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BUILDING STRUCTURE

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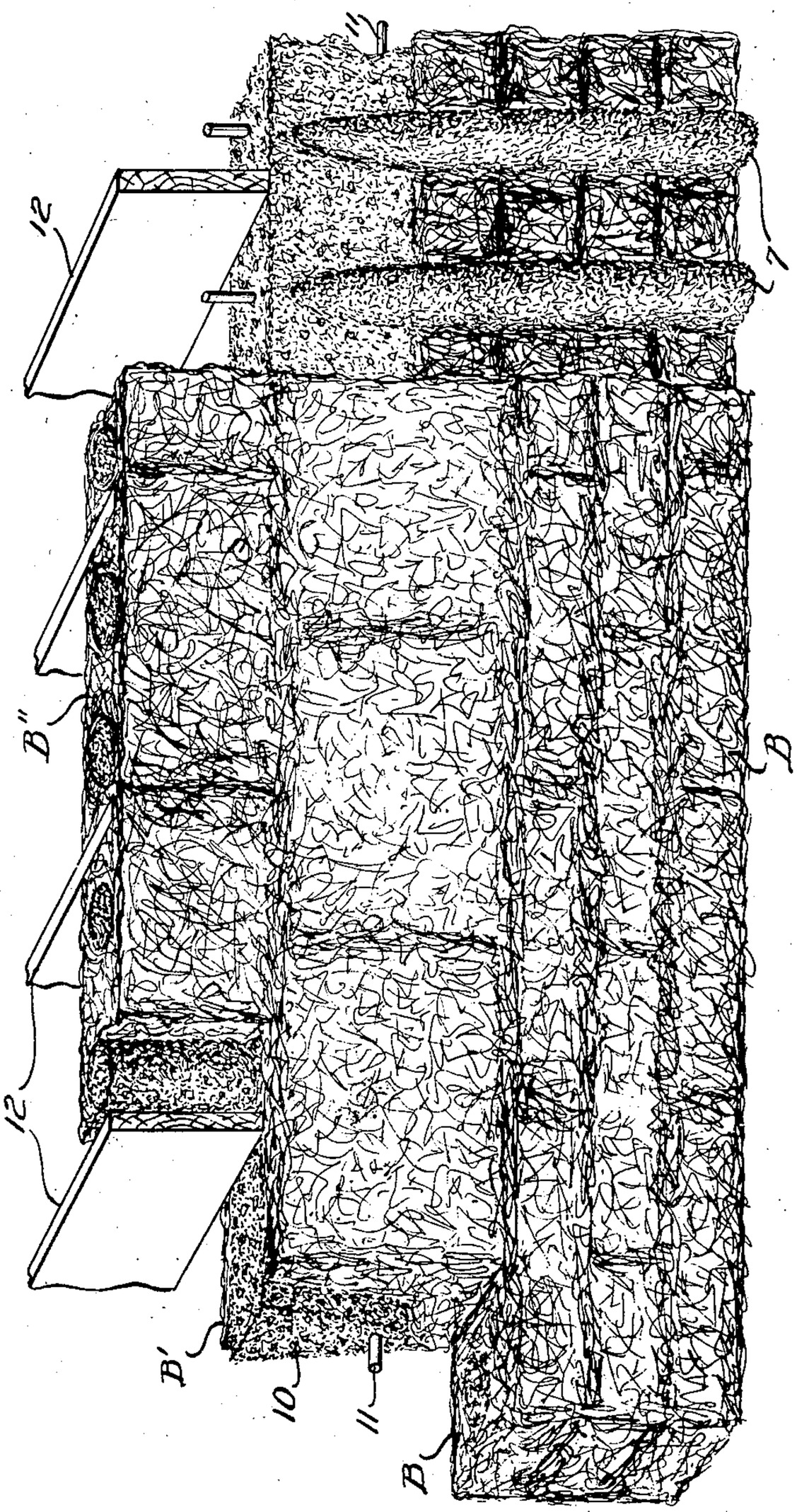


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# UNITED STATES PATENT OFFICE.

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## BUILDING STRUCTURE.

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In the patent of James Monroe Hewlett, No. 1,604,097, dated October 19, 1926, there is claimed a wall structure involving the use of fibrous, substantially non-absorbent blocks. The present invention relates to a building structure preferably utilizing such blocks, and while the present structure is illustrated in said Hewlett patent it is not claimed therein, as the same constitutes the joint invention of the present applicants rather than the sole invention of Hewlett.

According to the present invention, a wall is formed which comprises two distinct elements, one being a weight-carrying structure and the other a wall filling which also serves as the spacing medium for floor beams and the like which are supported by the weight-carrying structure. The filling medium is composed of blocks which preferably are fibrous, with large interstices between the fibres. Such blocks are substantially non-absorbent, but they have very little strength to resist crushing strains; under a load of any substantial weight they would be readily compressed and therefore when we refer to these blocks as "compressible," we mean blocks which would be squashed or compressed under building loads. These blocks are formed with appropriate openings so that the weight-carrying structure of concrete can be cast within them. Also the blocks are of such a nature that they can readily be cut with an ordinary saw to permit the insertion of floor beams and the like into the side of the wall so that such load elements may rest upon the load-carrying structure.

The present invention can readily be understood by reference to the said Hewlett patent and to the accompanying drawings in which the figure is substantially similar to Fig. 1 of said Hewlett patent.

The method of producing the blocks here illustrated is fully described in the Hewlett patent, but it may be stated briefly that these blocks consist of fibrous material, such as excelsior, coated with plaster and loosely compacted into a mold so that the fibres will stick together but will form a block with relatively large interstices between the fibres. In the accompanying drawing, it will be noted that three forms of block are illustrated. The blocks B may, for example, be 16 inches long, 8 inches wide and 4 inches thick. These blocks have two openings through them to receive vertical concrete columns 7 as illustrated at the right hand side of the drawing where the blocks are shown in sections. These columns may, for example, be about 4 inches in diameter. It is to be understood that the appropriate reinforcing rods are used in these columns, as for example described in said Hewlett patent.

The second type of blocks designated as B′ are much thicker than blocks B and have the openings for the vertical columns 7 and likewise have registering channels to form a horizontal concrete beam or girth 10. The horizontal beams 10 are preferably provided with longitudinal tie-rods 11 and the reinforcements for the vertical columns 7 are preferably made to extend into the horizontal beams 10, thereby tying the two together. The beams 10 must receive all the load and distribute it to the columns so they must be strong, preferably having a depth considerably greater than the diameter of the columns 7. For example, they may be 8 inches deep.

In constructing a house or similar structure, the blocks B are made with the joints broken in every course. At each story, a course of blocks B′ is provided, so positioned that the upper face of these blocks will be immediately below the floor beams 12. After the vertical columns 7 and horizontal beams 10 are poured (preferably with tie-rods extending up to connect additional vertical columns 7, as is well understood in the art) a set of blocks B″ is placed on top of blocks B′. The blocks B″ are exactly like the blocks B except that they are thicker, preferably being made the same thickness as the depth of the floor beams 12. As the blocks B″ are put in place, notches are cut on the inside to receive the ends of the floor beams 12. By this arrangement the blocks B serve as spacing members for the floor beams, and make a very tight, air-proof packing around the ends of the floor beams. The wall is then continued up until the next story where the operation may be repeated. If desired, two or more courses of blocks B may be used in place of blocks B″ with their sides appropriately notched to receive the ends of floor beams 12. If the usual pitched roof is used, the top of the wall structure may end

with the girth blocks B′ and the horizontal beams 10, the roof beams being carried by the beams 10 either directly or through the medium of a wooden nailing plate.

It will be understood that the girth blocks B′ may be used in other points, if desired; for example, if there is a large window opening, the girth blocks B′ may be placed directly over such opening, in which case the horizontal beam formed in these girth blocks will act as a lintel beam.

While this invention has been described as used with the fibrous blocks of the aforesaid Hewlett patent, it may be used with other types of block which are compressible and therefore not adapted to carry building loads.

What we claim is:

1. A building structure comprising a stockade-like series of vertical concrete columns, horizontal concrete beams substantially integral therewith connecting said columns, and adapted to distribute a load thereto, non-integral beams having ends resting on said horizontal concrete beams and compressible fibrous blocks embracing said concrete elements and filling the air spaces between them, and also embracing the ends of said non-integral beams whereby said non-integral beams are located in proper spaced relation to each other and the spaces between the ends thereof are substantially sealed.

2. In a building structure, the combination of a series of compressible blocks, a substantially integral concrete structure formed in said blocks consisting of vertical columns and horizontal beams, said horizontal beams being adapted to receive and distribute a load to the vertical columns, and load members entering said wall through said blocks and resting on said horizontal beams.

3. A building structure comprising fibrous blocks with relatively large interstices between the fibres and a substantially integral weight carrying concrete structure formed in the blocks comprising a stockade-like series of vertical columns and relatively heavy horizontal beams, the sides of which are covered by said blocks, and non-integral load carrying building elements resting on said beams.

4. A wall structure comprising compressible blocks and a concrete weight carrying structure formed in the blocks comprising vertical columns and a horizontal beam integral therewith of a depth greater than the diameter of the columns, the sides of said beam being covered by said blocks.

5. A building structure comprising a number of courses of fibrous rectangular blocks having relatively large interstices between the fibres, registering vertical openings in said blocks, concrete columns formed in said blocks, a course of relatively thick blocks of similar material resting on said first mentioned blocks and having vertical openings registering with the openings in said blocks and having registering horizontal channels connecting with said openings, said channels having a depth greater than the thickness of said first-mentioned blocks, and concrete in said openings and channels, whereby there is formed a weight-carrying structure having integral vertical columns and a horizontal beam of great strength.

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