

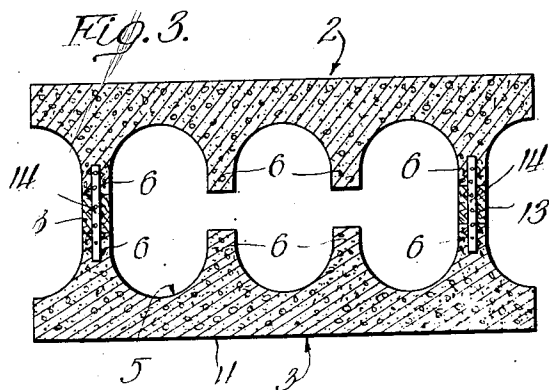
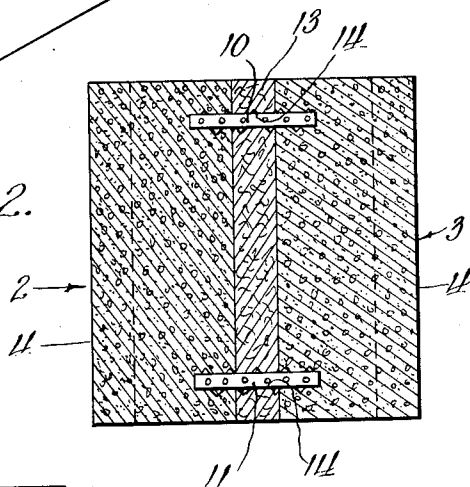
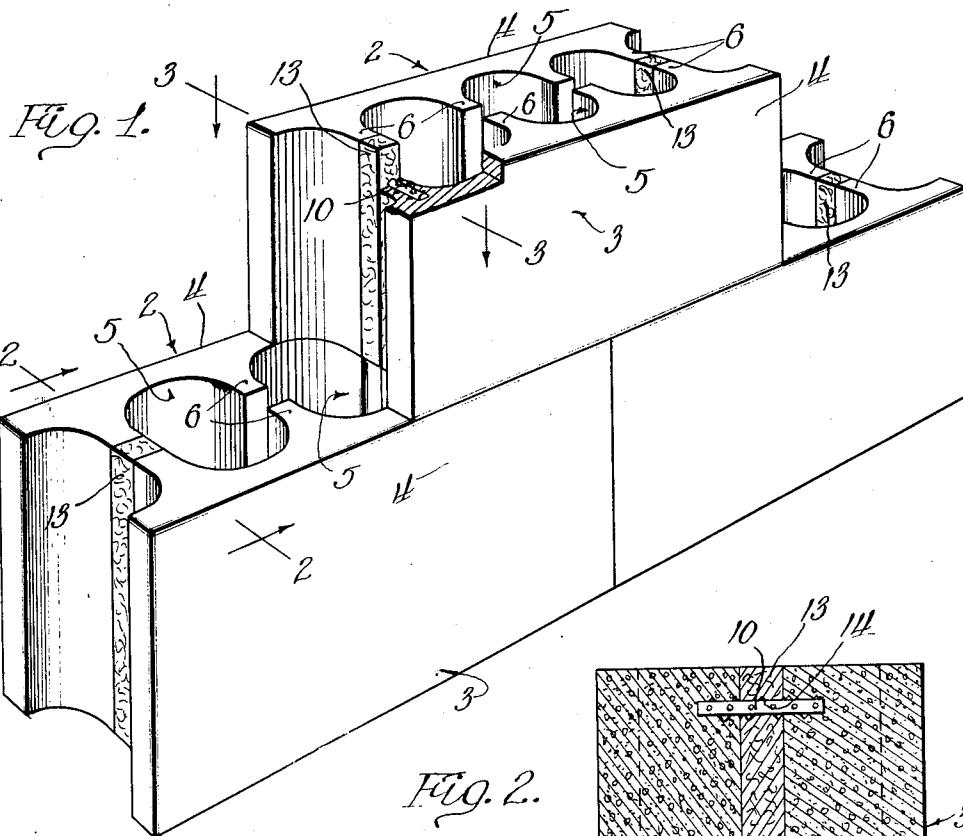
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BUILDING BLOCK

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BUILDING BLOCK

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1 Claim. (Cl. 72-43)

The present invention relates to building blocks and is more particularly concerned with blocks formed of concrete and other material which are so constructed that insulating air spaces are formed.

Heretofore, building blocks for wall construction and the like have been formed with spaced apart sections interconnected and held rigidly together by metal or wooden ties. While such construction provides the desired dead air space between the inner and outer portions of the wall formed by such blocks, blocks with wood connecting members have not been satisfactory because of the tendency of the wood connecting members to deteriorate or break. Also, building blocks having sections interconnected together by means of metal ties have not been found to be wholly satisfactory since if there is enough metal connecting the sections to prevent distortion in transportation and rough handling, the loss of heat passing through the metal ties would be sufficiently great to more than equal any advantage secured by virtue of the air space between the sections.

The object of general nature of this invention is the provision of a building block comprising two interconnected sections spaced apart to provide the desired air space and held rigidly together by connecting means that is moisture-repellant thereby producing a dry wall. Specifically, the connecting means includes tie members which receive and are reinforced by bars of moisture repellant and heat insulating material, which serve to stop the transmission of moisture from one side of the wall to the other. Preferably, also, the connecting members are metal rods or strips and act in tension while the insulating bars preferably are rigid parts and act in compression in resisting distortion of the block during shipping, handling and the like. Moreover, these bars serve to isolate the air space of one block from the air space of adjacent blocks and, in addition, permit the use of lighter tie rods or strips than would otherwise be possible, since the tie rods or strips are stressed principally in tension, the direction of their greatest strength, in holding the block sections together. Thus, the building block of my invention is moisture proof, is capable of withstanding rough treatment during handling, transportation and the like, and is one in which the heat loss by conduction through the tie rods is cut down to a minimum, since the amount of metal used is small.

These and other objects and advantages of my invention will be apparent from the following

detailed description of the preferred embodiment, taken in conjunction with the accompanying drawing illustrating such embodiment.

In the drawing:

Figure 1 is a perspective view of a portion of the wall constructed of blocks embodying my invention;

Figure 2 is a transverse section taken generally along the line 2-2 of Figure 1; and

Figure 3 is a longitudinal section taken through a block constructed according to the principles of the present invention.

Each block consists of two companion sections 2 and 3, preferably identical, and each section includes an outer surface 4 and an inner surface 5 which consists of a plurality of fins 6 separated by recessed portions 7. The fins 6 are generally parallel, and at the ends of the sections the fins 6 are spaced from the ends of the block a distance equal substantially to one half the distance between adjacent fins 6 in the intermediate portion of the section.

The two sections 2 and 3 are rigidly connected together at each end by a pair of tie members or rods 10 and 11. These members are shown as round rods but they may be in the form of flat metal strips, corrugated for better bonding to the block sections, or members of any other suitable shape or material. As best shown in Figure 1, the ends of each of the tie rods are embedded in the adjacent end fins 6 of the block sections, and disposed between the end fins at each end of the block is a spacing and reinforcing member in the form of a bar 13 of moisture repellant and heat insulating material. I have found that asphalt impregnated insulating materials such as wood or fiber board are suitable and act to prevent the transmission of moisture along the ties 10 and 11. Each bar 13 is provided with bores 14 to receive the tie rods 10, and in forming the block the tie rods 10 are supported in the blocks 13 and then the sections 2 and 3 molded and cast in position with the ends of the tie rods 10 and 11 firmly embedded in and bounded to the end fins 6. Where metal strips are used as the connecting members 10 and 11, the blocks 13 may be provided with slots, such as saw cuts, to receive the strips.

It will be noted that the bars 13 extend the full height of the building block and are in firm contact with the end fins. This results in a construction in which, in the first place, the space in one block between the sections 2 and 3 thereof is isolated from the adjacent air spaces in the neighboring blocks of the same course. It will

also be noted that the insulating bars 13 entirely surround the metal tie members 10 and 11 so that the bars 13 prevent the transmission of moisture and also serve to reenforce the tie rods 10 and 11 against bending and deformation which is apt to take place when building blocks having sections connected together in spaced relation by tie rods which are exposed and not reenforced. In this connection it will be noted that the blocks 13 act in compression, the direction of their greatest strength, while the ties 10 and 11 act in tension, the direction of their greatest strength, to resist deformation of the block. Thus, according to my invention, fewer tie rods are necessary where the insulating bars 13 entirely surround and protect the tie rods yet the block is sufficiently rigid to withstand jars, rough handling and the like. Therefore, there is smaller heat loss and less tendency to transmit moisture, which is still further reduced by the moisture-repellant blocks 13. The latter thus act in a dual capacity namely, as moisture repellants and as strength reenforcing members. Further, it will be noted that the intermediate fins 6 are brought close together in the finished block so that each block contains a number of air spaces having only restricted communication with one another, thereby improving the insulating qualities of the wall constructed with my blocks.

Another advantage of my construction is that by surrounding and protecting the tie rods 10 with the insulating blocks 13, the air in the spaces between the block sections is kept out of contact with the tie rods, and hence the latter will not rust but will retain their strength throughout the life of the block.

While I have shown and described above the preferred structure in which the principles of

the present invention have been embodied, it is to be understood that my invention is not to be limited to the specific details shown and described above, but that, in fact, widely different means may be employed in the practice of the broader aspects of my invention.

What I claim, therefore, and desire to secure by Letters Patent is:

A rigid non-deformable hollow building block comprising a pair of substantially identical moulded concrete wall sections, each having two inwardly directed half-webs, pre-formed plate-like spacing means formed of material that is both moisture repellant and of low heat conductivity and disposed substantially in the center of the block against the inner edges of said half-webs so as to define air spaces on each side of the plane of said spacing means, said spacing means being rigid and substantially incompressible, both laterally and longitudinally of the block, and one or more metal tie members extending transversely through said spacing means and embedded in and bonded to the concrete of the half-webs with the ends of the tie members spaced inwardly of the outer faces of said wall sections a substantial distance and protected by the concrete in which the ends are embedded, the bond between the tie members and the concrete of said half-webs serving to hold the edges of the latter firmly against said spacing means, and the rigidity and incompressibility of said spacing means serving to prevent bending of the tie members between said wall sections within the body of the spacing means and the displacement of one wall section with respect to the other either toward one another or in a plane generally parallel to the plane of said spacing means.

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