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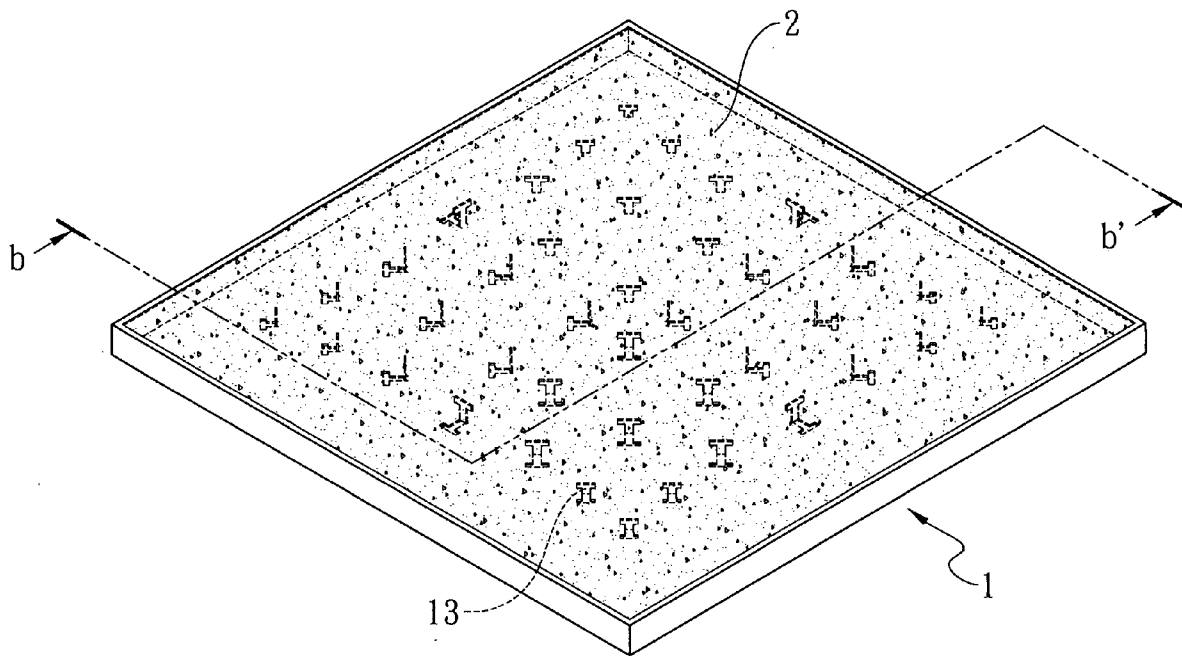
(19) **United States**(12) **Patent Application Publication**
Chen et al.(10) **Pub. No.: US 2010/0224757 A1**(43) **Pub. Date: Sep. 9, 2010**(54) **RAISED ACCESS FLOOR UNIT****Publication Classification**(76) Inventors: **Yao-Chung Chen**, Taipei Hsien
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Hsien (TW)(51) **Int. Cl.**
E04G 11/36 (2006.01)(52) **U.S. Cl.** **249/192**(57) **ABSTRACT**

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A raised access floor unit comprises a frame member and a block member, wherein the frame member has a receiving space for raw materials of the block member to be poured and harden inside the receiving space, characterized in that the bottom of the frame member is disposed with a plurality of T-shaped plate members, wherein the plurality of T-shaped plate members are formed directly from the bottom of the frame member so as to dispose the plurality of T-shaped plate members into the block member while the raw materials of the block member are poured to the frame member, thereby allowing the block member to be incorporated into the frame member securely.



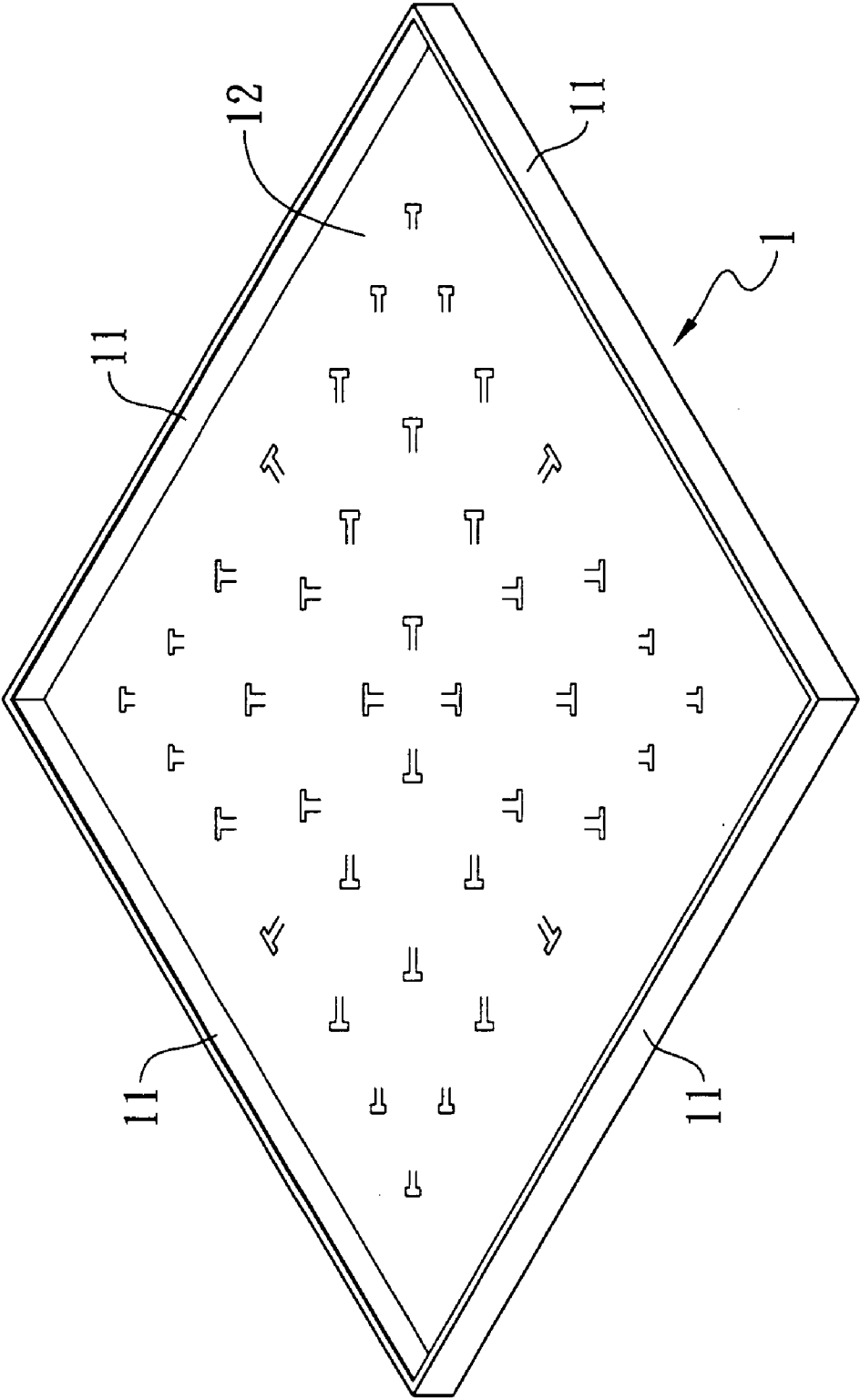


Fig. 1

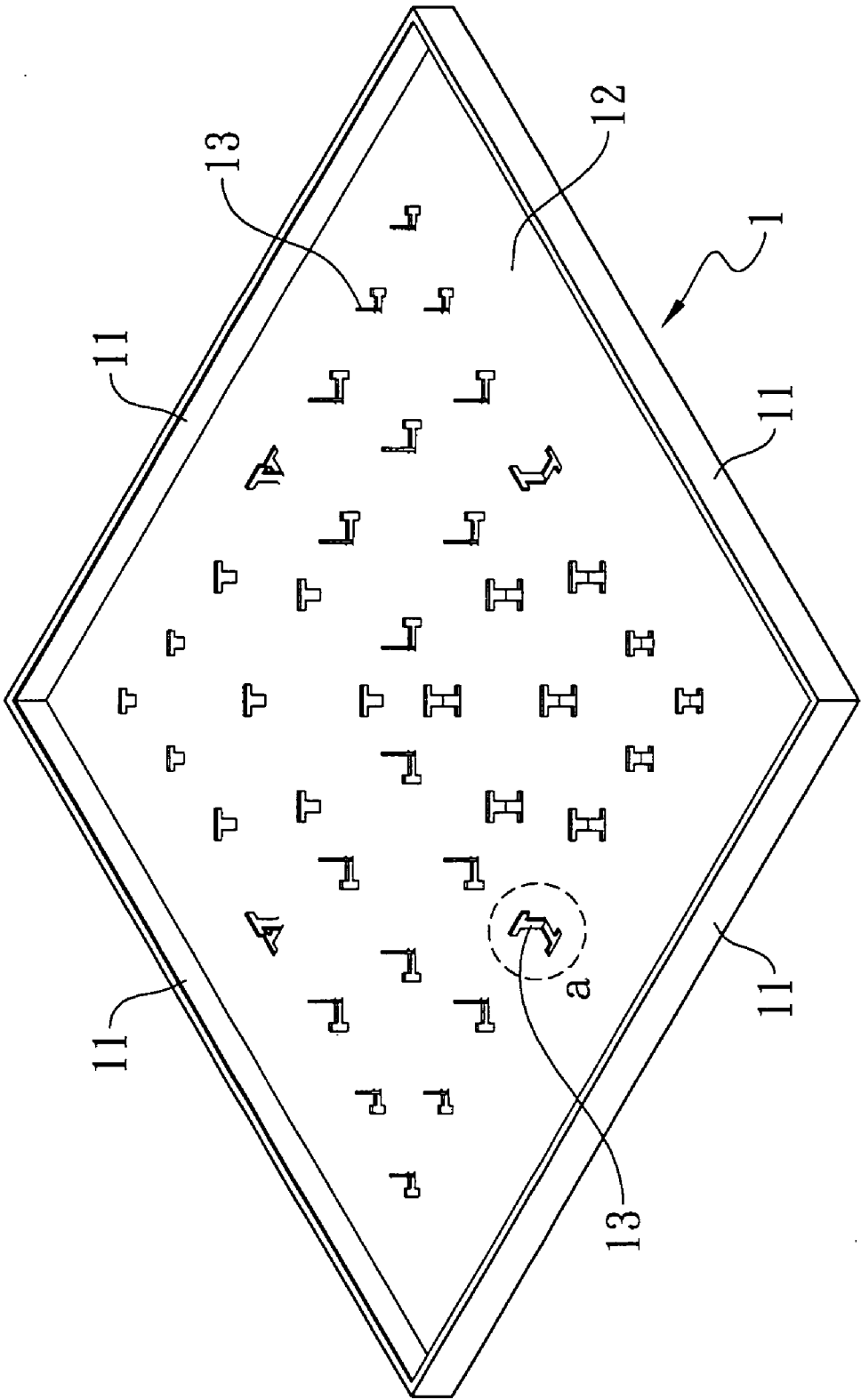


Fig. 2

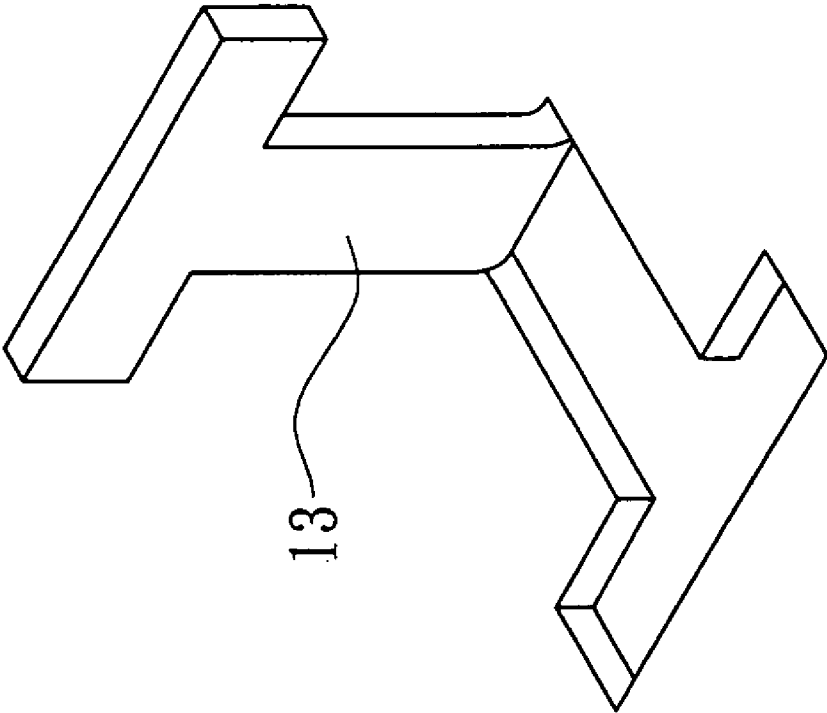


Fig. 2A

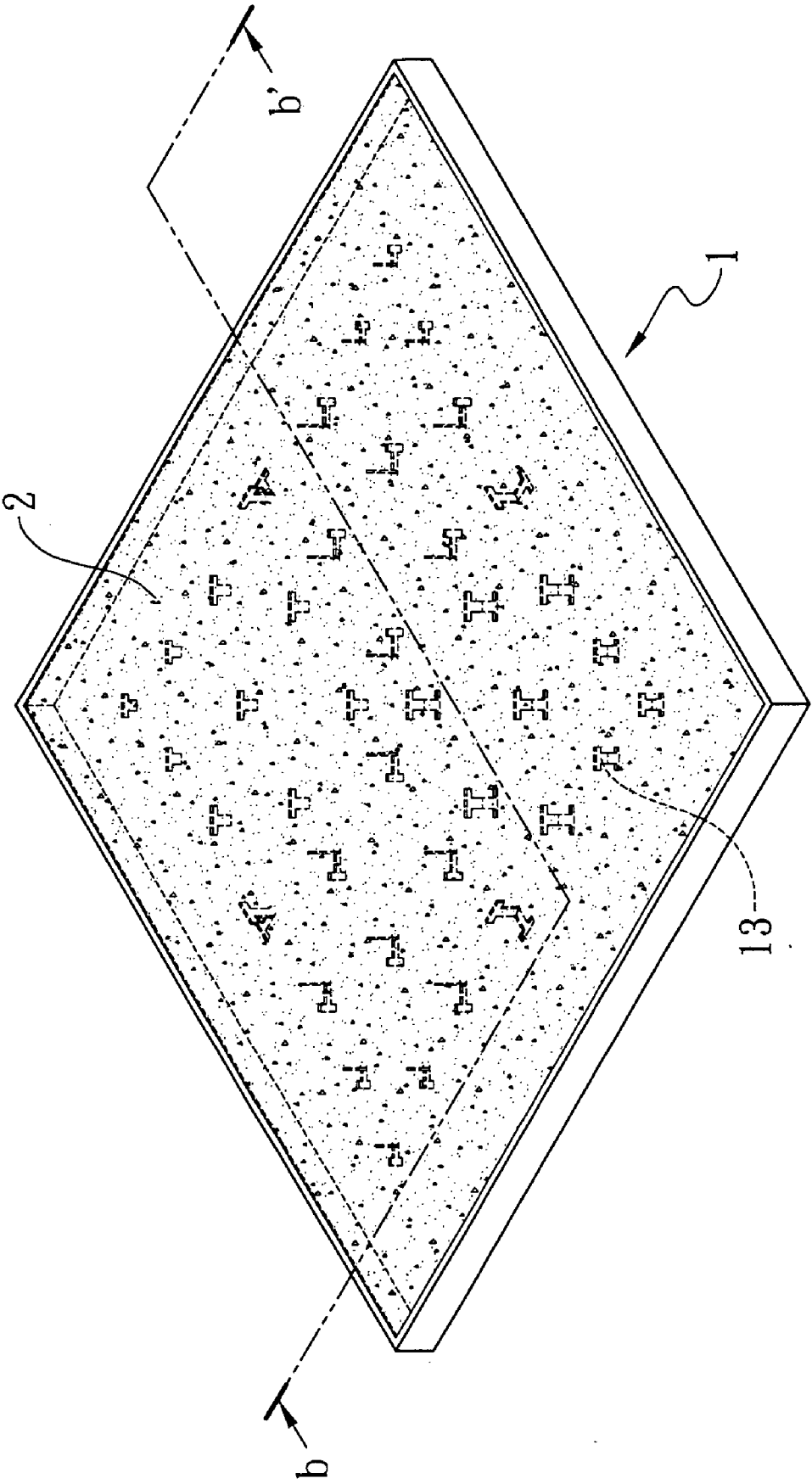


Fig. 3

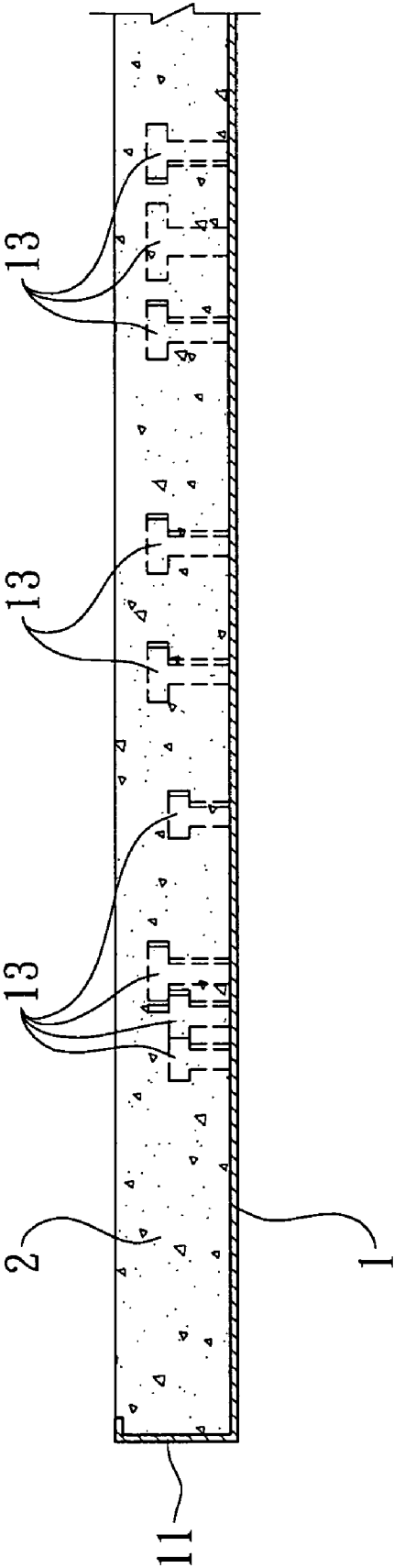


Fig. 3A

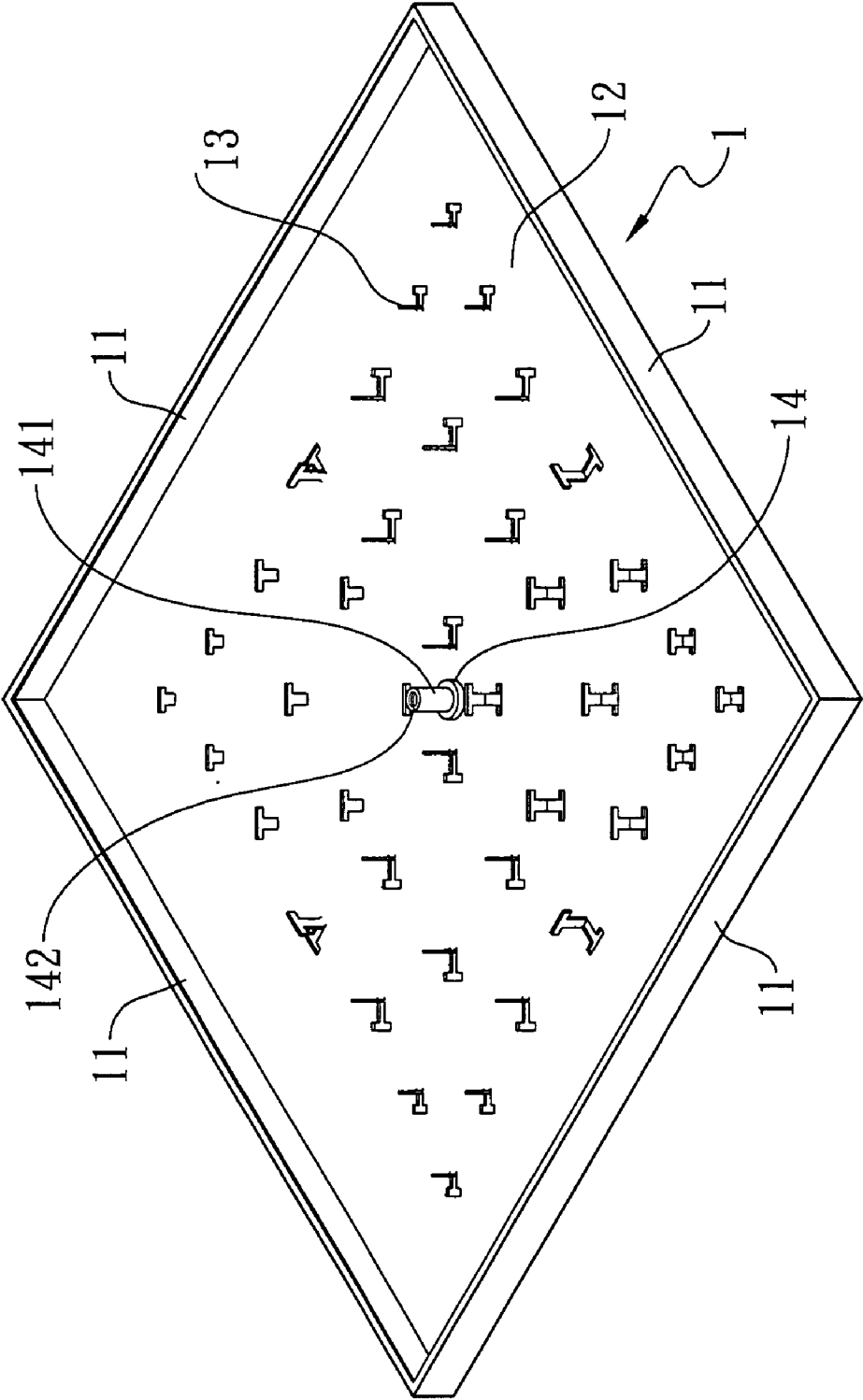


Fig. 4

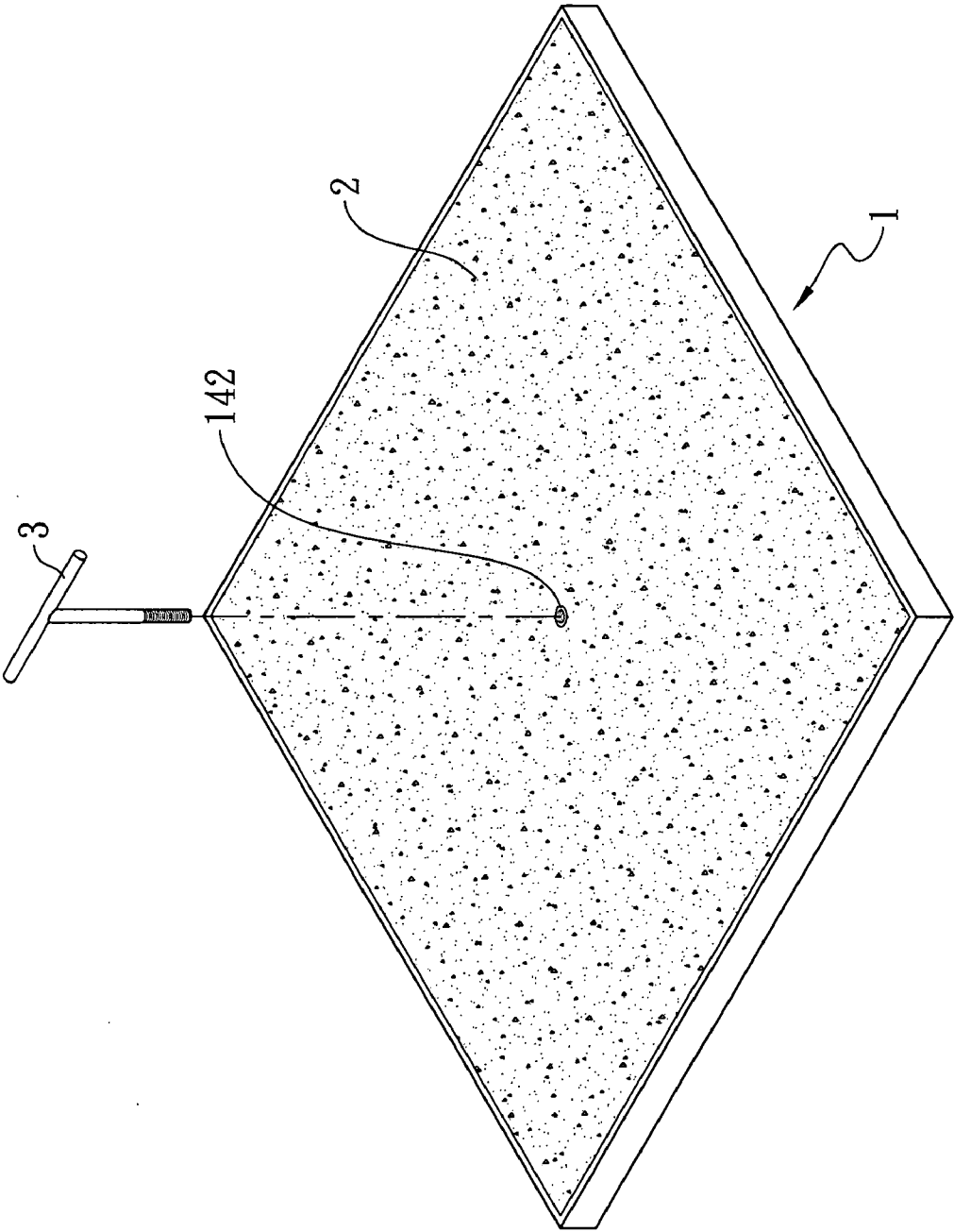


Fig. 5

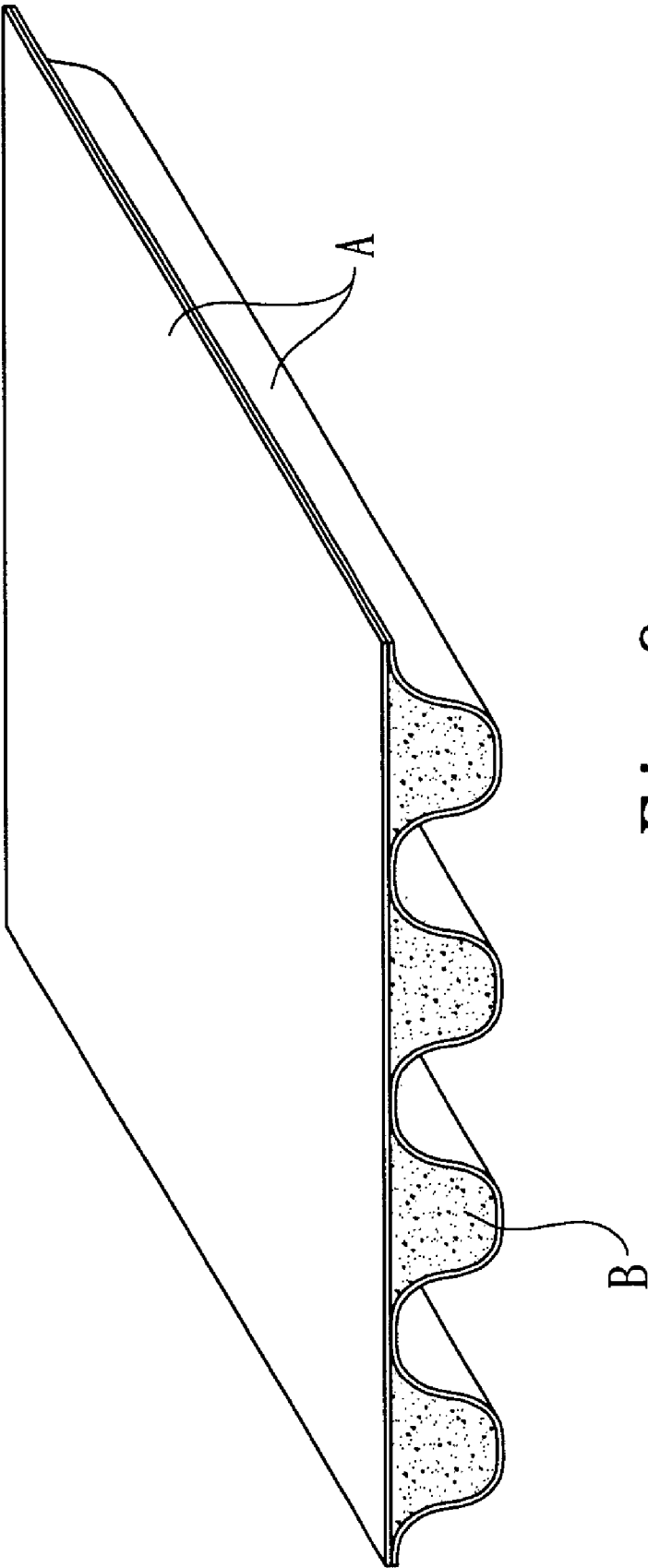


Fig. 6
(Prior Art)

RAISED ACCESS FLOOR UNIT

FIELD OF THE INVENTION

[0001] The present invention relates to a raised access floor unit, particularly, to a raised access floor unit with simple structure and stability suitable for stone or tiles to be laid thereon.

DESCRIPTION OF THE PRIOR ART

[0002] For those working places widely using computers, distribution and laying-out of networks and other kind of lines are very important and necessary. Because each computer can only be connected or electrically connected with other computers through a network, intertwining of lines becomes more and more complicated when amount of equipment gets larger and larger. If in an office lines are exposed outside, they not only look ugly, but also affect walking of workers. A floor for networks because of being able to be elevated for assembling, it leaves at its bottom a space for threading and distribution of lines. Thereby for informationalization of a modern office, it has been a main trend to flexibly decide the amount of floors laid out in pursuance of the size of the space in an office.

[0003] Presently it is common in the art to use floor coverings such as carpets, stone or tiles on the raised access floor to make it pleasing to the eye. The structure of the conventional raised access floor, as shown in FIG. 6, are mainly cement B clad with alloy steel A having stoving varnish on the surface, so as to make the raised access floor delicate and lay carpets on the raised access floor in the future. When stone or tiles are laid on the raised access floor, an adhesive is necessary to be applied on the alloy steel to stick the stone or tiles on the alloy steel. Although the abovementioned massive structure of the conventional raised access floor made of cement and alloy steel can ensure the structure not to be deformed or weaken after the laying of stone or tiles, however, in practice, it is not easy to stick stone to alloy steel, and the stoving varnish on the surface of the alloy steel can be prone to peeling off during the laying process, causing that surface of the alloy steel to be damaged. Therefore, when replacing the stone or tiles in the future, the damaged raised access floors have to be replaced together with the stone or tiles, which is uneconomical and inconvenient to users.

[0004] In addition, while the stone is laid on the raised access floor, the raised access floor cannot be easily removed as the way using a cupule for a wooden floor due to the stone, thereby rendering construction inconvenient during the laying process.

[0005] In order to overcome the foregoing shortcomings and problems, after hard research and development, a raised access floor unit that substantially departs from the conventional concepts and designs of the prior art is provided by the present invention.

SUMMARY OF THE INVENTION

[0006] The primary object of the present invention is to provide a raised access floor unit with simple structure, stability, and facilitation for combining stone or tiles.

[0007] Another object of the present invention is to provide a raised access floor unit having stone thereon, wherein the raised access floor unit is convenient to be removed by operators during the laying process.

[0008] In order to achieve the aforementioned object, the raised access floor unit according to the present invention

comprises a frame member and a block member, the frame member has a receiving space for raw materials of the block member to be poured and harden inside the receiving space, characterized in that the bottom of the frame member is disposed with a plurality of T-shaped plate members, wherein the plurality of T-shaped plate members are formed directly from the bottom of the frame member so as to dispose the plurality of T-shaped plate members into the block member while the raw materials of the block member are poured to the frame member, thereby allowing the block member to be incorporated into the frame member securely.

[0009] In practice, the frame member is made of metal.

[0010] In practice, the frame member is disposed with folded flanks around the rim to form the receiving space, and the height of the plurality of T-shaped plate members are lower than the height of the folded flanks.

[0011] Other objects, advantages and novel features of the present invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 is a perspective view showing the unformed T-shaped plate members on the bottom of the frame member of an embodiment according to the present invention.

[0013] FIG. 2 is a perspective view showing the formed T-shaped plate members on the bottom of the frame member of an embodiment according to the present invention.

[0014] FIG. 2A is an enlarged and partially perspective view of the T-shaped plate member of an embodiment according to the present invention.

[0015] FIG. 3 is a perspective view showing the state after raw materials of the block member poured into the frame member of an embodiment according to the present invention.

[0016] FIG. 3A is a sectional view taken from FIG. 3 showing the state after raw materials of the block member poured into the frame member of an embodiment according to the present invention.

[0017] FIG. 4 is a perspective view showing the connector of another embodiment according to the present invention.

[0018] FIG. 5 is a perspective view showing screw hole and the state after raw materials of the block member poured into the frame member of another embodiment according to the present invention.

[0019] FIG. 6 is a sectional view of a conventional raised access floor.

DETAILED DESCRIPTION

[0020] Referring to FIGS. 1 and 2, a raised access floor unit of an embodiment of the present invention is illustrated, wherein the raised access floor unit comprises a frame member 1 and a block member 2.

[0021] The frame member 1 is made of metal and the block member 2 is cement concrete. The peripheral rims of the frame member 1 is folded up to form folded flanks 11, thereby forming a receiving space 12 for raw materials of the block member 2 to be poured and harden inside the receiving space. The bottom of the frame member 1 is disposed with a plurality of T-shaped plate members 13, wherein the plurality of T-shaped plate members 13 are formed directly and integrally from the bottom of the frame member 1 (as shown in FIG. 2A) and the height of the plurality of T-shaped plate members 13

are lower than the height of the folded flanks 11, so as to dispose the plurality of T-shaped plate members 13 into the block member 2 while the raw materials of the block member 2 are poured to the frame member 1 (as shown in FIGS. 3 and 3A), thereby allowing the block member to be incorporated into the frame member securely.

[0022] Therefore, during production of the raised access floor unit, the plurality of T-shaped plate members 13 are formed directly from the bottom of the frame member 1, and the plurality of T-shaped plate members 13 can be formed with different size or height according to the usage demand except that the height of the plurality of T-shaped plate members 13 have to be lower than the height of the folded flanks 11, whereby the raw materials of the block member 2 (the cement concrete) can encompass the plurality of T-shaped plate members 13 on the bottom of the frame member 1 when poured into the receiving space 12 of the frame member 1 to make the frame member 1 tightly combined with the block member 2 by the plurality of T-shaped plate members 13. After the block member 2 cure and harden inside the frame member 1, a raised access floor unit is formed and can be assembled into large-area raised access floors, such that when user are about to lay stone or tiles thereon, the stone or tiles can be easily connected to and laid on the block member due to the material of cement concrete of the block member.

[0023] In addition, as shown in FIGS. 4 and 5, the present invention further comprise a connector 14 disposed on the frame member 1. It is preferably to stick the connector onto the middle part of the frame member 1, and the height of the connector 14 is equal to the folded flanks 11 of the frame member 1, wherein the connector 14 is disposed with a connecting part 141, and a screw hole 142 is disposed on the top of the connecting part 141, such that the block member 2 (the cement concrete) can encompass the plurality of T-shaped plate members 13 on the bottom of the frame member 1 and the connector 14 when poured into the receiving space 12 of the frame member 1, and expose the screw hole 142 of the connecting part 141. Therefore, while assembling the raised access floors, the screw hole 142 of the connecting part 141 can engage a hand tool 3 by a user that enables the frame member 1 to be lifted for removing or adjusting the position of the frame member 1.

[0024] Therefore, the present invention has the following advantages:

[0025] 1. The present invention utilizes the design of the T-shaped plate members on the bottom of the raised access floor to hold the block member by the T-shaped plate members, and combine the frame member and block member tightly and securely.

[0026] 2. The design of the T-shaped plate members can solve the problem of combining cement concrete and metal frame member securely, and also enhance the applicability of stone or tiles to be laid on the cement concrete, so as to facilitate the construction of adhesion or removal for the stone or tiles and prevent damage to the raised access floor unit.

[0027] 3. The present invention utilizes the screw hole of the connecting part connected to the frame member and exposed after the pouring of cement concrete to lift the frame member by a hand tool engaging the screw hole, such that the position of the frame member can be easily be removed or adjusted while assembling the raised access floors.

[0028] As stated in the above disclosed, the present invention can surely achieve its expected objects to provide a raised access floor unit suitable for stone or tiles to lay thereon.

[0029] It should be understood that different modifications and variations could be made from the disclosures of the present invention by the people familiar in the art without departing the spirit of the present invention.

What is claimed is:

1. A raised access floor unit, substantially comprising a frame member and a block member, the frame member having a receiving space for raw materials of the block member to be poured and harden inside the receiving space, characterized in that the bottom of the frame member is disposed with a plurality of T-shaped plate members, wherein the plurality of T-shaped plate members are formed directly from the bottom of the frame member so as to dispose the plurality of T-shaped plate members into the block member while the raw materials of the block member is poured to the frame member, thereby allowing the block member to be incorporated into the frame member securely.

2. The raised access floor unit according to claim 1, wherein the block member is cement concrete.

3. The raised access floor unit according to claim 1, wherein the frame member is disposed with folded flanks around the rim to form the receiving space, and the height of the plurality of T-shaped plate members are lower than the height of the folded flanks.

4. The raised access floor unit according to claim 1, wherein the frame member is made of metal.

5. The raised access floor unit according to claim 1, wherein the frame member is connected with a connector, wherein the connector is disposed with a connecting part for engaging a hand tool to lift the frame member.

6. The raised access floor unit according to claim 5, wherein the top of the connecting part is a screw hole for a hand tool to engage.

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