Feb. 6, 1951 R. S. REED 2,540,349

REINFORCED BUILDING BLOCK

Filed Sept. 19, 1946

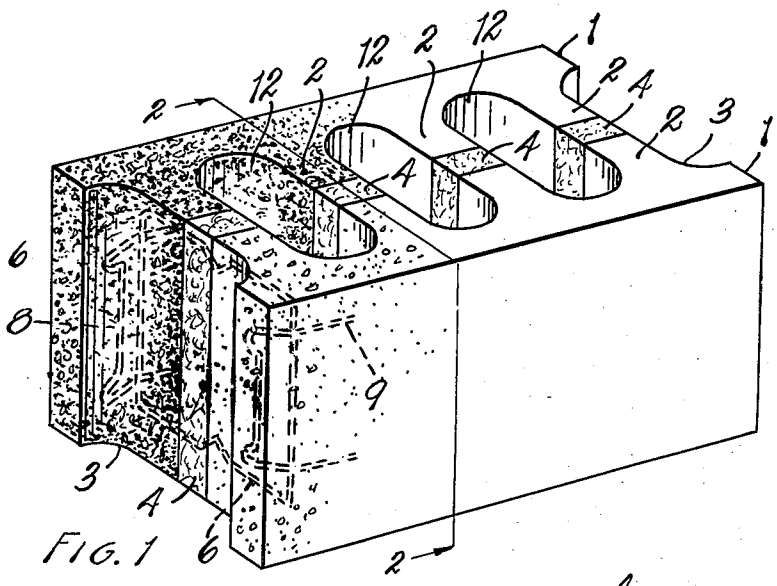

FIG. 1

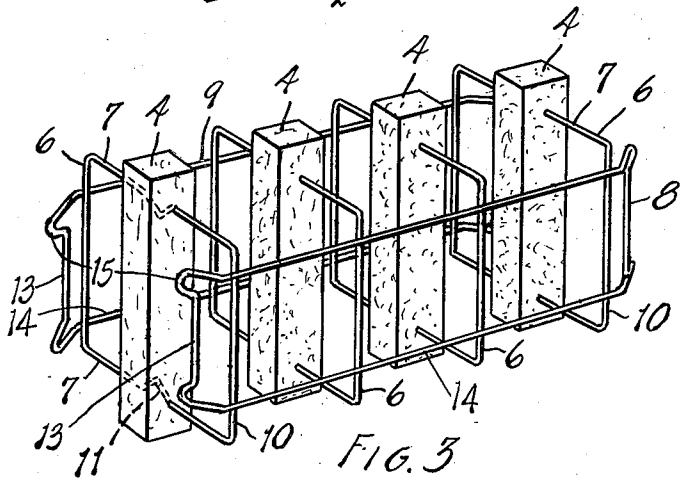

FIG. 3

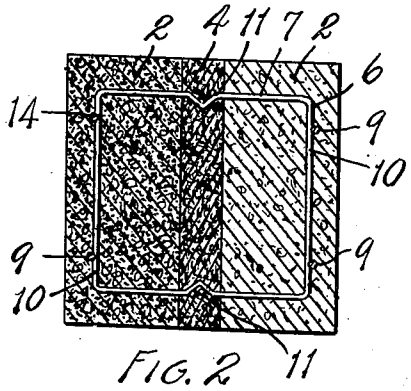

FIG. 2

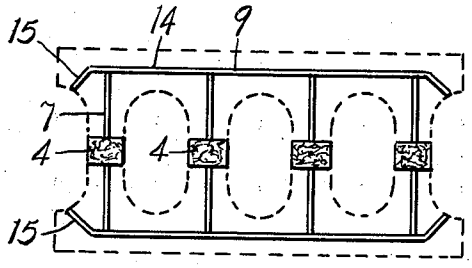

FIG. 4

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Patented Feb. 6, 1951

2,540,349

UNITED STATES PATENT OFFICE

2,540,349

REINFORCED BUILDING BLOCK

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Application September 19, 1946, Serial No. 697,992

4 Claims. (Cl. 72—42)

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This invention relates to building blocks.

The main objects of this invention are:

First, to provide a building block which constitutes a highly effective insulator both as to the transmission of heat and moisture.

Second, to provide a structure of this character which may be very economically and rapidly produced.

Third, to provide a combined reinforcing and insulating unit which may be positioned in a mold and have the concrete portions molded directly thereto, the reinforcing elements being positioned and carried by the insulating elements.

Fourth, to provide a building block having these advantages which may be laid in a wall with other blocks to provide an effective insulated wall, the blocks being laid as is common practice in the laying of bricks or blocks.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a perspective view of a building block embodying the invention, a portion of the reinforcing and tie members being illustrated by dotted lines.

Fig. 2 is a transverse section on line 2—2 of Fig. 1, the transverse tie members being shown in full lines.

Fig. 3 is a perspective view of the assembled unit comprising the insulating members and transverse and longitudinal reinforcing and tie members.

Fig. 4 is a plan view of the reinforcing and insulating unit, its relation to a mold being shown by dotted lines.

The embodiment of the invention illustrated comprises oppositely disposed complementary side sections 1, 1, having a plurality of inwardly directed aligned webs 2 and segmental recesses 3 in their ends. The insulating members 4 are of fibrous material, preferably impregnated with a waterproofing material or material resistant to the absorption or transmission of moisture. The insulating members 4 are in the form of bars, the width of the bars corresponding to the width of the tongues or webs 2.

The side sections 1 of the block are connected by the cross reinforcing and tie members 6 which are in the form of endless loops, the longitudinal members 7 of which are disposed through the insulating members 4 and extend well toward the outer side surfaces of the block to provide effective reinforcing means therefor and particularly for the tongue or web-like portions 2 thereof.

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The longitudinal reinforcing members designated generally by the numeral 8 are also in the form of continuous or closed loops and their longitudinal reaches 9 are welded centrally to the end reaches 10 of the cross members 6.

The longitudinal members 7 of the cross members have anchoring offsets 11 therein engaging the insulating members, thereby centering the insulating members upon the cross members and permitting the handling of the insulating members and reinforcing and tie members as a unit.

The insulating members 4 are desirably molded upon the longitudinal reaches of the cross members, the offsets anchoring the insulating members against movement on the longitudinal members of the cross members. In certain insulating materials the cross members can be engaged with the insulating members before the loops are closed. I have not illustrated the joints for the loops but these are formed of wire or light rod, the ends of the rod being welded. The end reaches 13 of the longitudinal members are inwardly offset relative to their longitudinal reaches 14 and joined thereto by the loops 15 which constitute form engaging members adapted to engage cores of the form or mold not illustrated.

The insulating members also are designed to engage cores or other parts of the form for supporting the assembled reinforcing and insulating unit or mold in position so that the concrete may be placed in the mold to properly embed the reinforcing members.

The units are assembled before placing in the mold which permits very rapid production. The blocks are desirably formed on a molding machine.

The recesses 5 at the ends of the block cooperate with corresponding recesses of adjacent blocks to provide additional air chambers—that is, the embodiment illustrated has three air chambers 12 and two half chambers in the adjacent blocks to provide complete chambers.

The air chambers are highly effective in preventing the transmission of heat and frost and moisture and the insulating members 4 serve to prevent transmission of moisture and frost and heat through the webs or tongues 2.

The sections of the block are rigidly connected. The block is reinforced both transversely and longitudinally so that it is not likely to be broken due to stresses or careless handling either to separate the sections or to fracture at the ends of the elongated air chambers.

I have illustrated and described a highly prac-

tical embodiment of the invention as applied to a generally rectangular building block. It will be understood that the size and shape and design of the block may be very greatly varied without departing from the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A building block comprising oppositely disposed complementary side sections having inwardly directed transversely aligned vertical webs and segmentally recessed ends, insulating members of fibrous material of a width corresponding to the width of the webs disposed between and spacing their adjacent edges and coacting therewith to provide a plurality of vertical chambers spaced longitudinally of the block and vertical end recesses, and block reinforcing and section tie members comprising vertical loop-like cross members extending transversely through said insulating members and having offsets in their transverse reaches disposed within said insulating members, and vertical loop-like longitudinal members, the longitudinal reaches of which are welded to the end reaches of said cross members, said longitudinal members and the portions of said cross members extending from said insulating members being moldably embedded in the side sections whereby the side sections are reinforced and tied together with said insulating members between them, the end reaches of said longitudinal members being disposed transversely inwardly of the block from the general planes of said longitudinal members and having vertically spaced return bend projections extending to the surfaces of said end recesses.

2. A building block comprising oppositely disposed complementary side sections having inwardly directed transversely aligned vertical webs, insulating members of fibrous material of a width corresponding to the width of the webs disposed between and spacing their adjacent edges and coacting therewith to provide a plurality of vertical chambers spaced longitudinally of the block, and block reinforcing and section tie members comprising vertical loop-like cross members extending transversely through said insulating members and having offsets in their transverse reaches disposed within said insulating members, and vertical loop-like longitudinal members, the longitudinal reaches of which are welded to the end reaches of said cross members, said longitudinal members and the end portions of said cross members extending from said insulating members being moldably embedded in the side sections whereby the side sections are reinforced and tied together with said insulating members between them.

3. A reinforcing and insulating unit for use in the manufacture of building blocks comprising a plurality of elongated generally rectangular bar-like insulating members adapted to be positioned between sections of a building block, a transversely extending loop-like cross member of metal rod stock associated with each of said insulating members, said cross members having offsets in their transverse reaches molded within the insulating members at points spaced from the ends of said insulating members, the transverse reaches being connected at their outer ends by end reaches integrally joined to the transverse reaches, and longitudinal members of loop-like metal rod stock having their longitudinal reaches welded to the end reaches of the cross members with the end reaches of the longitudinal members disposed in an inwardly offset relation to their longitudinal reaches and connected thereto at each end by loops constituting mold element engaging members.

4. A reinforcing and insulating unit for use in the manufacture of building blocks comprising a plurality of elongated generally rectangular bar-like insulating members adapted to be positioned between sections of a building block, a transversely extending loop-like cross member of metal rod stock associated with each of said insulating members, said cross members having their transverse reaches molded within the insulating members at points spaced from the ends of said insulating members, the transverse reaches of said cross members being connected at their outer ends by end reaches integrally joined to the transverse reaches, and loop-like longitudinal members having their longitudinal reaches welded to the end reaches of the cross members with the end reaches of the longitudinal members disposed in an inwardly offset relation to their longitudinal reaches and having laterally extending portions constituting mold element engaging members.

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