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(54) **Wall building system and method**

(57) A wall building system and method uses a block for building walls and other structures. The block is formed with an external face member and an internal face member connected by an inner core, which has an outer surface formed with a concave profile. The block is fabricated in one piece to enhance strength and stability. Each face is provided with a continuous groove therearound. The continuous grooves are adapted to receive locking elements therein to interlock the blocks. Utilizing a locking element eliminates the need for binding compounds, such as mortar, thereby greatly reducing labor and material costs.

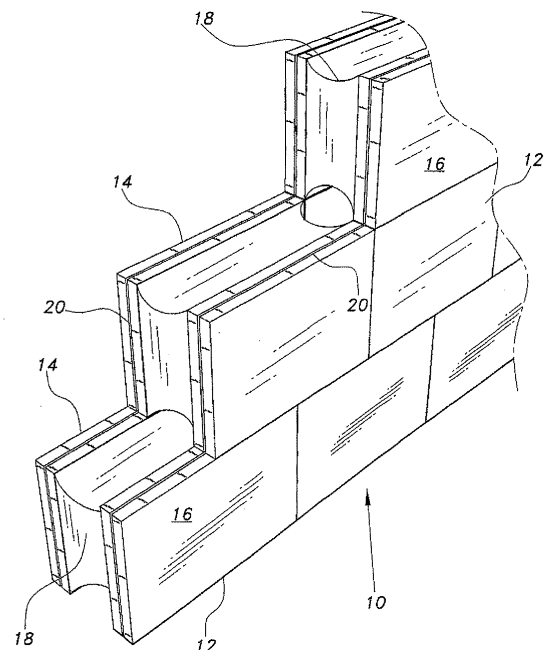


Fig. 1

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Description

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

[0001] The present invention generally relates to building construction, and particularly to a wall building system and method that includes a block for building walls and other structures without the use of mortar or other binding adhesives.

2. DESCRIPTION OF THE RELATED ART

[0002] Most building blocks used for wall construction and the like are made of brick, concrete, terra cotta, etc. and employ an adhesive, such as mortar, to bind the blocks together to form the wall structure. The applied architectural techniques utilized in this form of construction are labor-intensive, require extensive planning, and are relatively expensive. Recently, prefabricated building blocks made of composite materials have been utilized in an effort to minimize both labor and material costs. The construction industry would certainly welcome an improved composite building block having a specifically designed profile that would enhance building techniques, lower expenses and permit easily assembled wall prototypes. This also allows, for the first time, the opportunity to prototype a full house in a showroom, for example. Thus, a wall building system and method solving the aforementioned problems is desired.

SUMMARY OF THE INVENTION

[0003] The wall building system is based upon a block for building walls and other structures. Although composite material is preferred, the block may be fabricated from a single material, if suitable. The block is formed with an external face member and an internal face member connected by an inner core, which has an outer surface formed with a concave profile. The block is fabricated in one piece to enhance strength and stability. Each face is provided with a continuous groove therearound. The continuous grooves are adapted to receive locking elements therein to interlock the blocks. Utilizing a locking element eliminates the need for binding compounds, such as mortar, thereby greatly reducing labor and material costs. This arrangement allows a prototype wall up to three stories high to be built without the need for any additional supporting structure. When the blocks are assembled, the configuration of the inner core will define channels and passages between the respective blocks to receive electrical wiring, plumbing conduits, and other utility items therethrough. The block is fabricated from materials that have good insulating qualities, thereby allowing the block to be effectively employed in hot, cold, and humid environments. The internal profile of the blocks is compatible for wooden, steel, or concrete skel-

etal structure.

[0004] Accordingly, the invention presents prefabricated construction blocks that are easy to assemble and allow the use of a dry-build method, thereby eliminating the need for adhesive binders. The blocks are sturdy and comply with international building codes. The blocks can be designed and fabricated in various shapes and sizes such that different architectural styles can be effectively accommodated. Alternative surfaces, such as wood, steel, or leather, could be applied. The invention provides for improved elements thereof in an arrangement for the purposes described that are inexpensive, dependable and fully effective in accomplishing their intended purposes.

[0005] These and other features of the present invention will become readily apparent upon further review of the following specification and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006]

Fig. 1 is an environmental, perspective view of a portion of a wall constructed in accordance with a wall building system and method according to the present invention.

Fig. 2 is a perspective view of a partial wall constructed in accordance with a wall building system and method according to the present invention, shown partially in section to show details thereof.

Fig. 3 is a perspective view of a rectangular building block in a wall building system and method according to the present invention.

Fig. 4 is a perspective view of a partial wall constructed with triangular-shaped building blocks in accordance with a wall building system and method according to the present invention.

Fig. 5 is a perspective view of a partial wall constructed with curved and circular building blocks in accordance with a wall building system and method according to the present invention.

Fig. 6 is a perspective view of a building block having concave faces in a wall building system and method according to the present invention.

Fig. 7 is a perspective view of a building block having convex faces in a building system and method according to the present invention.

[0007] Similar reference characters denote corresponding features consistently throughout the attached drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0008] Referring to Figs. 1-3, the wall building system is generally indicated at **10**. Walls in the system **10** comprise a series of prefabricated block elements **12** that are

assembled layer by layer to form the wall. Each block element **12** comprises an inner face member **14** and an outer face member **16** that are connected via a profiled core member **18**. Each face member **14,16** is provided with a continuous groove **20** around the face. The core member **18** is designed in a concave profile so that channels or passages **22** are formed in the wall when the blocks **12** are assembled. The core **18** is fabricated from materials having good insulation qualities. As indicated above, the passages **22** permit the insertion of electrical wiring, plumbing conduits and the like during the assembly process. The exposed surfaces of each face member **14,16** can be plastered and painted before assembly. Connecting elements **24**, preferably fabricated from steel, are inserted in the grooves **20** and interwoven between respective blocks **12** to lock the blocks **12** together.

[0009] As mentioned above, the blocks **12** may be fabricated in various shapes and sizes. Examples of such variety are illustrated in Figs. 4 and 5. Fig 4 shows a wall **30** made from an assembly of triangular blocks **32**. Fig. 5 shows a wall **40** made from an assembly of respective curved and circular blocks **42,44**. Fig. 6 shows a block having concave faces, and Fig. 7 shows a block having convex faces, respectively. It is emphasized that the blocks are not limited to the configurations shown and discussed above. The blocks can be designed in almost any geometrical shape (hexagonal, octagonal, etc.) to accommodate different architectural styles and aesthetic tastes.

[0010] It is to be understood that the present invention is not limited to the embodiments described above, but encompasses any and all embodiments within the scope of the following claims.

Claims

1. A wall building system, comprising a plurality of building blocks assembled in a layered pattern; each of the blocks having
an inner face member spaced from an outer face member, the inner face member and outer face member having a perimeter, each of the face members having a groove formed along the perimeter of the face members; and
a core member spanning the space between and connecting the inner face member to the outer face member.
2. The wall building system according to claim 1, wherein each groove is continuous around each respective perimeter.
3. The wall building system according to claim 1, wherein the blocks are fabricated from a composite material.
4. The wall building system according to claim 1,

wherein said core member has a concave profile.

5. The wall building system according to claim 1, further including locking members disposed in each of the grooves for securing said blocks together.
6. The wall building system according to claim 5, wherein said locking members are fabricated from steel.
7. A wall building system, comprising a plurality of building blocks assembled in a layered pattern, each of the blocks being fabricated from a composite material and having:
an inner face member spaced from and parallel to an outer face member, each of the face members having a perimeter each of the face members having a respective groove defined therein along the perimeter, each of the grooves being continuous around the perimeter; and
a core member spanning the space between and connecting the inner face member to the outer face member, the core member having a concave profile.
8. The wall building system according to claim 7, further including locking members disposed in each of the grooves for securing the blocks together, the locking members being fabricated from steel.
9. A method of building a wall of composite building blocks, the blocks having faces defining grooves therein, the method comprising the steps of:

positioning a plurality of the building blocks in a layered array, the building blocks being dry-stacked to form the layered array; and
inserting steel locking elements in the grooves to secure the blocks to each other.

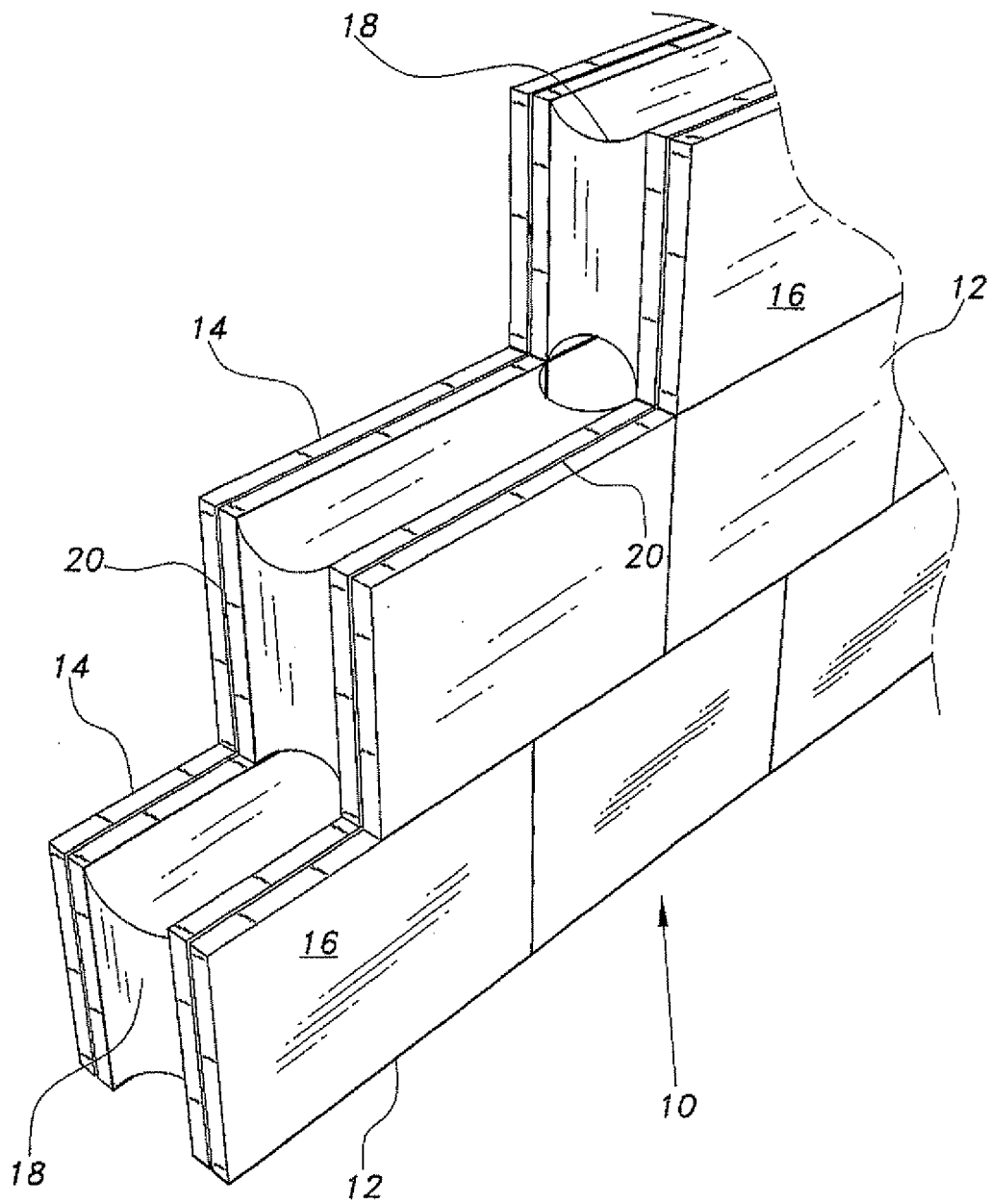


Fig. 1

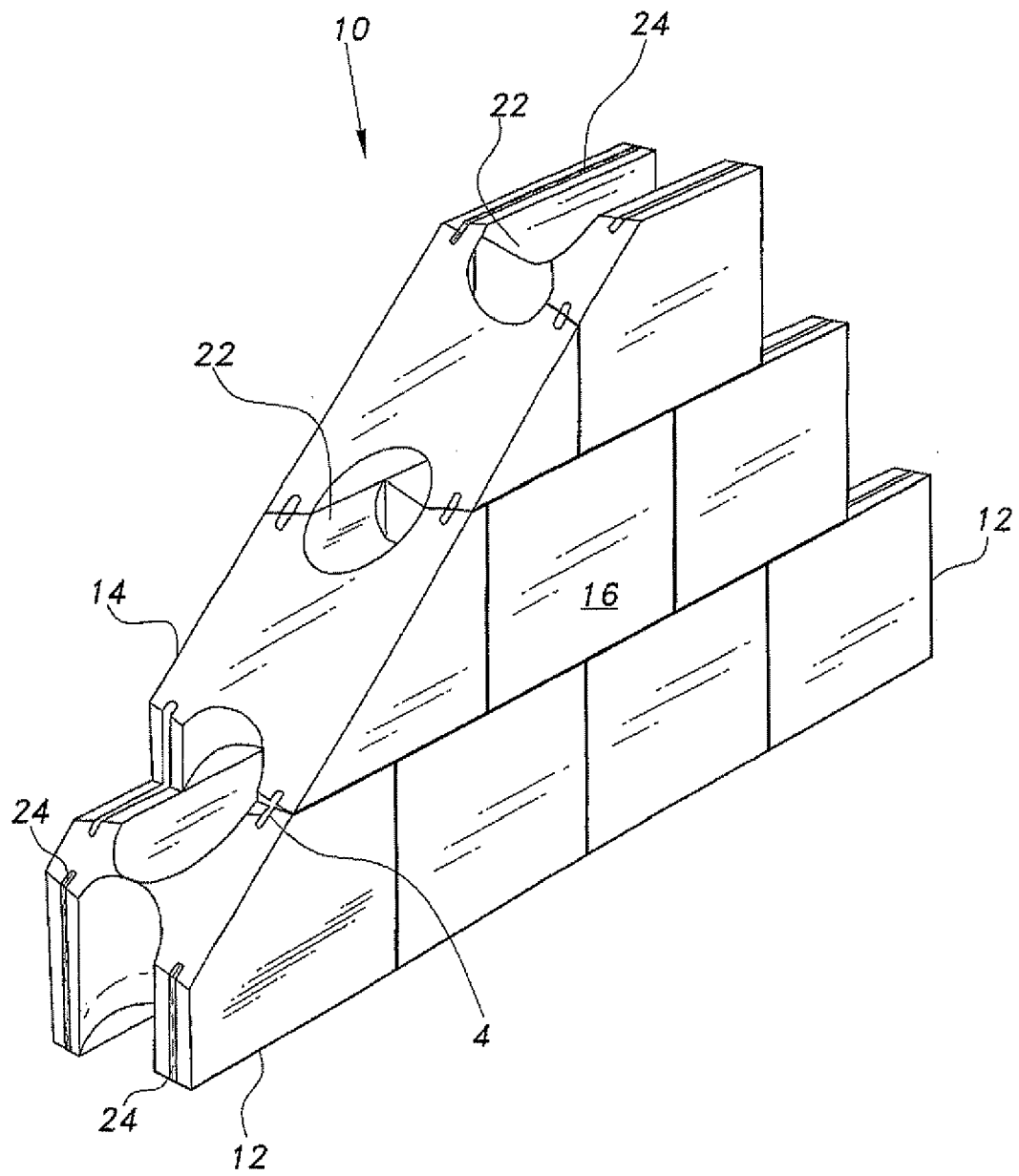


Fig. 2

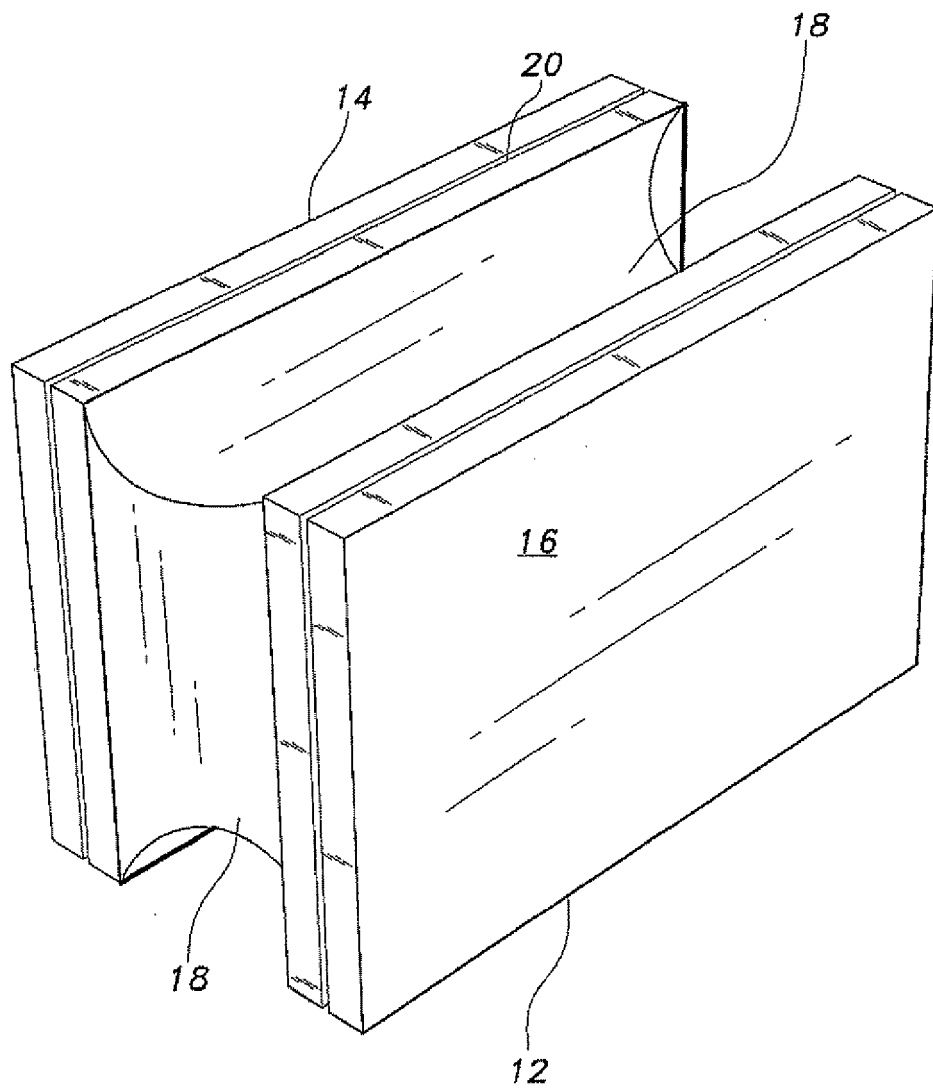


Fig. 3

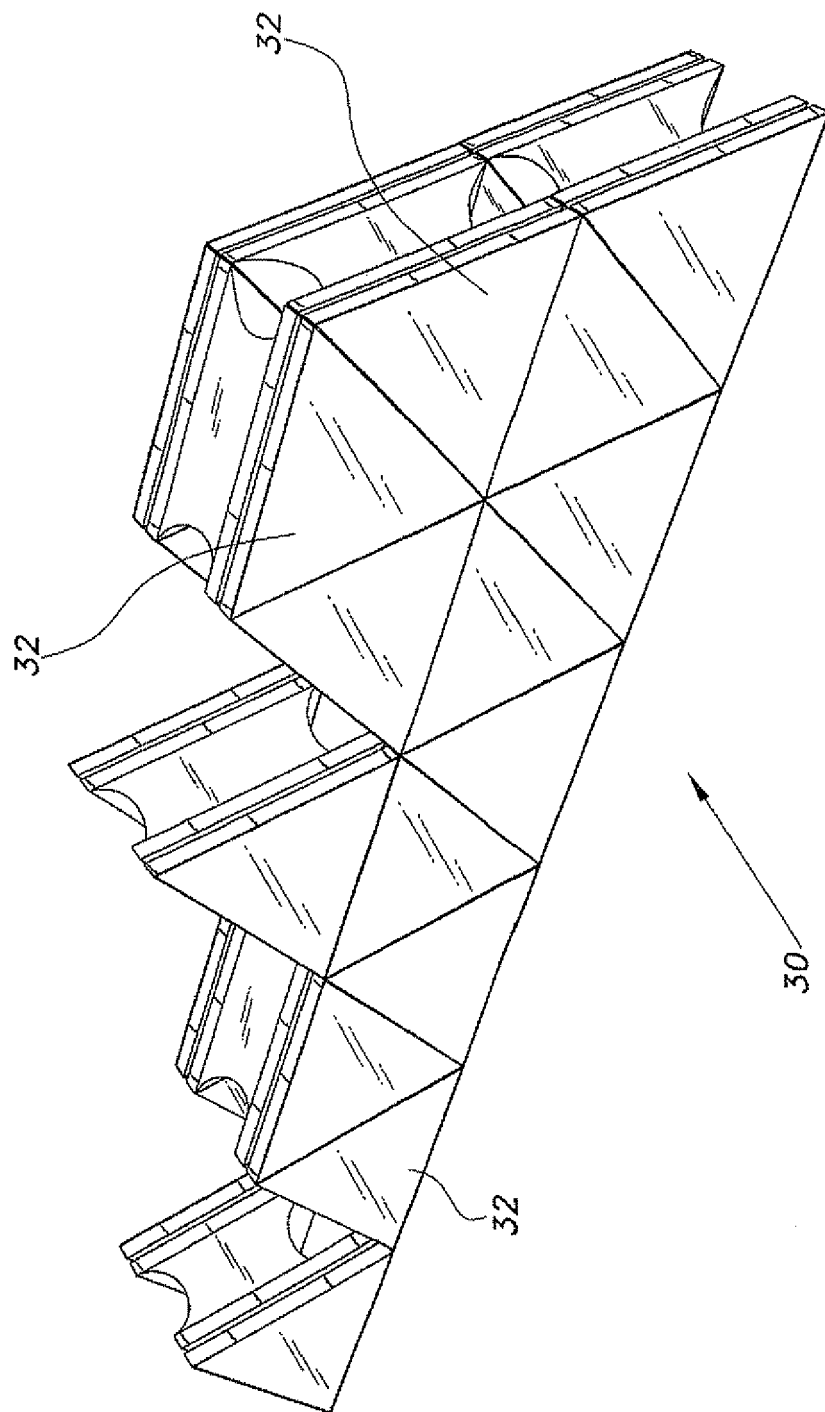


Fig. 4

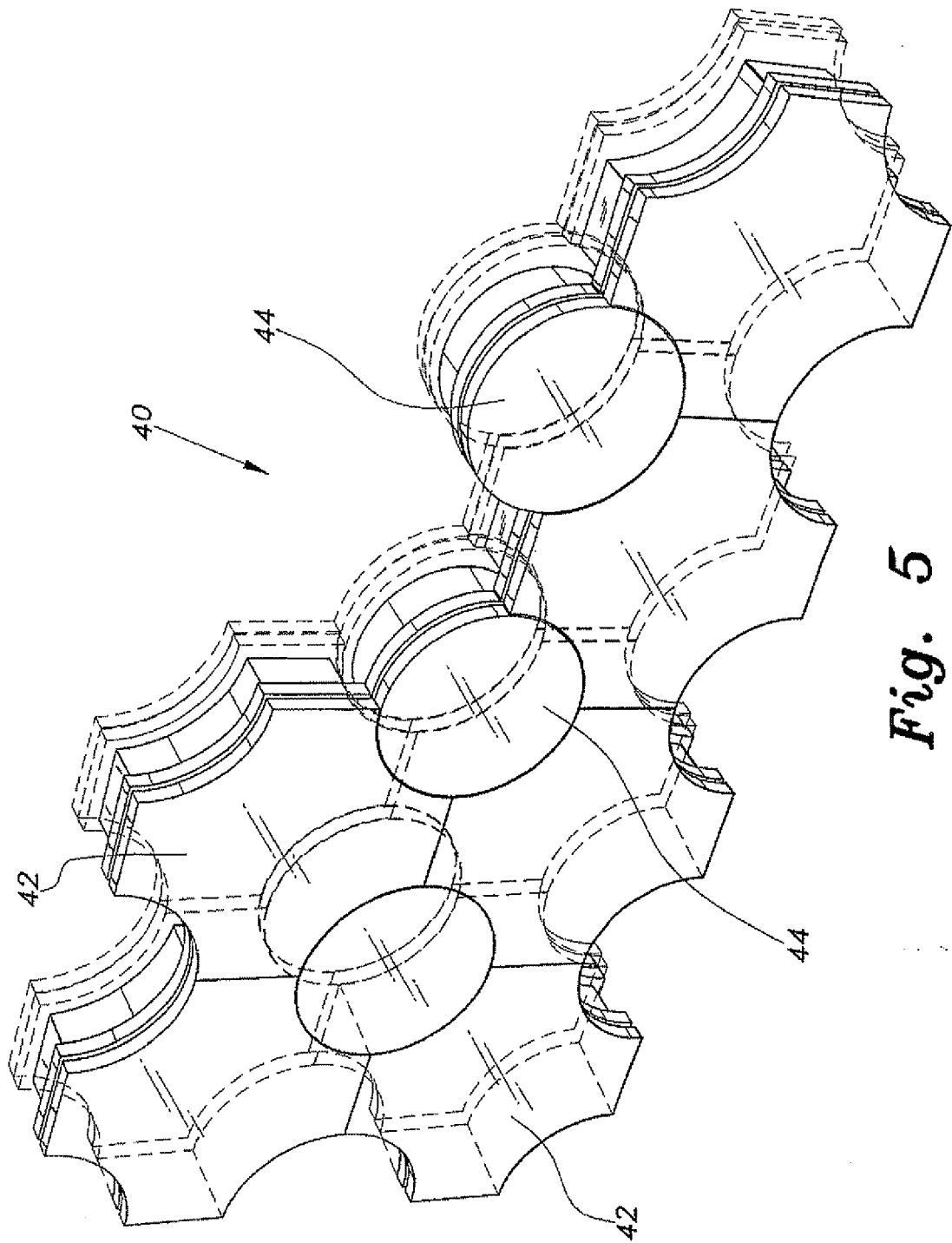


Fig. 5

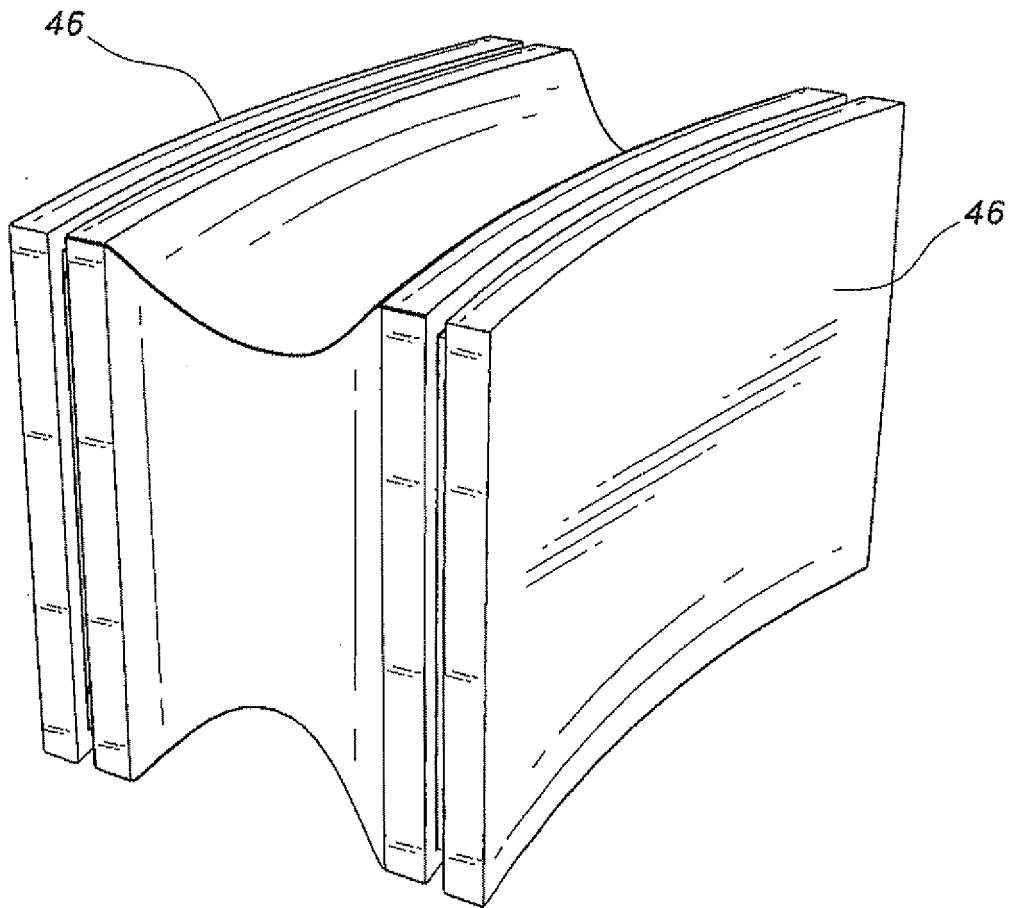


Fig. 6

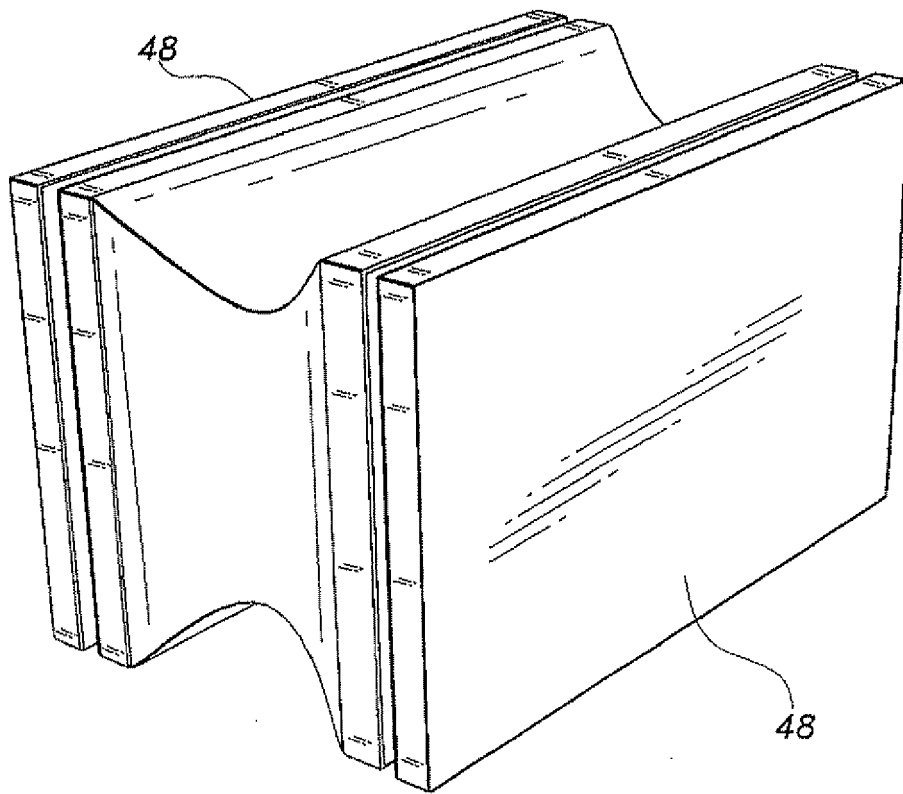


Fig. 7



EUROPEAN SEARCH REPORT

Application Number
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			TECHNICAL FIELDS SEARCHED (IPC)
			E04B E04C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 9 March 2015	Examiner Valenta, Ivar
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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