) and the plurality of blocks of lightening material (5) are arranged resting on the second plurality of planks (18).

[0021] The first plurality of planks (9) are preferably fixed (for example by means of clamps, not visible in the figures) to the second plurality of planks (18).

[0022] A block of lightening material (5) of the plurality of blocks of lightening material (5) is preferably provided with an undercut which is comprised between a first plank (51) of the second plurality of planks (18) and a second plank (52) of the second plurality of planks (18) which are adjacent to one another, which is accessible from the side of the second plurality of planks (18), and which forms a housing (15) for a device (14); further, the floor (1) comprises a device (14) which is arranged in the housing (15) and connections (13) which are connected to the device (14) and which pass between a plank of the second plurality of planks (18) and a further plank of the second plurality of planks (18) which are adjacent to one another (figure 19). It is advantageously possible to predispose connections (13) and devices (14) without the need for building work, in a simple and rapid way: in fact, one or more devices (14) can be inserted in undercuts made in one or more blocks of lightening material (5), between one plank and another that are part of the second plurality of planks (18), while the connections (13) of the one or more devices (14) can pass between the planks of the second plurality of planks (18).

[0023] The floor (1) preferably comprises a plurality of finishing slabs (29) which are fixed to the second plurality of planks (18) so as to remain in view. The plurality of finishing slabs (29) are preferably made of plasterboard or fibreboard. In this case too the predisposing of connections (13) and devices (14) does not create any problems: it is sufficient to additionally make holes in the plurality of finishing slabs (29) at the zones in which, for example, the lamps (14) are predisposed, see figure 19 once more.

[0024] The present invention further relates to a method for realising the above-described floor (1), as set out in the following.

[0025] The method for realising a floor (1) comprises steps of: providing a plurality of blocks of lightening material (5); providing a first plurality of planks (9); position-

ing the first plurality of planks (9) and the plurality of blocks of lightening material (5) in such a way that: they are in contact with one another; and are aligned with respect to a same horizontal plane (H); each block of lightening material (5) of the plurality of blocks of lightening material (5) can be held still by at least two planks of the first plurality of planks (9) which are opposite one another; a containing surface (3) is defined for a casting of concrete (2); fixing the first plurality of planks (9) to one another and/or to a frame; arranging a plurality of reinforcing elements (4) above the first plurality of planks (9) and fixing the reinforcing elements (4) to the first plurality of planks (9); arranging a plurality of containing walls (16) for a casting of concrete (2), which emerge from the horizontal plane (H) and which surround the containing surface (3) to define, with the containing surface (3), a containing volume (27); casting concrete into the containing volume (27) so as to fix the plurality of blocks of lightening material (5) and the plurality of reinforcing elements (4) to one another. It is not necessary for the above-described steps to be carried out one following another.

[0026] The planks of the first plurality of planks (9) are preferably parallelepiped and have a longitudinal extension; the blocks of lightening material of the plurality of blocks of lightening material (5) are parallelepiped, and the steps of positioning the first plurality of planks (9) and the plurality of blocks of lightening material (5) comprise a first plurality of cycles, each cycle comprising steps of: positioning a first block of lightening material (6) of the plurality of blocks of lightening material (5) so that a relative first face (21) goes into contact against a first flank (31) of a first plank (41) of the first plurality of planks (9) which has already been positioned and which is orientated in a first horizontal direction (A); and positioning a second plank (42) of the first plurality of planks (9) so that a relative second flank (32) goes into contact against a second face (22), opposite the first face (21), of the first block of lightening material (6) of the plurality of blocks of lightening material (5), so that the first block of lightening material (6) of the plurality of blocks of lightening material (5) can be held still by the first plank (41) of the first plurality of planks (9) and by the second plank (42) of the first plurality of planks (9) which are opposite one another. See figures 7, 8. In this way it is advantageously not necessary to take measurements in order to carry out the positioning of the first plurality of planks (9) and the plurality of blocks of lightening material (5). This is due to the fact that the first plurality of planks (9) and the plurality of blocks of lightening material (5) must be arranged flanked to one another and in contact with one another, so that it is sufficient to arrange them one against the others as the positioning thereof is gradually proceeded to. In a case where the first plurality of planks (9) are identical to one another and in which the plurality of blocks of lightening material (5) are identical to one another it is possible to obtain a positioning of the blocks of lightening material with a same interaxis with respect to one another, which advantageously gives the floor (1) uniform behaviour in response to mechanical stress.

[0027] The steps of positioning the first plurality of planks (9) and the plurality of blocks of lightening material (5) preferably comprise a second plurality of cycles, each cycle comprising steps of: positioning a third plank (43) of the first plurality of planks (9) in such a way that a relative third plank (33) goes into contact against a third face (23) of a second block of lightening material (7) of the plurality of blocks of lightening material (5) which has already been positioned, so that the third plank (43) of the first plurality of planks is orientated in a second horizontal direction (B) which is perpendicular to the first horizontal direction (A); and positioning a third block of lightening material (8) of the plurality of blocks of lightening material (5) so that a relative fourth face (24) goes into contact against a fourth flank (34), opposite the third flank (33), of the third plank (43) of the first plurality of planks (9) which has just been positioned.

[0028] The first plurality of planks (9) and the plurality of blocks of lightening material (5) (this solution is not illustrated) are preferably positioned in such a way that: the first plurality of planks (9) form a plurality of borders; and the plurality of blocks of lightening material (5) are arranged in the borders of the plurality of borders. The first plurality of planks (9) and the plurality of blocks of lightening material (5) are preferably reciprocally dimensioned and arranged in such a way that each block of lightening material of the plurality of blocks of lightening material (5) arranged in a corresponding border of the plurality of borders is jointed internally thereof.

[0029] The method preferably comprises steps of: providing a second plurality of planks (18); before positioning the first plurality of planks (9) and the plurality of blocks of lightening material (5), positioning the planks of the second plurality of planks (18) distanced from one another; positioning the first plurality of planks (9) and the plurality of blocks of lightening material (5) resting on the second plurality of planks (18).

[0030] The method preferably comprises steps of (figure 19): carrying out an undercut in a block of lightening material (5) of the plurality of blocks of lightening material (5) so that it is comprised between a first plank (51) of the second plurality of planks (18) and a second plank (52) of the second plurality of planks (18) which are adjacent to one another, which is accessible from the side of the second plurality of planks (18), and which forms a housing (15) for a device (14); inserting a device (14) in the housing (15) and connecting the device (14) by means of connections (13) which pass between a plank of the second plurality of planks (18) and a further plank of the second plurality of planks (18) which are adjacent to one another.

[0031] The method preferably comprises steps of: providing a plurality of finishing slabs (29); and fixing the plurality of finishing slabs (29) to the second plurality of planks (18) so as to remain in view.

[0032] As concerns the method, the same considerations as described above for the floor (1) are valid: for

example, the finishing slabs (29) can be made of plasterboard or fibreboard, as already specified in the foregoing.

[0033] In the following reference will be explicitly made to the figures, which illustrate a preferred embodiment of the method of the invention.

[0034] Initially, see figures 1-3, the planks of the second plurality of planks (18) are positioned above the walls (12) of a lower plane and a provisional scaffolding (17) which connects the walls (12). The planks of the second plurality of planks (18) are spaced from one another, for example by 10cm.

[0035] Thereafter, figures 4-6, the planks of the first plurality of planks (9) are fixed above the planks of the second plurality of planks (18) (for example by clamps) and the reinforcing elements (4) of the plurality of reinforcing elements (4) are fixed above the planks of the first plurality of planks (9). Then, figures 7-9, the blocks of lightening material of the plurality of blocks of lightening material (5) are positioned.

[0036] It is however preferable, though not appreciable from the drawings, that the fixing of the planks of the first plurality of planks (9) to the planks of the second plurality of planks (18) is done progressively with the laying of the blocks of lightening material of the plurality of blocks of lightening material (5), as this avoids the need for not taking measurements for the positioning and fixing of the planks of the first plurality of planks (9) above the planks of the second plurality of planks (18). In other words, a first plank (41) of the first plurality of planks (9) is fixed to the planks of the second plurality of planks (18), the first plank (41) of the first plurality of planks (9) is placed in contact with a first block of lightening material (6) of the plurality of blocks of lightening material (5), a second plank (42) of the first plurality of planks (9) is placed in contact with the first block of lightening material (6) of the plurality of blocks of lightening material (5), the second plank (42) of the first plurality of planks (9) is fixed to the second plurality of planks (18), and so on, rapidly and simply, as already specified in the foregoing (figures 7, 8).

[0037] Thereafter, figures 10-12, a plurality of brackets and reinforcing rods (28) can be positioned for realising concrete beams, and an electro-welded grid (19) for reinforcement, for forming a concrete floor (20). Further, the containing walls (16) of the plurality of containing walls (16) for the casting of concrete (2) are arranged, which rise from the horizontal plane (H) (defined by the planks of the second plurality of planks (18) in this case) and which surround the containing surface (3) for defining, with the containing surface (3), the containing volume (27).

[0038] Then, figures 13-15, concrete is cast into the containing volume (27) so as to fix the plurality of blocks of lightening material (5) and the plurality of reinforcing elements (4) to one another.

[0039] Thereafter, figures 16-18, the finishing slabs of the plurality of finishing slabs (29) are fixed to the planks of the second plurality of planks (18), so as to remain in view from the lower plane.

[0040] Lastly, figure 19, an undercut is made in a block of lightening material (5) of the plurality of blocks of lightening material (5) so that it is comprised between a first plank (51) of the second plurality of planks (18) and a second plank (52) of the second plurality of planks (18) which are adjacent to one another, which is accessible from the side of the second plurality of planks (18), and which forms a housing (15) for a device (14), in particular a lamp; then a lamp (14) is inserted in the housing (15) and the device (14) connected by means of cables (13) which pass between a plank of the second plurality of planks (18) and a further plank adjacent to the second plurality of planks (18).

Claims

1. A method for realising a floor (1), comprising a step of:

   providing a plurality of blocks of lightening material (5);
   characterised in that it comprises steps of:

   providing a first plurality of planks (9);
   positioning the first plurality of planks (9) and the plurality of blocks of lightening material (5) in such a way that: they are flanked with one another; they are in contact with one another; and are aligned with respect to a same horizontal plane (H); each block of lightening material (5) of the plurality of blocks of lightening material (5) can be held still by at least two planks of the first plurality of planks (9) which are opposite one another; a containing surface (3) is defined for a casting of concrete (2);
   fixing the first plurality of planks (9) to one another and/or to a frame;
   arranging a plurality of reinforcing elements (4) above the first plurality of planks (9) and fixing the plurality of reinforcing elements (4) to the first plurality of planks (9);
   arranging a plurality of containing walls (16) for a casting of concrete (2), which emerge from the horizontal plane (H) and which surround the containing surface (3) to define, with the containing surface (3), a containing volume (27);
   casting concrete into the containing volume (27) so as to fix the plurality of blocks of lightening material (5) and the plurality of reinforcing elements (4) to one another.

2. The method for realising a floor (1) of the preceding claim, wherein the planks of the first plurality of planks (9) have a parallelepiped shape and a longi-

tudinal extension, wherein the blocks of lightening material of the plurality of blocks of lightening material (5) have a parallelepiped shape, and wherein the steps of positioning the first plurality of planks (9) and the plurality of blocks of lightening material (5) comprise a first plurality of cycles, each cycle comprising steps of: positioning a first block of lightening material (6) of the plurality of blocks of lightening material (5) so that a relative first face (21) goes into contact against a first flank (31) of a first plank (41) of the first plurality of planks (9) which has already been positioned and which is orientated in a first horizontal direction (A); and positioning a second plank (42) of the first plurality of planks (9) so that a relative second flank (32) goes into contact against a second face (22), opposite the first face (21), of the first block of lightening material (6) of the plurality of blocks of lightening material (5), so that the first block of lightening material (6) of the plurality of blocks of lightening material (5) can be held still by the first plank (41) of the first plurality of planks (9) and by the second plank (42) of the first plurality of planks (9) which are opposite one another.

3. The method for realising a floor (1) of the preceding claim, wherein the steps of positioning the first plurality of planks (9) and the plurality of blocks of lightening material (5) comprise a second plurality of cycles, each cycle comprising steps of: positioning a third plank (43) of the first plurality of planks (9) in such a way that a relative third plank (33) goes into contact against a third face (23) of a second block of lightening material (7) of the plurality of blocks of lightening material (5) which has already been positioned, so that the third plank is orientated in a second horizontal direction (B) which is perpendicular to the first horizontal direction (A); and positioning a third block of lightening material (8) of the plurality of blocks of lightening material (5) so that a relative fourth face (24) goes into contact against a fourth flank (34), opposite the third flank (33), of the third plank (43) of the first plurality of planks (9) which has just been positioned.

4. The method for realising a floor (1) of any one of the preceding claims, wherein the first plurality of planks (9) and the plurality of blocks of lightening material (5) are positioned in such a way that: the first plurality of planks (9) form a plurality of borders; and the plurality of blocks of lightening material (5) are arranged in the borders of the plurality of borders.

5. The method for realising a floor (1) of any one of the preceding claims, wherein: it comprises a step of providing a second plurality of planks (18); before positioning the first plurality of planks (9) and the plurality of blocks of lightening material (5), positioning the planks of the second plurality of planks (18) distanced from one another; positioning the first plurality of planks (9) and the plurality of blocks of lightening material (5) resting on the second plurality of planks (18).

6. The method for realising a floor (1) of the preceding claim, comprising steps of: carrying out an undercut in a block of lightening material (5) of the plurality of blocks of lightening material (5) so that is comprised between a first plank (51) of the second plurality of planks (18) and a second plank (52) of the second plurality of planks (18) which are adjacent to one another, which is accessible from the side of the second plurality of planks (18), and which forms a housing (15) for a device (14); inserting a device (14) in the housing (15) and connecting the device (14) by means of connections (13) which pass between a plank of the second plurality of planks (18) and a further plank of the second plurality of planks (18) which are adjacent to one another.

7. The method for realising a floor (1) of claim 6 or 7, comprising steps of providing a plurality of finishing slabs (29); and fixing the plurality of finishing slabs (29) to the second plurality of planks (18) so as to remain in view.

8. A floor (1) comprising a plurality of blocks of lightening material (5); **characterised in that**:

it comprises a first plurality of planks (9);
the first plurality of planks (9) and the plurality of blocks of lightening material (5) are positioned in such a way that: they are flanked to one another; they contact one another; they are aligned with respect to a same horizontal plane (H); each block of lightening material (5) of the plurality of blocks of lightening material (5) is abutted by at least two planks of the first plurality of planks (9) which are opposite one another; a containing surface (3) is defined for a casting of concrete (2);
it comprises a plurality of reinforcing elements (4) arranged above the first plurality of planks (9) and fixed to the first plurality of planks (9);
it comprises a casting of concrete (2) which rises from the containing surface (3) and which fixes to one another the plurality of blocks of lightening material (5) and the plurality of reinforcing elements (4);
the first plurality of planks (9) are fixed to one another and/or to a frame.

9. The floor (1) of the preceding claim, wherein the planks of the first plurality of planks (9) have a parallelepiped shape and a longitudinal extension, wherein the blocks of lightening material of the plurality of blocks of lightening material (5) have a par-

allelepiped shape, and wherein the first plurality of planks (9) and the plurality of blocks of lightening material (5) are positioned in such a way that: each block of lightening material (5) of the plurality of blocks of lightening material (5) is interposed between two opposite planks, both orientated in a first horizontal direction (A) and being a part of a first part of a the first plurality of planks (9).

10. The floor (1) of the preceding claim, wherein the first plurality of planks (9) and the plurality of blocks of lightening material (5) are positioned in such a way that each plank of a second part of the first plurality of planks (9) is orientated in a second horizontal direction (B), perpendicular to the first horizontal direction (A), and is interposed between two blocks of lightening material of the plurality of blocks of lightening material (5).

11. The floor (1) of any one of the preceding claims, wherein the first plurality of planks (9) and the plurality of blocks of lightening material (5) are positioned in such a way that: the first plurality of planks (9) form a plurality of borders; and the plurality of blocks of lightening material (5) are arranged in the borders of the plurality of borders.

12. The floor (1) of any one of the preceding claims, comprising a second plurality of planks (18) which are distanced from one another; wherein the first plurality of planks (9) and the plurality of blocks of lightening material (5) are arranged resting on the second plurality of planks (18).

13. The floor (1) of the preceding claim, wherein a block of lightening material (5) of the plurality of blocks of lightening material (5) is provided with an undercut which is comprised between a first plank (51) of the second plurality of planks (18) and a second plank (52) of the second plurality of planks (18) which are adjacent to one another, which is accessible from the side of the second plurality of planks (18), and which forms a housing (15) for a device (14); and wherein it comprises a device (14) which is arranged in the housing (15) and connections (13) which are connected to the device (14) and which pass between a plank of the second plurality of planks (18) and a further plank of the second plurality of planks (18) which are adjacent to one another.

14. A floor (1) according to claim 12 or 13, comprising a plurality of finishing slabs (29) which are fixed to the second plurality of planks (18) so as to remain in view.

FIG 1

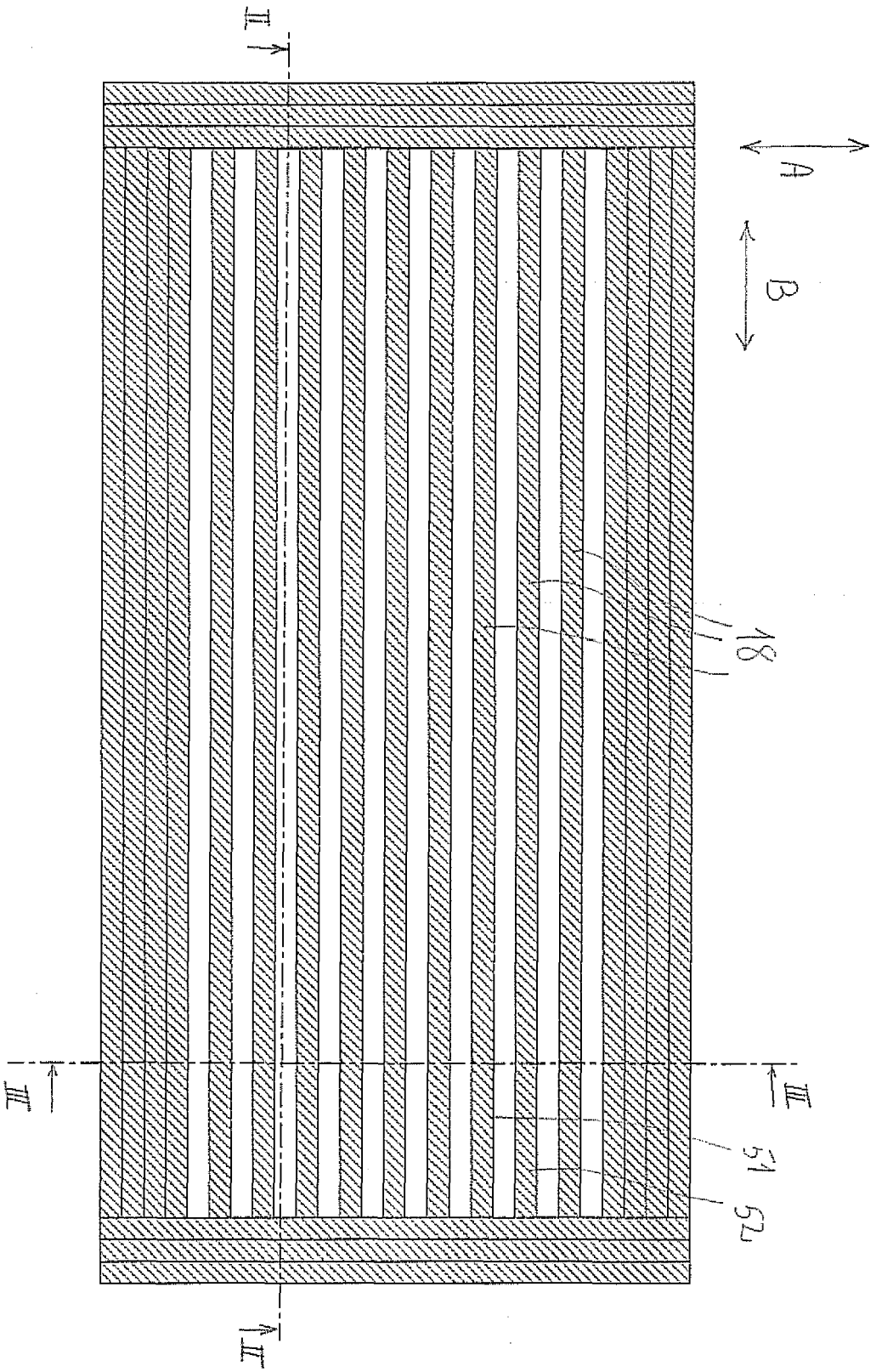


FIG 2

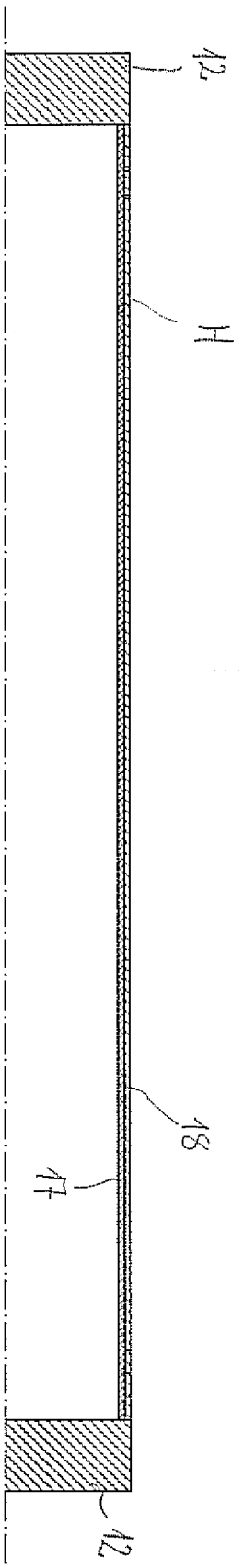


FIG 3

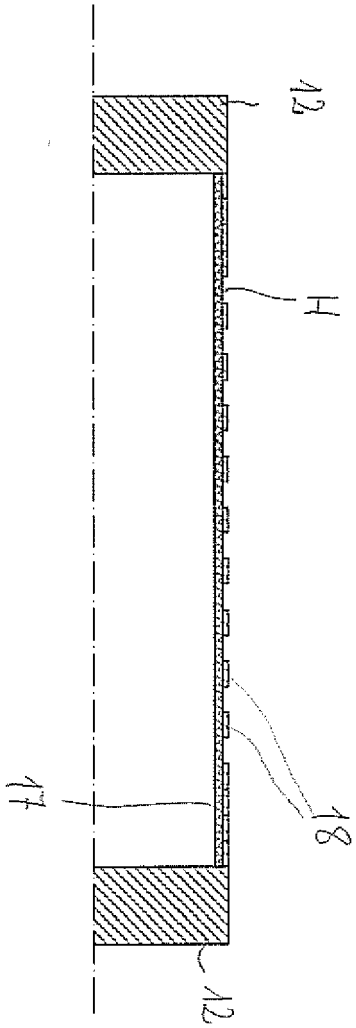


FIG 4

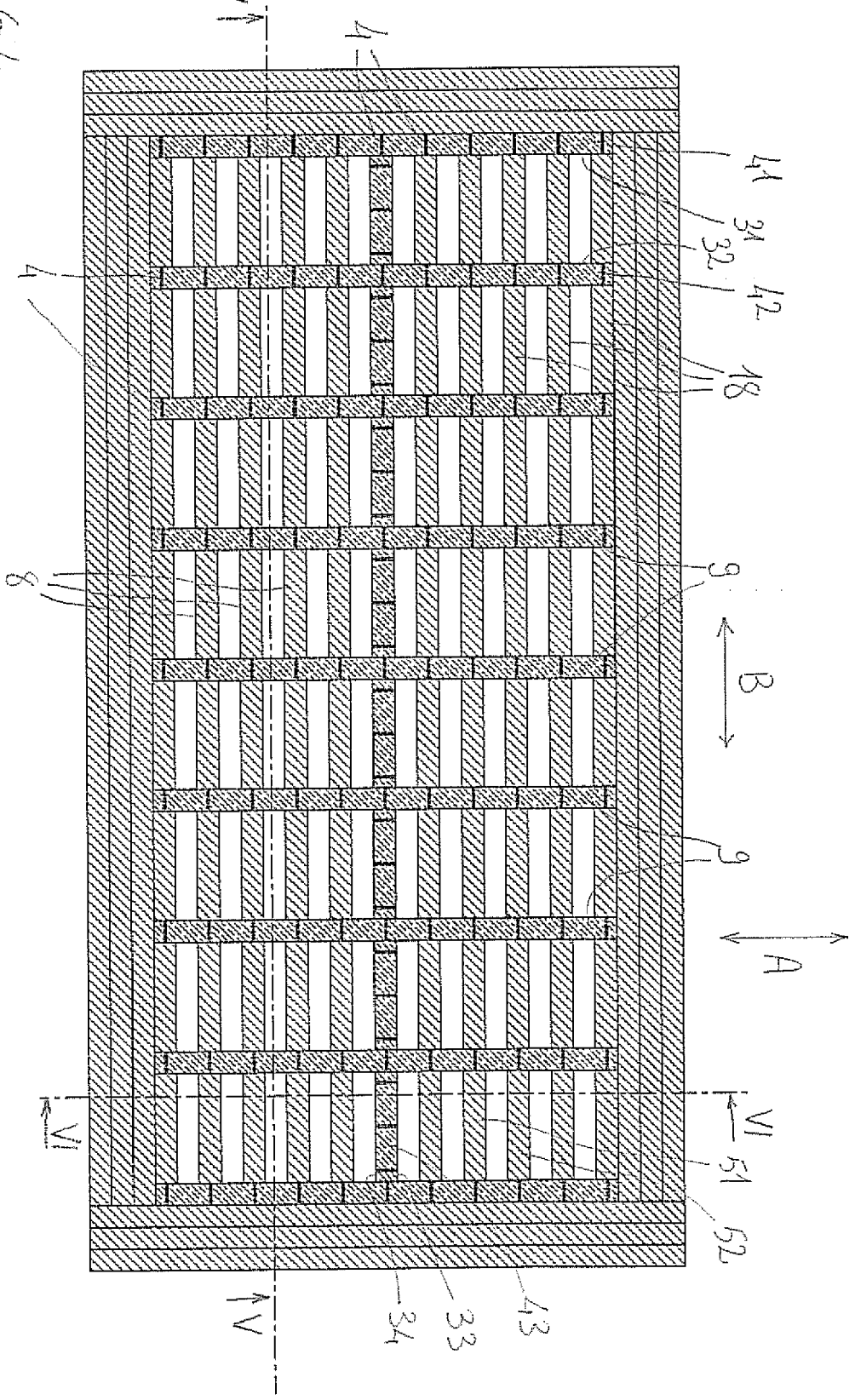


FIG 5

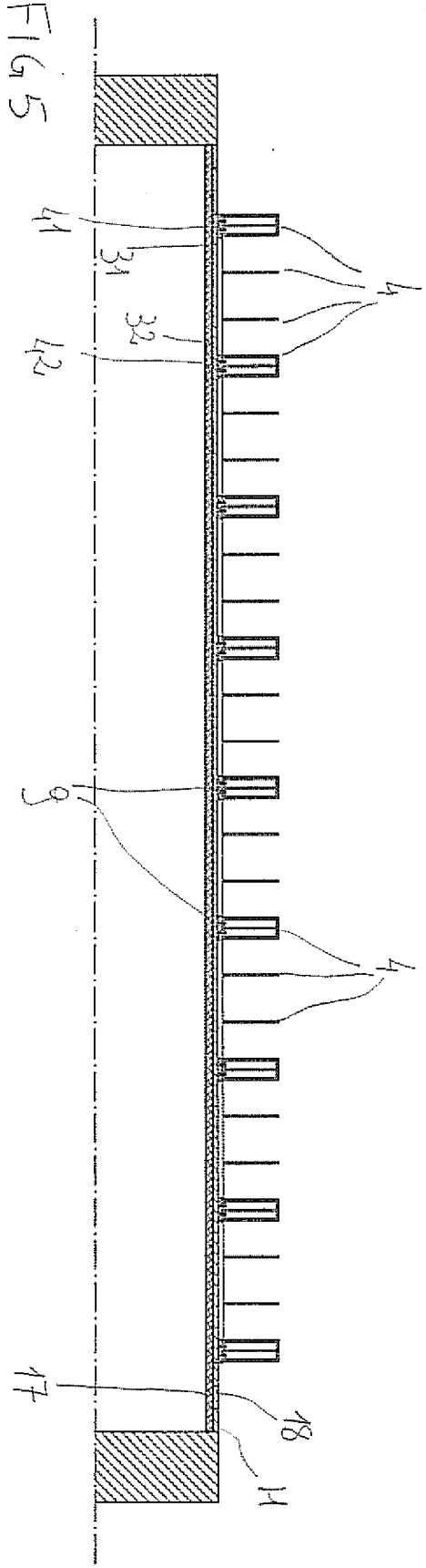


FIG 6

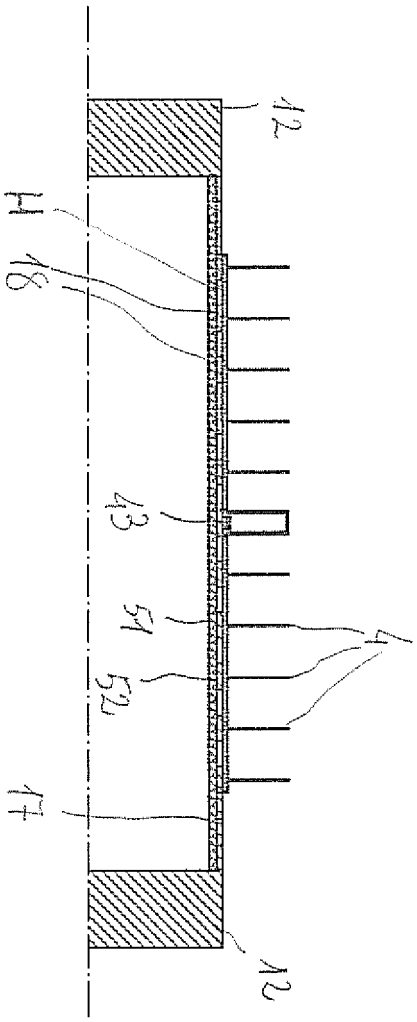
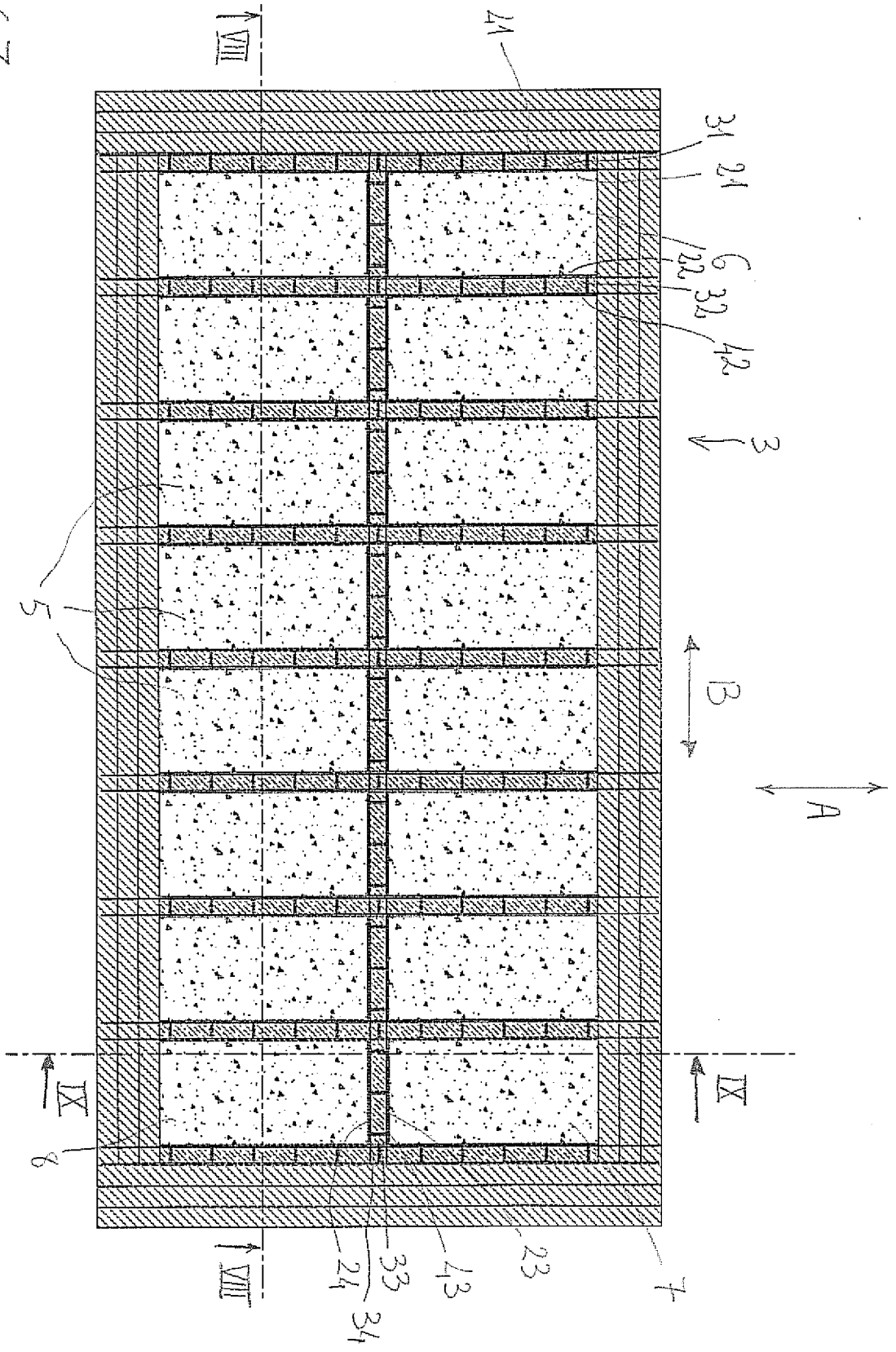


FIG 7



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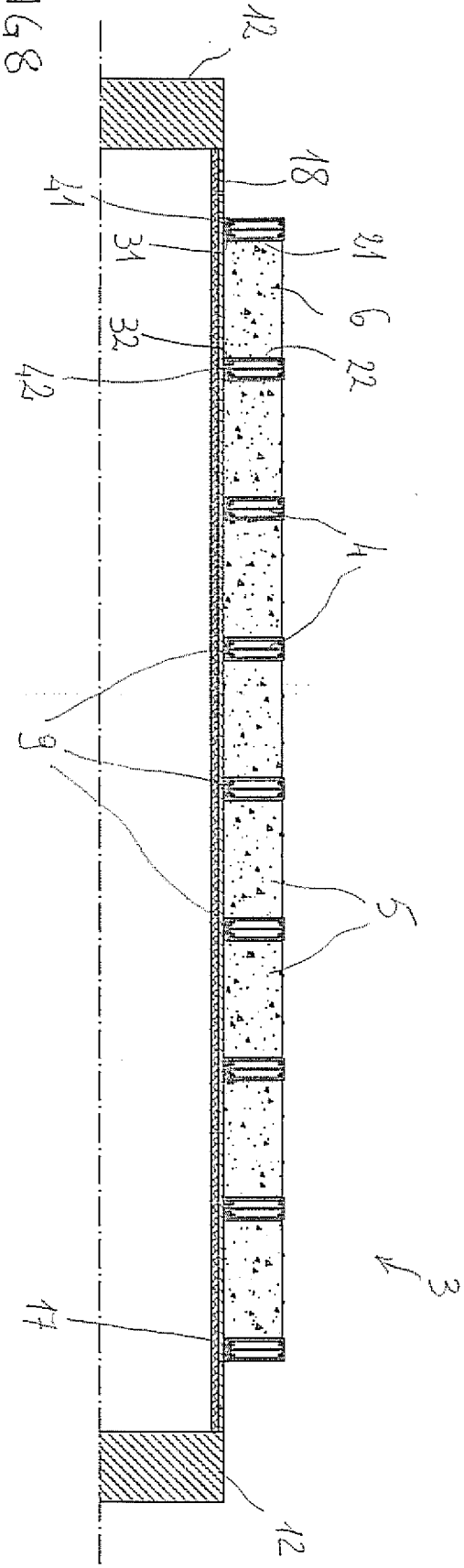
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FIG 9

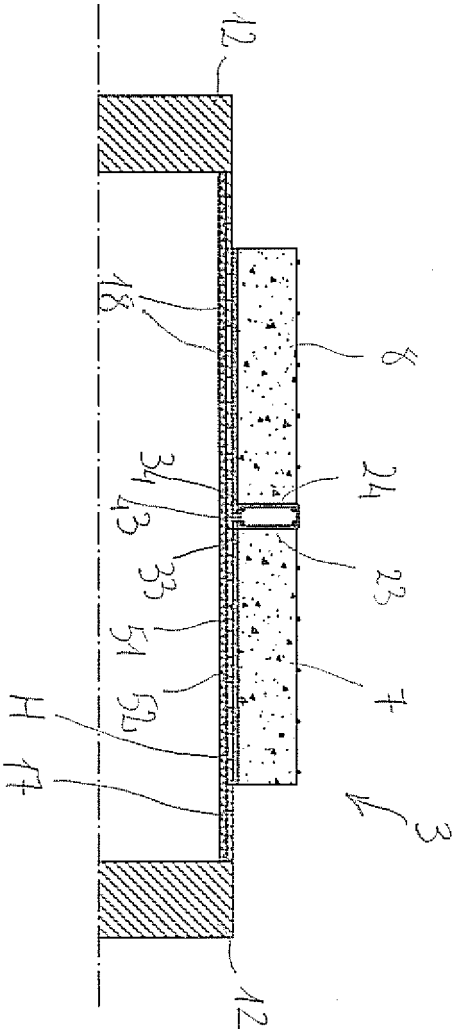
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FIG 10

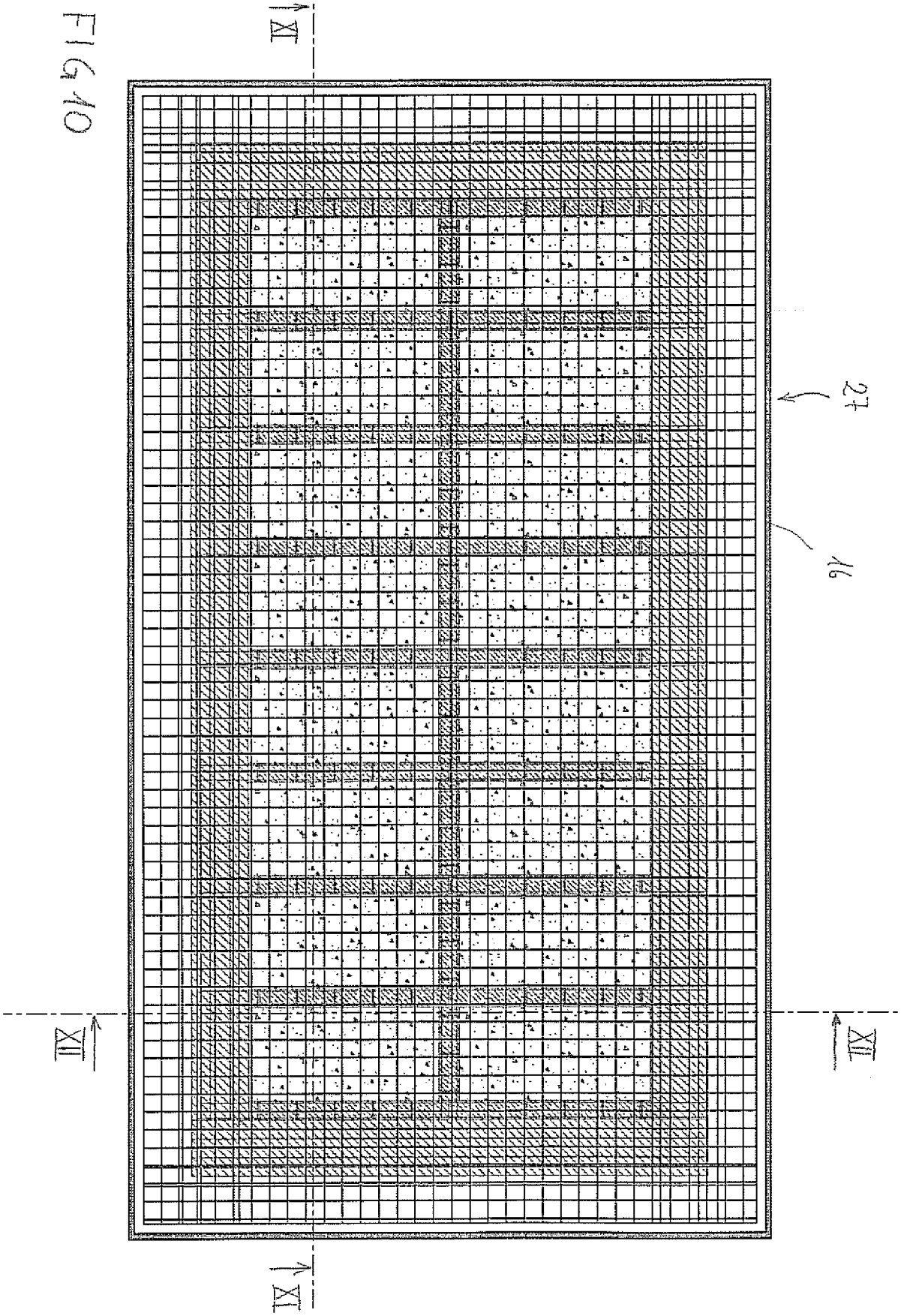

FIG 11

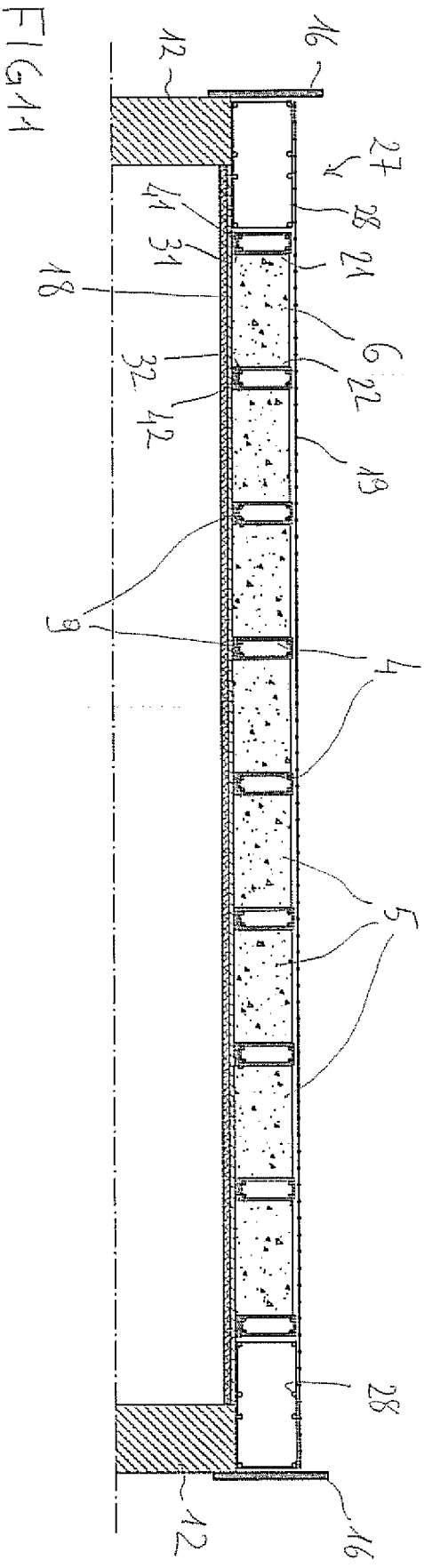
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FIG 12

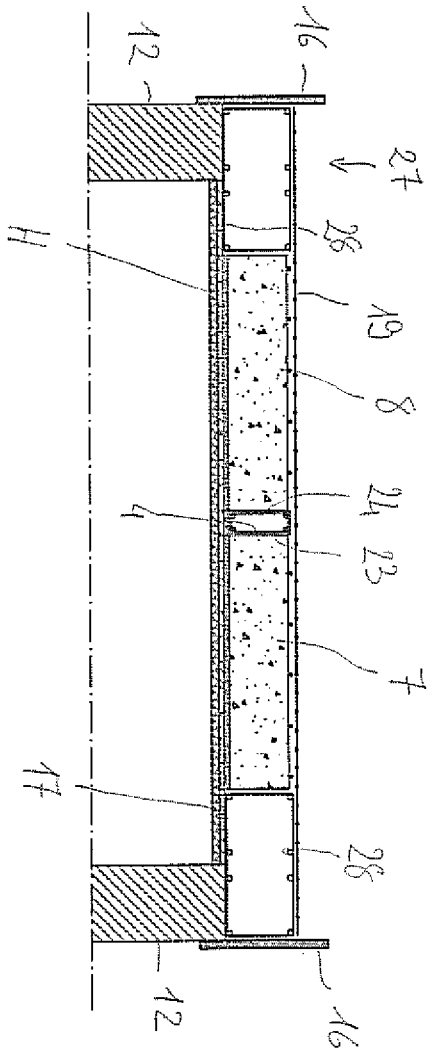
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FIG 13

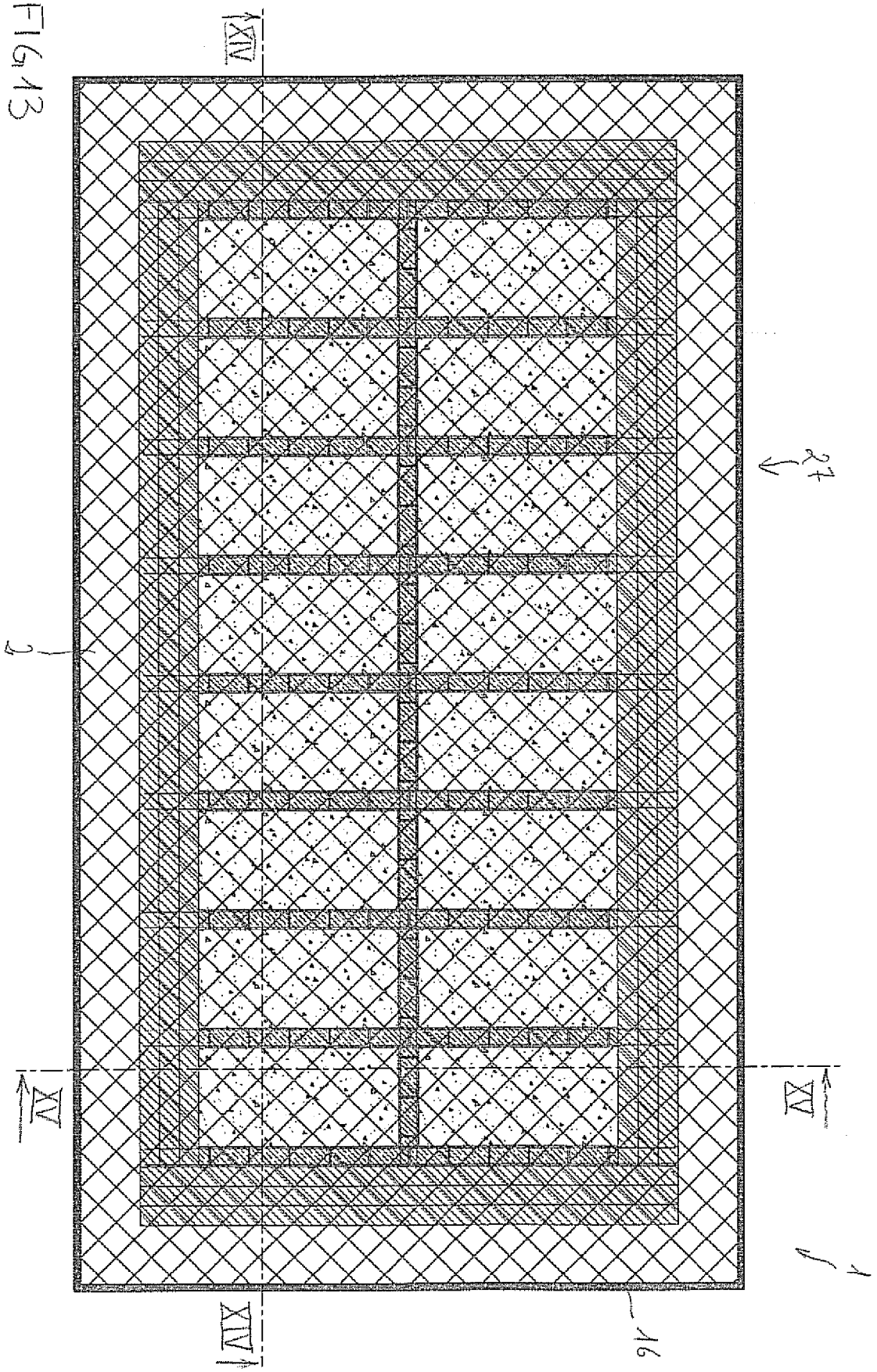

FIG 14

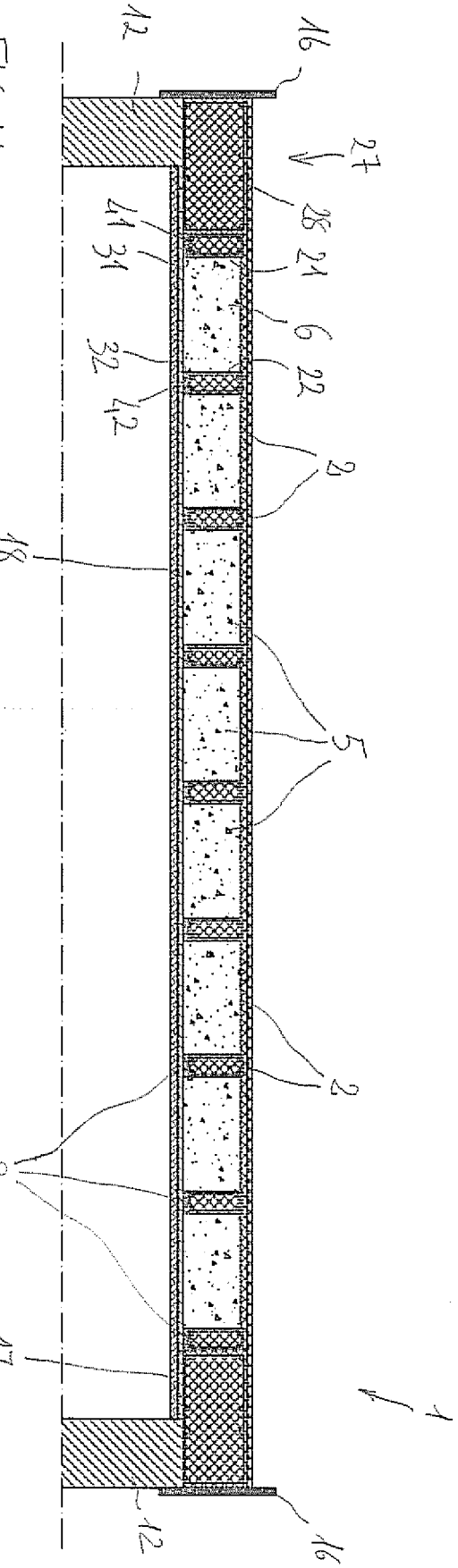
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FIG 15

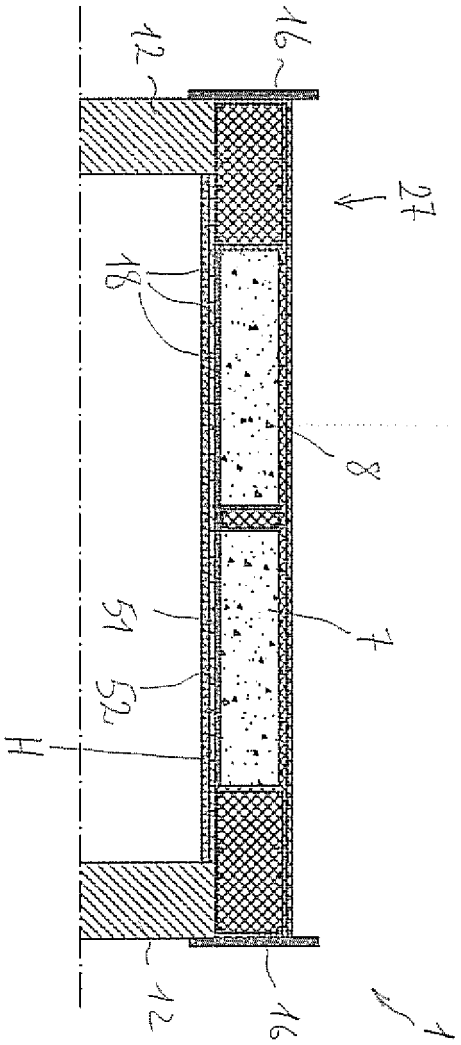
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FIG 16

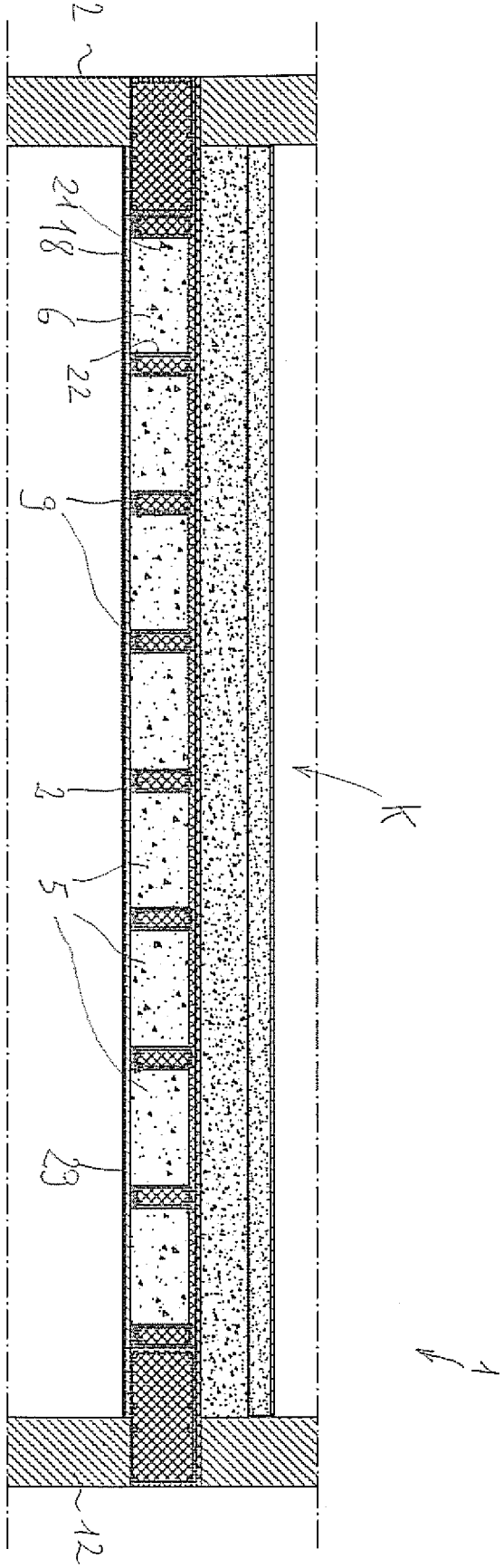


FIG 17

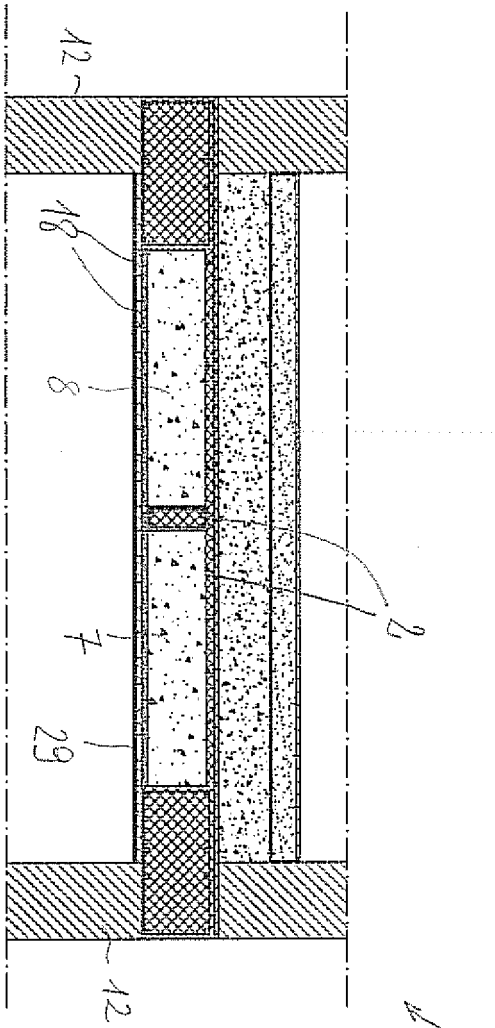


FIG 18

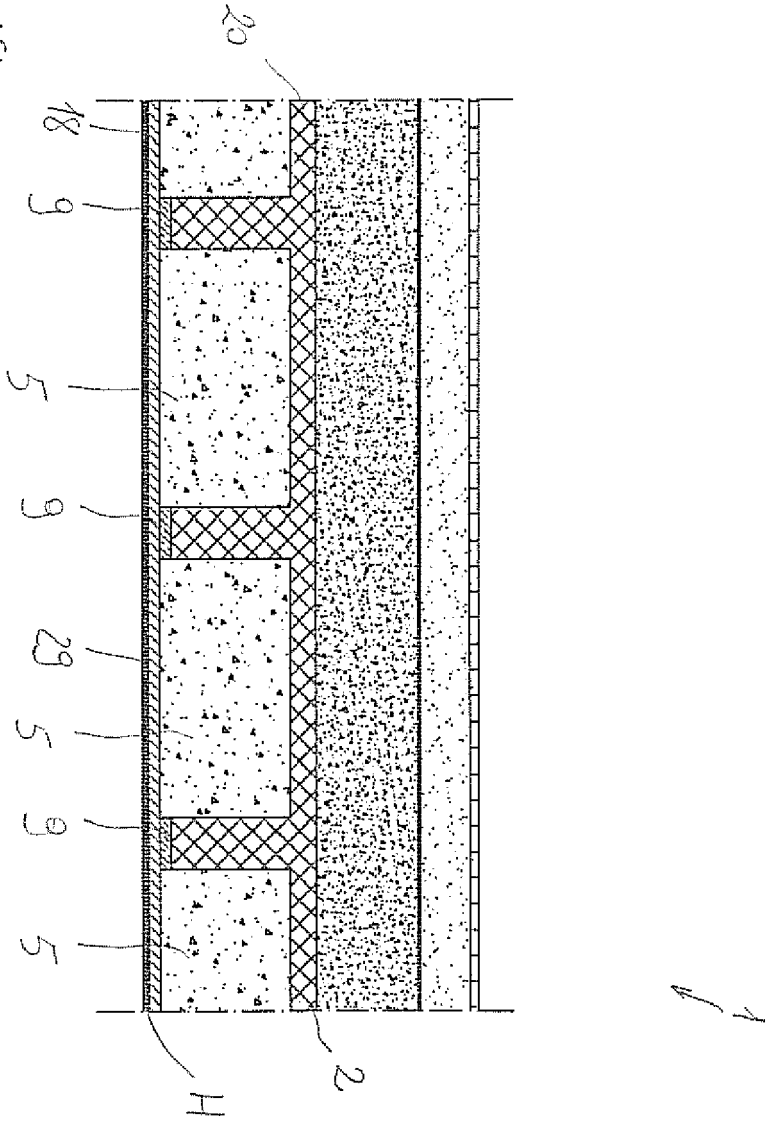
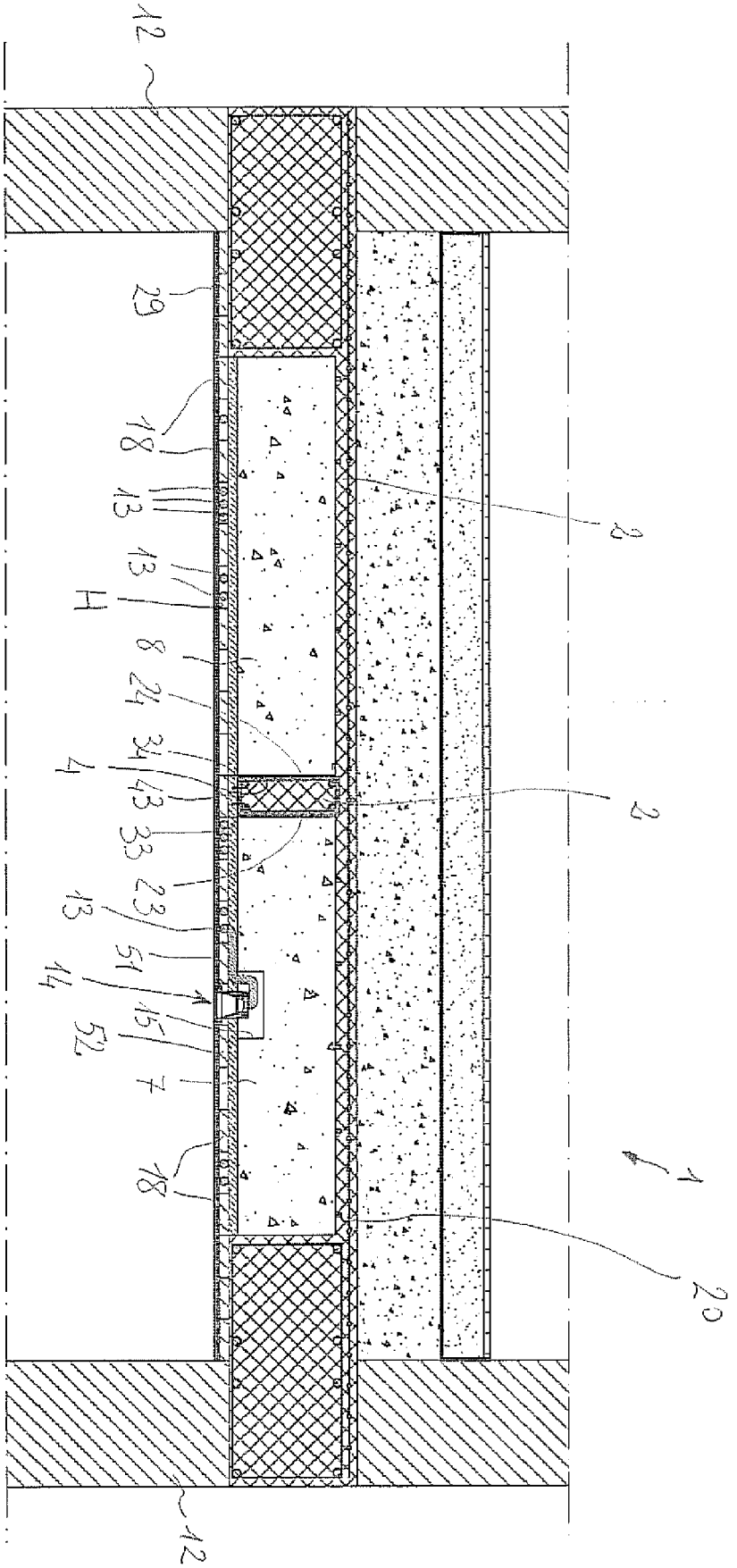


FIG 19



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EUROPEAN SEARCH REPORT

Application Number
EP 17 21 0663

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	IT UB20 153 122 A1 (FEDERICO SAZZINI) 31 January 2017 (2017-01-31) * page 4, last paragraph - page 5, last paragraph; figures *	1-14	INV. E04B5/18 ADD. E04B5/21
X	AT 000 677 U1 (UNGER HERMANN) 25 March 1996 (1996-03-25)	1,2,8,9	
A	* page 3, line 1 - line 30; figure 1 *	3-7, 10-14	
X	DE 88 06 377 U1 (R. SCHRÖTER) 1 September 1988 (1988-09-01)	1,2,8,9	
A	* page 2, paragraph 2 - paragraph 3; figures *	3-7, 10-14	

TECHNICAL FIELDS SEARCHED (IPC)
E04B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	31 July 2018	Righetti, Roberto

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EPO FORM 1503 03.82 (P04C01)

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31-07-2018

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
IT UB20153122 A1	31-01-2017	----------	----------
AT 000677 U1	25-03-1996	----------	----------
DE 8806377 U1	01-09-1988	NONE	

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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- FR 2316401 **[0002]**