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(54) **A PRECISE WALLING BLOCK AND METHOD FOR CALIBRATION THEREOF**

(57) The invention relates to the dimensional calibration of a precision walling block (1), preferably a ceramic block (1), that has two machined opposite loading surfaces (2, 2'), two opposite contact surfaces (3, 3'), and two opposite facing surfaces (4, 4'). For calibrating the dimensions of blocks (1) and for compensating manufacturing dimensional deviations, onto at least one facing surface (4, 4') there is applied a calibration layer (5) of semi-rigid material (9) on a silicate base, preferably a lime-cement or other plaster which cures after coating. The thickness (Δt_i) of the calibration layer (5) is adjustable and corresponds to the difference between the final de-

sired calibrated distance (L_v) and the nominal distance (L_{ji}) of the surface of each block (1). The calibration is preferably executed using the applicator means (8) on a number of blocks (1) moving on a conveyor (6). After the calibration layer (5) has cured, the blocks (1) are dimensionally unified on their facing surfaces (4, 4') and only a thin layer of plaster is needed during the finishing work on the façade or on the interior plasters. The method of calibration according to the invention is inexpensive and suitable for line production of ceramic, concrete, porous concrete, foam silicate, aerated concrete, heat-insulated, and other blocks (1).

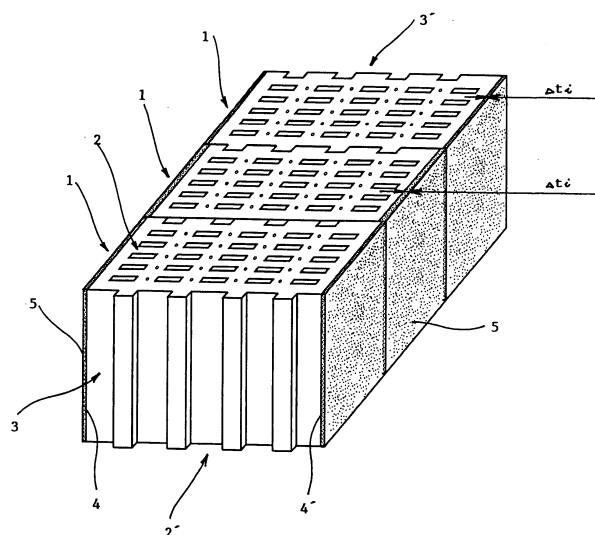


FIG. 7

Description

Field of the invention

[0001] The invention relates to construction, namely to the production of precision walling blocks.

Background of the invention

[0002] Increasing demands are generally placed on walling blocks for dimensional accuracy in order to minimize costs for walling and wall coverings.

[0003] Ceramic walling blocks, compared to other constructional walling units, have a certain disadvantage in that it is very difficult to maintain completely accurate measurements within small tolerances in the finished product. During the baking and drying of blocks made of block clay in kilns, shrinkage of the material occurs, which is not the same for all batches of products. This results in individual batches of blocks dimensionally differing from each other. When laying these blocks, the dimensional differences between the individual blocks is compensated for by a thicker layer of mortar on the loading face and of the plaster on the outer facing, which leads to a more expensive and more difficult process of walling and plastering. A similar problem occurs with concrete blocks, where the dimensional tolerances are limited by the clearance in the forms, differences in material composition, and inaccuracies in the manufacturing process. Demands for maximum accuracy in the dimensions, however, concern all walling blocks including, for example, foam silicate, calcium silicate, and others.

[0004] To overcome this deficiency in ceramic walling blocks, so-called precision ground ceramic blocks are known and used, both loading surfaces of which are machined to an accuracy of one tenth of a millimeter. The machining is performed by milling heads included in the production line past the kiln. Both loading surfaces that are combined by mortar during walling are milled, i.e. the top surface and the bottom surface. To compensate for the height of the inaccuracies between adjacent blocks when walling in row, a leveling layer of about 1 mm is sufficient. Thin-bed mortars and adhesive foams are used which make the construction process significantly cheaper, faster, and easier.

[0005] The other areas of the block, i.e. the contact surface and facing surface, may exhibit dimensional deviations of up to 1 cm according to the standard, which is problematic especially on the facing surfaces. The facing surfaces are understood as the surfaces that are oriented towards the façade and inside the room. When plastering these surfaces, a thick layer of mortar is needed again to compensate for these inaccuracies.

[0006] Patent CZ 304563 solves this problem by producing accurate ceramic walling blocks which, in addition to the loading areas, also have machined facing surfaces and which are provided with grooves for better adhesion of the mortar. The grinding, respectively the machining,

of the facing surfaces occurs after drying in the kiln. During subsequent surface finishes on the building site, plastering must be done using a relatively thin layer of 5 mm of plaster, usually a single layer. The disadvantage of the solution according to document CZ 304563 consists in that machining blocks is expensive and is demanding regarding energy and equipment. The high costs of machining multiple surfaces on one block subsequently increase the selling price of the product and reduce its competitiveness. Equipment for grinding the blocks is also described in document EP 0849036B1.

[0007] Patent document EP 0708210A1 describes a block fitted with insulation, an insulating layer, or an insulating plate which is connected to the block. This is a thermally insulating foamed clay material which is mounted in prismatic lines on the facing surface of the block. The front side of the insulating layer is ground to meet the requirements for the dimensional precision of individual blocks.

[0008] Patent CZ 295209 and other documents SU 837958, RU 2055032, and SU 742409 describe a general constructional block which can be formed as a ceramic walling block which is fitted with a finishing coat on the facing surface. The finishing coat is decorative in nature and comprises a mixture of cement and sand in various fractions. The thickness of the finishing coat is 3 to 50 mm, and the coating can be attached using anchor lugs. The decorative coating is applied to the walling block in a form where the finishing coat is mixed in a liquid or plastic state. The facing surface of the walling block is inserted into the mold, soaked in the coating, and after curing, the walling block is removed from the mold along with the solidified decorative coating on the facing surface. This design is suitable particularly for walling blocks made of concrete, foam concrete, silicate aerated concrete, expanded clay concrete, or heat insulating material, and for decorative coatings based on concrete. It is not suitable for ceramic walling blocks for which the production line is adapted for the conveyor transfer of blocks, not for rotation thereof, soaking in the mold, and returning to the line, which would slow down the tempo of the production line. The method of applying a decorative coating to a block does not change its thickness according to the size of the individual batch of fired blocks. The concrete coating degrades the surface properties of the ceramic blocks.

[0009] The invention aims to remedy the deficiencies of the known solutions described above and to create a design for a precision walling block which would have calibrated dimensions of its facing surfaces, wherein the method of this calibration should be, as opposed to the machining of the facing surfaces, inexpensive and usable for production lines and would be particularly suitable for line production of precision ceramic walling blocks for the calibration of different batches.

Summary of the invention

[0010] This objective is met by the creation of a precision walling block, the method for its dimensional calibration, and an apparatus for executing this method according to the present invention. The principle of the invention is that the calibration of the external dimensions on the facing surface of the blocks, on at least one face, is achieved supplementally after drying and firing by applying a calibration layer whose thickness on each point of the surface of the calibration layer corresponds to the value

$$\Delta t_i = (L_v - L_{ji}),$$

where

L_{ji} represents the nominal distance between the central plane (R) of symmetry of the block (1) lying in the center between the facing surfaces (4,4') and the surface of the facing surface (4,4') of the block (1) before the application of the calibration layer (5)
 L_v represents the final desired calibrated distance of the surface of the calibration layer (5) on the respective facing surface (4,4') from the central plane (R) of symmetry of the block (1) lying in the center between the facing faces (4,4'), wherein the value L_v lies within a tolerance of ± 1 mm

[0011] The thickness of the calibration layer is dependent on the difference between the individual blocks and preferably ranges from 0.1 mm to 25 mm. For the creation of the calibration layer, materials based on silicate can be preferably used, which process well, and have a relatively rapid hardenability and sufficient resulting mechanical characteristics. This may be a lime-cement, gypsum, or lime-gypsum, and a fine lime plaster with a grain size up to 2 mm can be preferably used. The facing surface of the blocks can be calibrated on only one side, but the finishing layer is preferably applied to both facing surfaces, so that the block is dimensionally unified on both the facade and the room side. In order to prevent burrs from forming on the edges of the blocks, the calibration layer preferably has chamfered edges along the circumference of the facing surface.

[0012] This allows for the calibration of all walling blocks made of concrete, porous concrete, aerated concrete, foam silicate, heat-insulating material, and ceramic. This design is particularly advantageous for precision ceramic walling blocks which have precisely machined loading surfaces but inaccurate facing surfaces.

[0013] From precision walling blocks produced according to the invention, a wall can be created in which all blocks have, towards at least one side of the wall, the same value indicating the resulting desired calibrated distance of the surface of the calibration layer on the re-

spective facing surface from the central plane of symmetry of the block lying in the center between the facing surfaces. This calibrated distance (L_v) is the sum of the nominal distance (L_{ji}) and thickness (Δt_i) of the calibration layer of each block at each point of the surface, with a tolerance of ± 1 mm. For each block in the wall, the following thus applies: $L_v = (L_{ji} + \Delta t_i) \pm 1$ mm

[0014] The subject of the invention is also a method of carrying out the dimensional calibration of precision walling blocks having two opposing loading surfaces, two opposite contact faces, and two opposite facing surfaces. The principle of the method is the same in that on at least one facing surface of the block a calibration layer is applied whose thickness at each point of the surface of the calibration layer corresponds to the value

$$\Delta t_i = (L_v - L_{ji}),$$

where

L_{ji} represents the nominal distance between the central plane of symmetry of the block lying in the center between the facing surfaces and the surface of the facing surface of the block before the application of the calibration layer

L_v represents the final desired calibrated distance of the surface of the calibration layer on the respective facing surface from the central plane of symmetry of the block lying in the center between the facing faces, wherein the value L_v lies within a tolerance of ± 1 mm

[0015] The material of the calibration layer and its final adjustment have been described above. For easy application of the method of calibration into a production line for blocks, it is preferable if the calibration layer is applied to the block oriented in the vertical position of its facing surfaces. An even more preferred method may be when the calibration layer is successively applied to the blocks arranged in a row with the contact surfaces abutted towards each other and the facing surface towards the outside.

[0016] In this preferred embodiment of the method of calibration according to the invention, the material for forming the calibration layer is applied to the blocks arranged on the conveyor from the bin arranged at least on one side of the conveyor, using an applicator means created with the possibility of changing the thickness of the applied calibration layer. It is also possible to apply the calibration layer to stationary and non-moving blocks using a movable applicator means.

[0017] The calibration method according to the invention is preferably useful in the manufacture of precision ceramic walling blocks that have precisely machined loading surfaces but whose facing surfaces are inaccu-

rate from the factory. The calibration layer is applied after the blocks are dried and fired and after machining their loading surfaces.

[0018] The subject of the invention is also an apparatus for calibrating precision walling blocks which have two opposite loading surfaces, two opposite contact surfaces, and two opposite facing surfaces. The principle of the apparatus according to the invention consists in the fact that it comprises at least one conveyor for moving a row of blocks arranged with their contact surfaces abutting, their facing surfaces oriented parallel to the moving direction of the conveyor, at least one cartridge for a material on a silicate base, and at least one applicator means for applying the material in a plastic or semi-solid or pasty or foamy state in a uniform calibration layer on at least one facing surface of the block, wherein the applicator means is connected to the material cartridge.

[0019] The apparatus is preferably formed as an integral unit of the cartridge and the applicator means. The material is fed into the cartridge in application state, or the cartridge may be completed with an apparatus for preparing the material to its application state. The applicator means is preferably formed by a wedge-shaped bottom part of the cartridge, which is provided with an application opening for applying the material on the facing surface of the blocks during their movement on the conveyor and for the creation of a calibration layer.

[0020] In order to set the thickness of the calibration layer according to the nominal dimensions of the respective production batch of the blocks, wherein these dimensions are measured from the center of the blocks to the surface of the facing surfaces, the apparatus is preferably provided with a means of adjustment for adjusting the distance of the application opening from the central plane of the row of blocks on the conveyor, respectively from the facing surfaces of the blocks on the conveyor.

[0021] For fixing the blocks in a line arrangement, it is preferable when the conveyor is provided with guide rails for directing the line of blocks. In another preferred embodiment, the apparatus may be also provided with a pressing means abutting the upper loading surface of the blocks on the conveyor for better fixation.

[0022] The application opening is preferably quadrangular, and its height is the same as the height of the blocks. The height and width of the application opening can also be adjustable. The applicator means is preferably also fitted with a squeegee for smoothing, leveling, and refining the thickness of the applied material forming the calibration layer.

[0023] The apparatus can also be created in a kinematically inverted version, wherein the applicator means moves along a stationary block or row of blocks.

[0024] The advantages of the design according to the present invention consist mainly in the cheap and easy dimensional calibration of facing surfaces of precision walling blocks and in the easy change in thickness of the calibration layer for different batches of blocks. The design is suitable for inclusion in production lines for ce-

ramic blocks. The technology of the calibration, in contrast to known methods, is inexpensive and can be applied to row production. After construction of a wall from the thus treated blocks, the surface may be plastered e.g. only by a thin layer of a suitable plaster.

Clarification of the drawings

[0025] The invention is more closely illustrated in the following drawings, wherein:

- Fig. 1 shows a row of precision walling blocks of different sizes before plastering, showing the present state;
- Fig. 2 is a perspective view of the precision walling block calibrated according to the invention with a calibration layer on both facing surfaces;
- Fig. 3 shows a side view of the block according to Fig. 2, with the depiction of the dimensions;
- Fig. 4 shows a side view of the apparatus for calibrating precision walling blocks;
- Fig. 5 shows a front view of the apparatus according to Fig. 4;
- Fig. 6 shows a detailed view of the applicator means;
- Fig. 7 shows a view onto a row of precision walling blocks calibrated according to the invention on both facing surfaces.

Examples of the preferred embodiments of the invention

[0026] It is understood that the hereinafter described and illustrated specific examples of the realization of the invention are presented for illustrative purposes and not as a limitation of the examples of the realization of the invention to the cases shown herein. Experts who are familiar with the state of technology shall find, or using routine experimentation will be able to determine, a greater or lesser number of equivalents to the specific realizations of the invention which are specifically described here. These equivalents shall also be included into the scope of the patent claims.

[0027] The invention can be especially implemented for any walling blocks, such as concrete, porous concrete, aerated concrete, foam silicate, lime concrete, ceramic blocks, blocks from insulating materials, and other constructional walling blocks. The illustrated and described examples of embodiments relative to a specific ceramic walling block is equivalently applicable to other walling blocks not shown here.

[0028] Fig. 1 shows a row of precision ceramic walling blocks 1 known from the prior art. The loading surfaces 2, 2' are precisely machined by grinding or machining, the contact surfaces 3, 3' are facing each other, the outer facing surfaces 4, 4' of the middle blocks 1, compared to the two end blocks 1, have a longitudinal difference s which may be up to 10 mm.

[0029] Fig. 2 and Fig. 3 illustrate a block 1 calibrated according to the invention which completely eliminates

this disadvantage. On both facing surfaces 4, 4' the block 1 is provided with a calibration layer 5 made of lime cement plaster with a grain size of 1 mm. The calibration layer 5, in other examples of the embodiment, may be formed of another suitable material 9. Particularly suitable are plasters on a silicate base, such as e.g. gypsum or lime gypsum plaster, but in principle it is possible to use another suitable material 9 capable of curing and which has satisfactory mechanical properties such as e.g. putty, glue, leveling compound, and the like. In some cases, it is sufficient if the calibration layer 5 is applied only on one facing surface 4 of the block 1.

[0030] In order for the calibration of the blocks 1 to be sufficient, the thickness Δt_i of the calibration layer 5 at each point of the surface of the calibration layer 5 corresponds to the value $\Delta t_i = L_v - L_{ji}$. The value L_{ji} for each block 1 is different and represents the distance between its central plane R of symmetry lying in the center between the facing surfaces 4, 4' and the facing surface 4, 4' of the blocks 1 before the application of the calibration layer 5. The value L_v represents the final desired calibrated distance of the surface of the calibration layer 5 from this central plane R of symmetry. The value L_v lies within a tolerance of ± 1 mm, so no dimensional deviation occurs over max. 4 mm between two adjacent blocks 1 arranged in a row or in a wall and calibrated to the facing surfaces 4, 4' according to the invention. Such a difference is minimal and can be easily covered with a thin layer of plaster at a thickness of several mm, which represents a very significant material savings in the implementation of facades and interior plasters. The flatness of a wall assembled from blocks 1 calibrated according to the invention is evident in Fig. 7 in comparison with Fig. 1.

[0031] The thickness Δt_i of the calibration layer 5 for the individual blocks 1 varies according to the nominal dimensions of each block 1, as shown in Fig. 7. This may vary from 0.1 mm to 25 mm. Depending on the method of application and the type of material 9 of the calibration layer 5, the calibration layer 5 may have chamfered edges around the circumference of the facing surfaces 4, 4' before curing to prevent the formation of protrusions or burrs, which would in turn disrupt the flatness of the surface of the wall assembled of blocks 1.

[0032] The application of the material 9 forming the calibration layer 5 on the facing wall 4, 4' of the blocks 1 can take place in various ways. The material 9 can be applied e.g. manually using appropriate tools and templates and standards that ensure the achievement of the desired final calibrated distance L_v .

[0033] For industrial calibration of blocks in production plants, it is preferred to use a calibration apparatus which may have many forms and embodiments, depending on the choice of material 9 and the method of coating on the facing surface 4, 4', which may be carried out e.g. by spraying, dipping, wiping, sticking, coating, plating, and the like. The apparatus shown in Figs. 4 to 6 is only one of the possible variants of the apparatus suitable for in-

dustrial application. The apparatus consists of a frame 16 and a chain conveyor 6 on which the blocks 1 are laid abutting each other, the contact surfaces 3, 3' towards each other, and the facing surfaces 4, 4' parallel to the direction of movement. The blocks 1 must be centered on the center of the conveyor 6. For the precise movement of the blocks 1 on the conveyor 6, guide rails 12 are used or possibly a pressure belt (not shown) resting on the upper loading surface 2 of the blocks 1 and pressing the row of blocks 1 to the conveyor 6 in a fixed position. Instead of the chain conveyor 6, another suitable conveyor 6 may be used, e.g. a belt conveyor which secures the centered position of the blocks 1. Along both sides of the conveyor 6 on the frame 16 there are mounted stands 15 bearing cartridges 7 with an applicator means 8 for applying the material 9 that forms the calibration layer 5 on the facing wall 4, 4' of the blocks 1 during their movement on the conveyor 6. The stands 15 are provided with a means for adjustment 11 for adjusting both vertically and horizontally i.e. in the direction away from or towards the conveyor 6. The cartridge 7 contains a lime-cement plaster or another suitable material 9, in a plastic or wet state. The cartridge 7 may be connected by a tube (not shown) to the apparatus for the preparation of the material 9. The cartridge 7 is welded from a steel plate, as is the applicator means 8 which forms a continuous wedge-shaped bottom part of the cartridge 7, which is open in the direction towards the blocks and forms a tetragonal application opening 10. The material 9, through gravitational force, is pushed from the reservoir 7 to the application opening 10 and is discharged onto the facing wall 4, 4' of the blocks 1 passing the application opening 10 along the conveyor 6. To prevent the material 9 from leaking around the edges of the blocks 1, the application opening 10 is surrounded by flanges 14 on its top and bottom edges. The vertical edge of the application opening 10 in the direction of the movement of the blocks 1 is fitted with a metal or rubber squeegee 13 which smooths and levels the surface of the material 9 forming the calibration layer 5.

[0034] Using the means for adjustment 11, the appropriate distance of the application opening 10 can be set to create the necessary thickness Δt_i of the calibration layer 5 and achieve the final desired calibrated distance L_v , thus providing a sufficient dimensional unification of the blocks 1.

[0035] Beyond the applicator means 8 and at the end of the conveyor 6, the blocks 1 with the applied calibration layer 5 are separated from the row and cleaned, respectively the edges of the facing surfaces 4, 4' are knocked off so as to prevent unevenness from the material 9 that would prevent the placement of the blocks 1 from abutting each other while building a wall and which would worsen the flatness of the wall. After removing the blocks 1 from the conveyor 6, the blocks 1 are stored in an intermediate storage to await curing of the calibration layer 5 to be finally stored on a shipping pallet.

Industrial applicability

[0036] The invention is usable in construction and in the production of construction materials, particularly of precision walling blocks.

[0037] Overview of the positions used in the drawings

1	precision ceramic walling block	
2	loading surface	
2'	loading surface	
3	contact surface	
3'	contact surface	
4	facing surface	
4'	facing surface	
5	calibration layer	
6	conveyor	
7	cartridge	
8	applicator means	
9	material for forming the calibration layer	
10	application opening	
11	means for adjustment	
12	guide rail	
13	squeegee	
14	flange	
15	stand	
16	frame	
s	length difference between adjacent blocks	
R	center plane of symmetry of a block	
Δt_i	thickness of the calibration layer	
L_v	the final desired calibrated distance of the surface of the calibration layer on the respective facing surface from the central plane of symmetry of the block lying in the center between the facing surfaces, wherein the value L_v has a tolerance of ± 1 mm	
L_{ji}	the nominal distance between the central plane of symmetry of the block lying in the center between the facing surfaces and the surface of the facing surface of the block prior to the application of the calibration layer	

Claims

1. A precision walling block (1) having two opposite loading surfaces (2, 2'), two opposite contact surfaces (3, 3') and two opposite facing surfaces (4, 4') of which at least one facing surface (4, 4') is provided with a finishing coat applied to the surface of the block (1), **characterized in that** the finishing coat is formed as a calibration layer (5) whose thickness (Δt_i) at any point of the surface calibration layer (5) corresponds to the value

$$\Delta t_i = (L_v - L_{ji}),$$

where

L_{ji} represents the nominal distance between the central plane (R) of the symmetry of the block (1) lying in the center between the facing surfaces (4, 4') and the surface of the facing surface (4, 4') of the block (1) before the application of the calibration layer (5)

L_v represents the final desired calibrated distance of the surface of the calibration layer (5) on the respective facing surface (4, 4') from the central plane (R) of symmetry of the block (1) lying in the center between the facing faces (4, 4'),

wherein the value L_v lies within a tolerance of ± 1 mm.

2. A precision walling block according to claim 1, **characterized in that** the thickness (Δt_i) of the calibration layer (5) ranges from 0.1 mm to 25 mm.
3. A precision walling block according to claim 1 or 2, **characterized in that** the calibration layer (5) is made of a material (9) on a silicate base.
4. A precision walling block according to claim, **characterized in that** the calibration layer (5) is made of lime-cement plaster or gypsum plaster or lime-gypsum plaster.
5. A precision walling block according to any of claims 1 to 4, **characterized in that** the calibration layer (5) is formed from lime-cement plaster with a grain size up to 2 mm.
6. A precision walling block according to any of claims 1 to 5, **characterized in that** the calibration layer (5) is on both facing surfaces (4, 4').
7. A precision walling block according to any of claims 1 to 6, **characterized in that** that the calibration layer (5) is chamfered around the circumference of the facing surface (4, 4).
8. A precision walling block according to any of claims 1 to 7, **characterized in that** it is ceramic and its two opposite loading surfaces (2, 2') are precisely machined to a flatness lying within a tolerance of ± 1.0 mm.
9. Wall made of the precision walling blocks (1) formed according to any of claims 1 to 8, in which all the blocks (1) have, towards at least one side of the wall, the final desired calibrated distance (L_v) of the surface of the calibration layer (5) on the respective facing surface (4, 4') from the central plane (R) of symmetry of the block (1) lying between the facing surfaces (4, 4'), wherein the calibrated distance (L_v) is the sum of the nominal distance (L_{ji}) and the thickness (Δt_i) of the calibration layer (5) of each block

(1) at each point of the surface within a tolerance of ± 1 mm, and the dimensional deviations of the surfaces of the calibration layers (5) of the adjacent blocks (1) are no more than 4 mm towards each other.

10. A method of dimensional calibration of precision walling blocks (1) having two opposing loading surfaces (2, 2'), two opposite contact surfaces (3, 3'), and two opposite facing surfaces (4, 4'), **characterized in that** on at least one facing surface (4, 4') there is applied a calibration layer (5) whose thickness (Δt_i) at any point of the surface of the calibration layer (5) corresponds to the value

$$\Delta t_i = (L_v - L_{ji}),$$

where

L_{ji} represents the nominal distance between the central plane (R) of the symmetry of the block (1) lying in the center between the facing surfaces (4, 4') and the surface of the facing surface (4, 4') of the block (1) before the application of the calibration layer (5),

L_v represents the final desired calibrated distance of the surface of the calibration layer (5) on the respective facing surface (4, 4') from the central plane (R) of symmetry of the block (1) lying in the center between the facing faces (4, 4'),

wherein the value L_v lies within a tolerance of ± 1 mm.

11. A method according to 10, **characterized in that** as the calibration layer (5) on the facing surface (4, 4), the blocks are applied with at least one material (9) on a silicate base in a plastic or semi-solid or pasty or slurry or foamy state, which hardens after application.
12. A method according to 11, **characterized in that** the material (9) of the calibration layer (5) is from the group of lime-cement plaster, gypsum plaster, or lime-gypsum plaster.
13. A method according to any of claims 10 to 12, **characterized in that** as a calibration layer (5), a lime plaster with a grain size up to 2 mm is applied.
14. A method according to any of claims 10 to 13, **characterized in that** the calibration layer (5) is applied to both the facing surfaces (4, 4').
15. A method according to any of claims 10 to 12, **characterized in that** on the calibration layer (5), the edge-

es of the circumference of the facing surface (4, 4') chamfers after the application.

16. A method according to any of claims 10 to 15, **characterized in that** the calibration layer (5) is applied onto the block (1) positioned in a vertical position of its facing surfaces (4, 4').
17. A method according to claim 16, **characterized in that** the calibration layer (5) is successively applied to the blocks (1) arranged in abutment in a row with the contact surfaces (3, 3') facing each other and the facing surfaces (4, 4') positioned parallel to the movement of the conveyor (6).
18. A method according to claim 17, **characterized in that** the material (9) of the calibration layer (5) is applied onto the blocks (1) arranged on the conveyor (6) from the cartridge (7) which is located on at least one side of the conveyor (6) with an applicator means (8) formed with the possibility of changing the thickness (Δt_i) of the applied calibration layer (5).
19. A method according to any of claims 10 to 18, **characterized in that** the calibration layer (5) is applied onto a precision ceramic walling block (1) with opposite loading surfaces (2, 2') which are machined so that their flatness lies within a tolerance of ± 1.0 mm, wherein the calibration layer (5) is applied on the facing surfaces (4, 4) after the block (1) has been dried and fired, and after the loading surfaces (2, 2) have been processed.
20. A wall made from of precision walling blocks (1) that are produced by a method in accordance to any of claims 10 to 19, in which all the blocks (1) have, towards at least one side of the wall, the same final desired calibrated distance (L_v) of the surface of the calibration layer (5) on the respective facing surface (4, 4') from the central plane (R) of symmetry of the block (1) lying in the center between the facing surfaces (4, 4'), wherein this calibrated distance (L_v) is the sum of the nominal distance (L_{ji}) and the thickness (Δt_i) of the calibration layer (5) of each block (1) at each point of the surface within a tolerance of ± 1 mm, and the dimensional deviations of the surfaces of the calibration layers (5) of the adjacent blocks (1) are no more than 4 mm from each other.
21. An apparatus for calibrating precision walling blocks (1) having two opposite loading surfaces (2, 2'), two opposite contact surfaces (3, 3') and two opposite facing surfaces (4, 4'), **characterized in that** it comprises at least one conveyor (6) for moving a row of blocks (1) arranged with their contact surfaces (3, 3') in abutment to each other, and with the facing faces (4, 4') oriented parallel to the feed conveyor (6), at least one cartridge (7) for the material (9), and

at least one applicator means (8) for applying the material (9) in a plastic or semi-solid or pasty or foamy state and in a uniform calibration layer (5) on at least one facing surface (4, 4') of the block (1), wherein the applicator means (8) is connected to the cartridge (7) of the material (9). 5

22. An apparatus according to claim 21, **characterized in that** the applicator means (8) is integrated with the cartridge (7) and is formed by a wedge-shaped bottom part of the cartridge (7) and provided with an application opening (10) for applying the material (9) on the facing surface (4, 4') of the block (1) during their movement on the conveyor (6) and for forming a calibration layer (5). 10 15
23. An apparatus according to claim 22, **characterized in that** it is provided with a means of adjustment (11) for adjusting the distance of the application opening (10) from the central plane R of the block (1) for regulating the thickness (Δt_i) of the calibration layer (5). 20
24. An apparatus according to any of claims 21 to 23, **characterized in that** the conveyor (6) is provided with at least one guide rail (12) for directionally guiding the blocks (1). 25
25. An apparatus according to any of claims 21 to 24, **characterized in that** it is provided with a pressing guide means that abuts the upper loading surface (2) of the blocks (1). 30
26. An apparatus according to any of claims 22 to 25, **characterized in that** the height of the application opening (10) is the same as the height of the block (1). 35
27. An apparatus according to any of claims 22 to 26, **characterized in that** the application opening (10) has a rectangular shape whose upper and lower edge is fitted with a flange (14). 40
28. An apparatus according to any of claims 22 to 27, **characterized in that** the applicator means (8) is provided with a squeegee (13) for leveling and smoothing the applied calibration layer (5). 45

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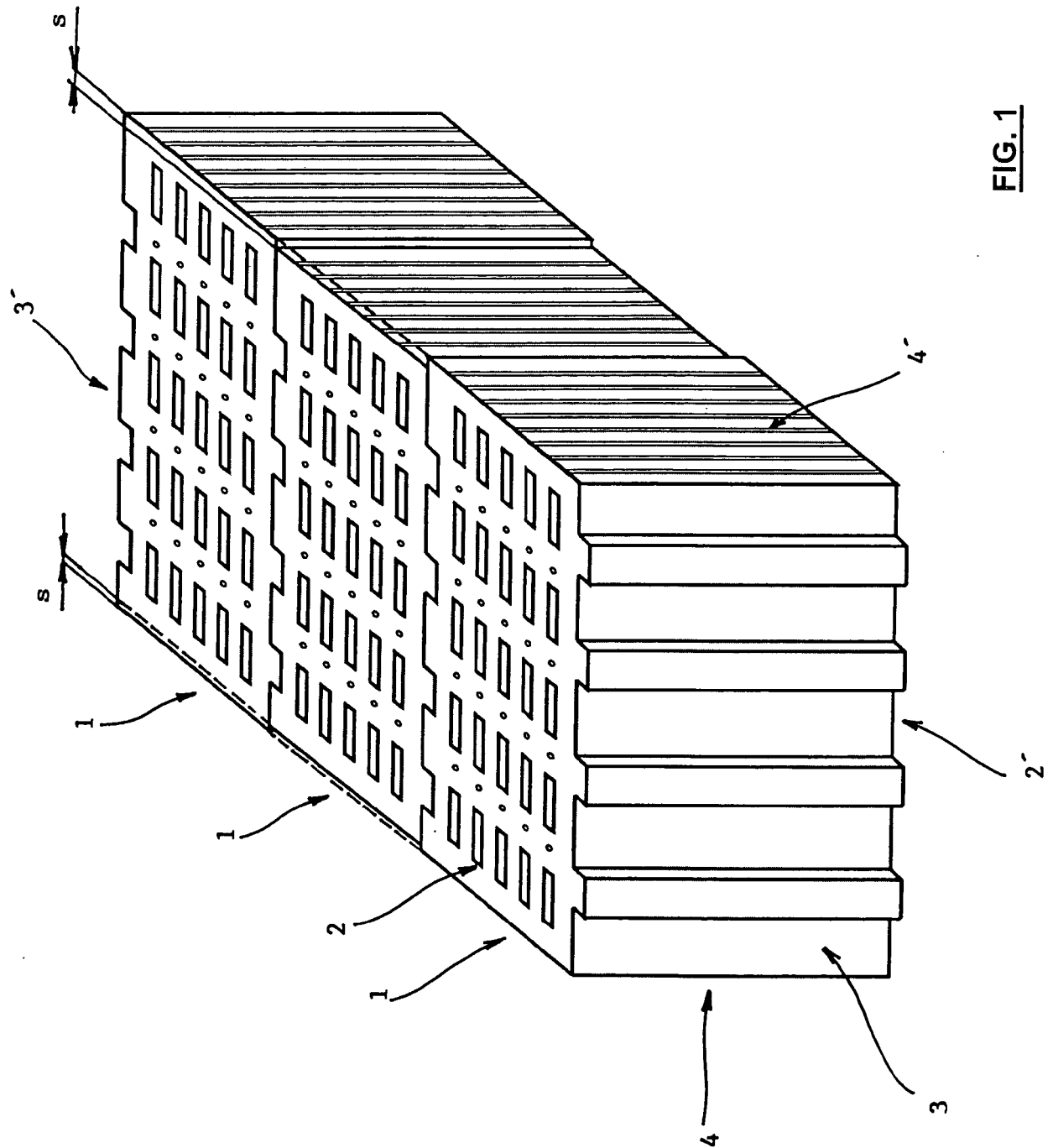


FIG. 1

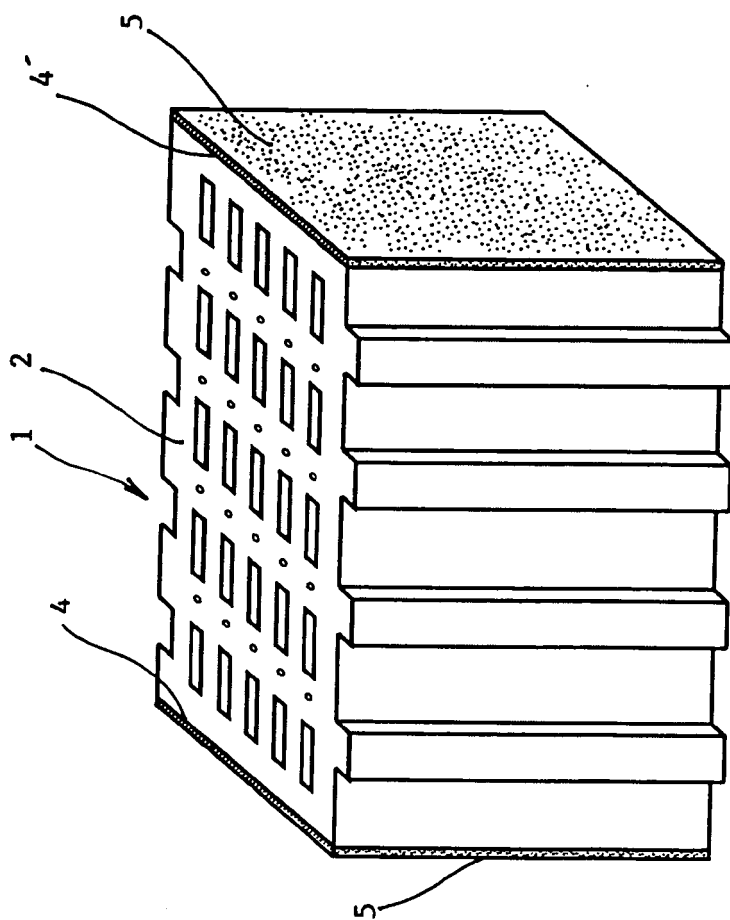


FIG. 2

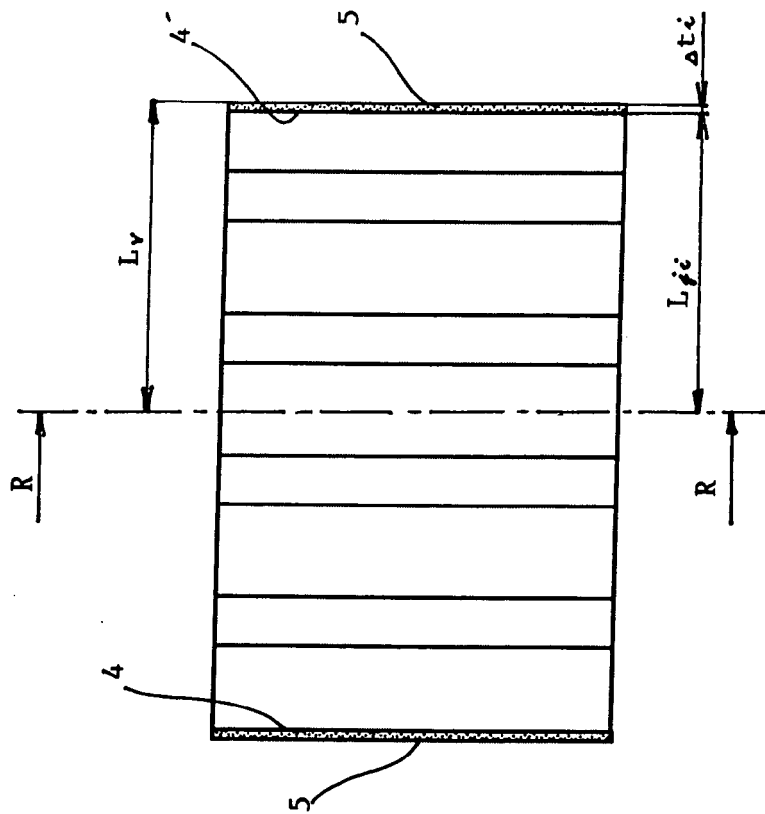


FIG. 3

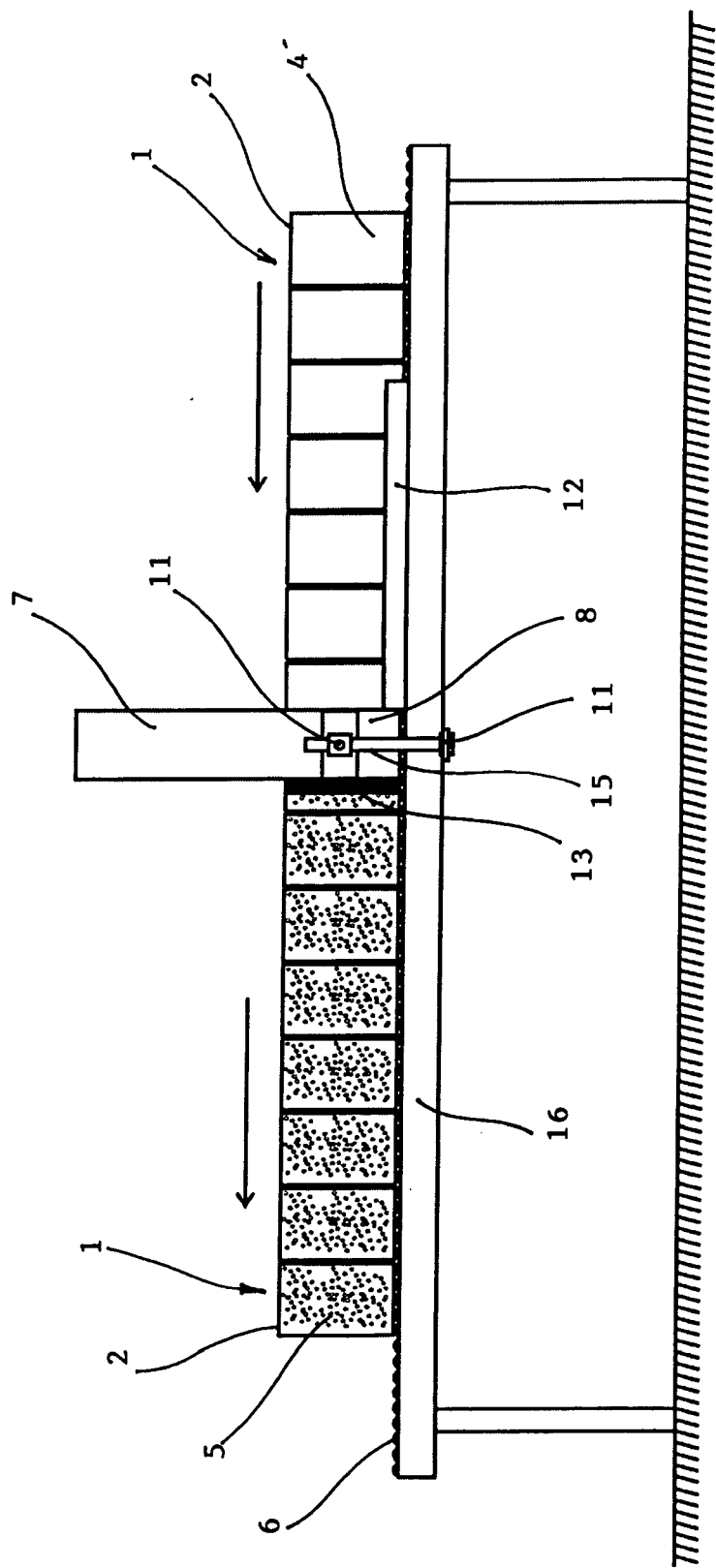


FIG. 4

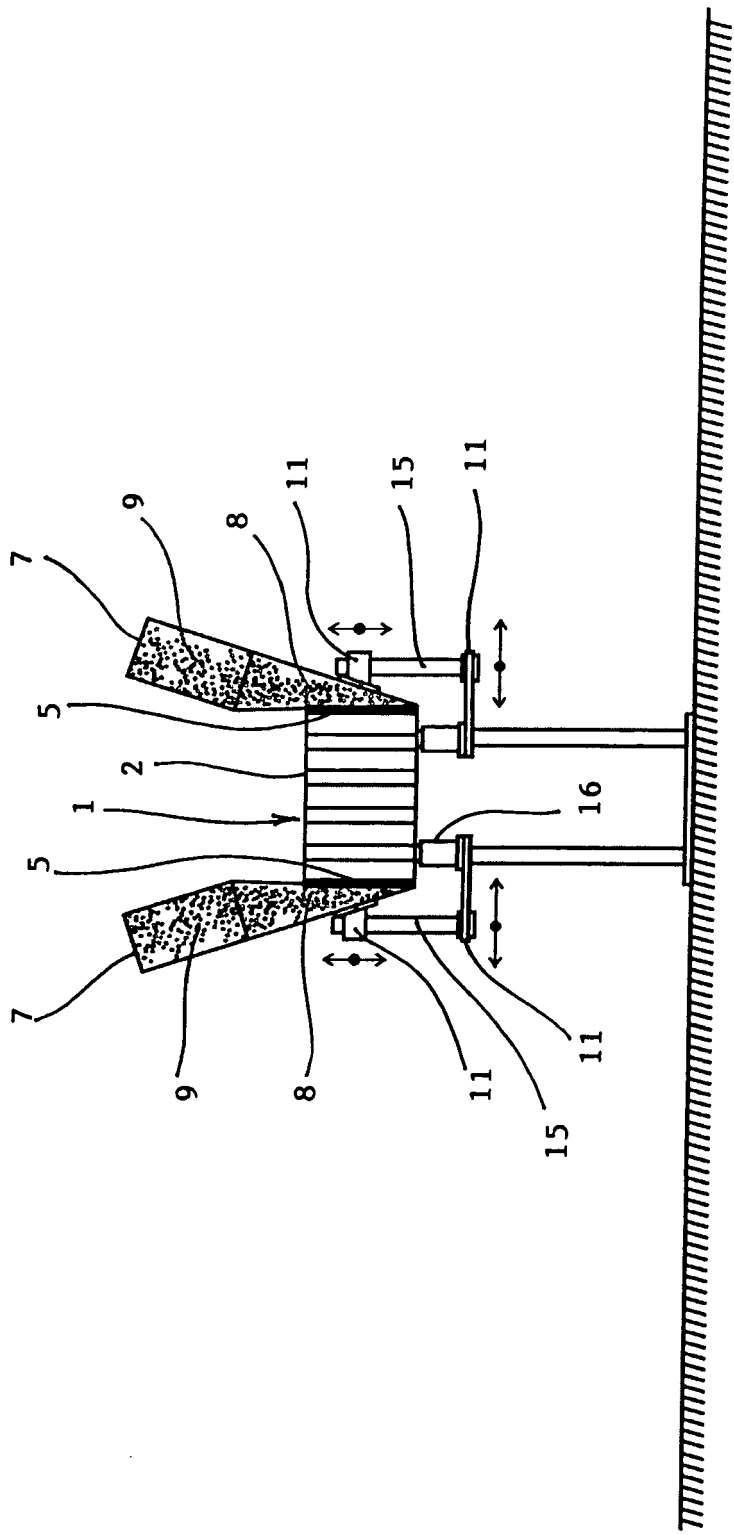


FIG. 5

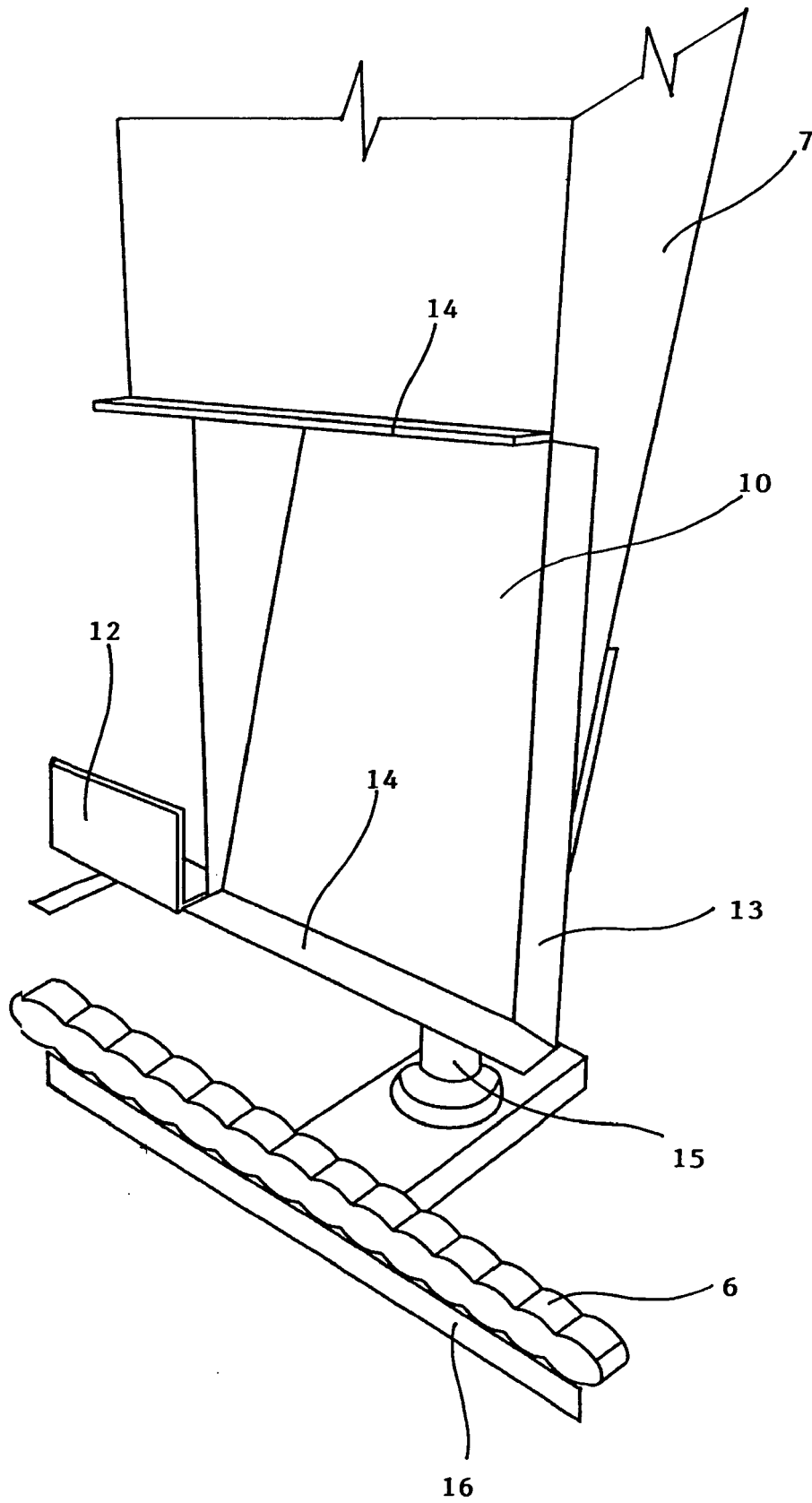


FIG. 6

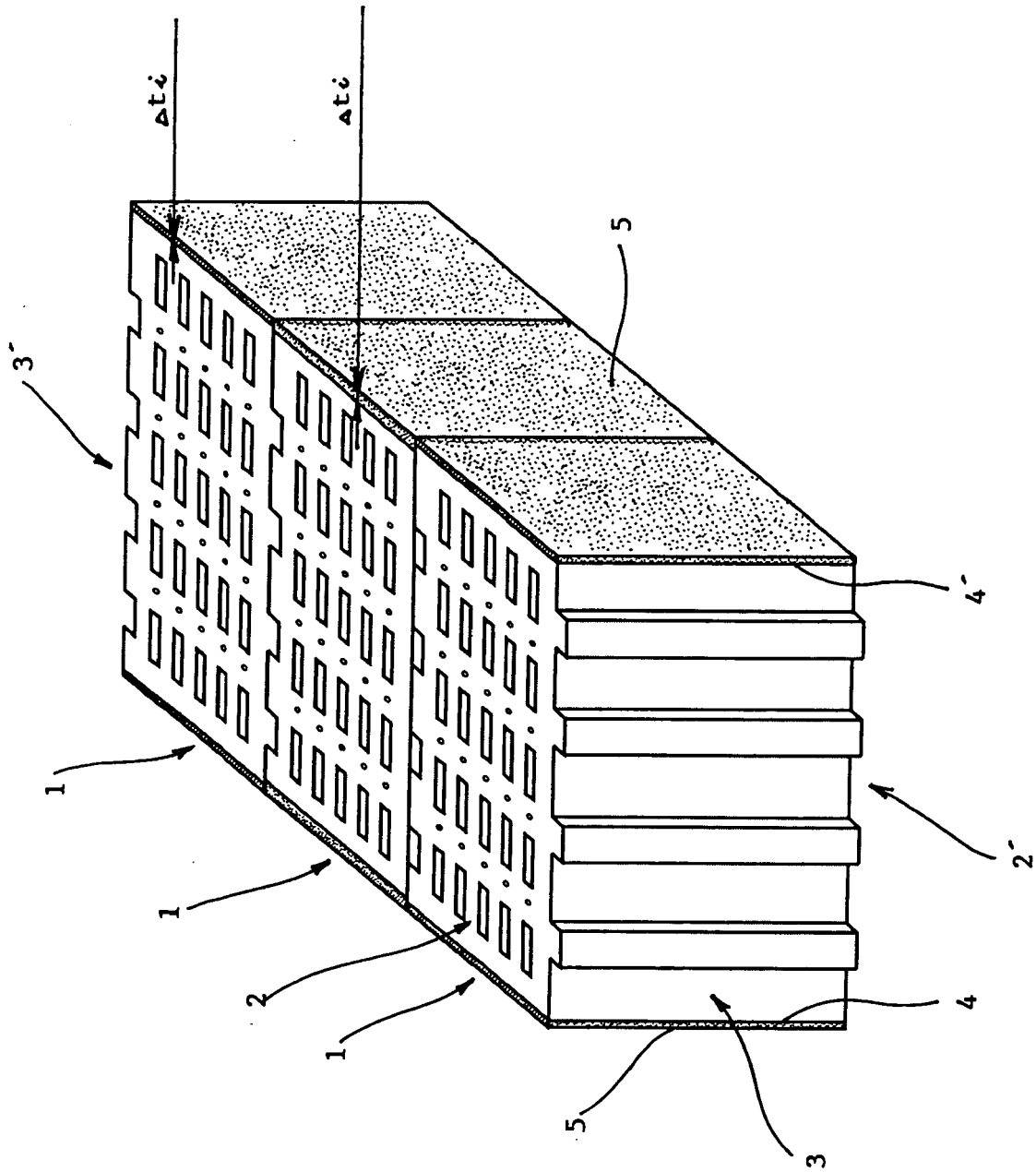


FIG. 7

REFERENCES CITED IN THE DESCRIPTION

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