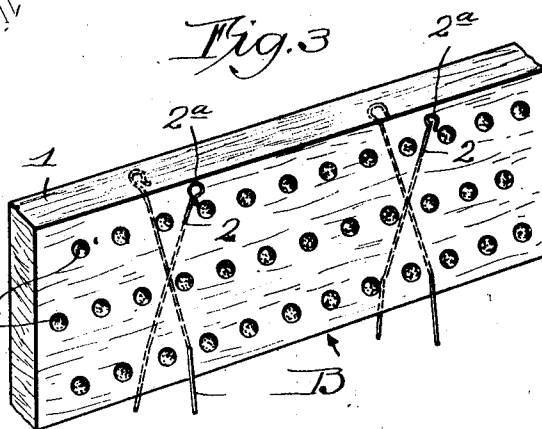
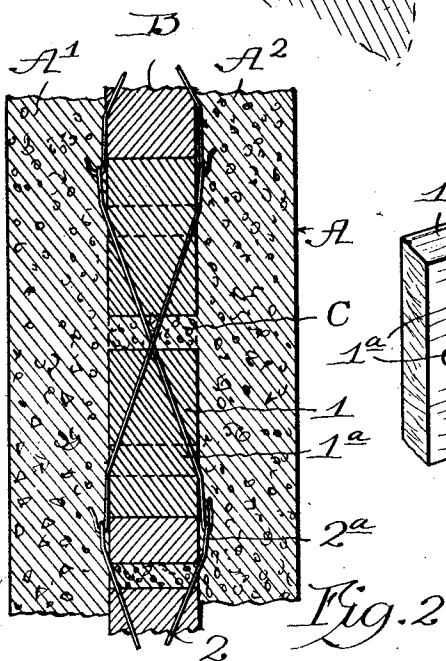
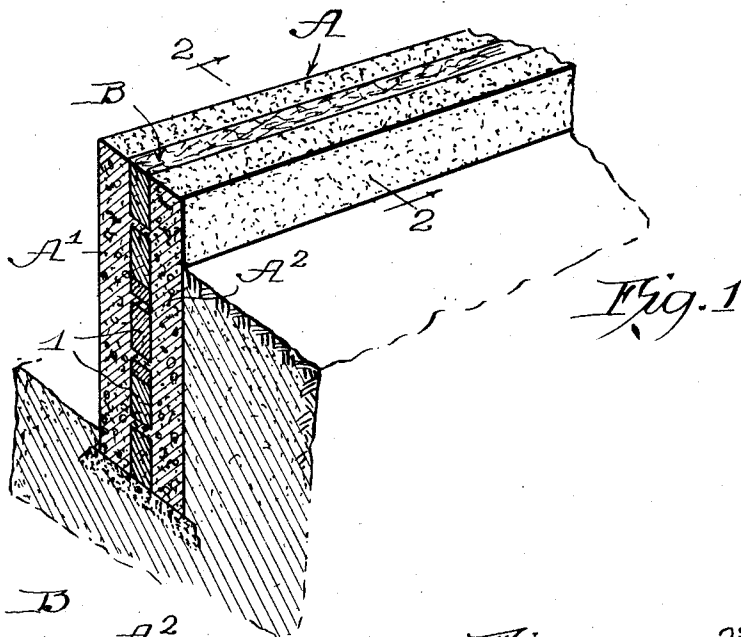


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INSULATING BUILDING MATERIAL
Filed Nov. 9, 1927



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INSULATING BUILDING MATERIAL.

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This invention relates to improvements in insulating building material, and more particularly to a material adapted to be incorporated in foundations and building walls for the purpose of retarding the penetration of moisture and heat.

The object of the invention is to provide an insulating material consisting chiefly of a relatively inexpensive substance treated to assume the form of blocks adapted to be assembled to provide an insulating core for concrete walls and the like.

A preferred embodiment of our invention is disclosed in the accompanying drawings, in which

Figure 1 is a perspective view of a wall section showing the introduction of the insulating core;

Figure 2 is a view in vertical section through the wall as taken on line 2—2 of Figure 1; and

Figure 3 is a perspective view of a single block of the insulating material.

The material consists in general of straw or like fibrous material pressed into the form of blocks or slabs and assuming a permanent and stable form by impregnating the mass with a suitable binder. The blocks may be made in different sizes, although preferably of a thickness of from three to four inches and of a length and width for convenient handling, as for instance, two feet by one foot.

Straw is perhaps the most satisfactory substance to use in the making of the material, as it is very inexpensive and of coarse texture suitable for the purpose. Any satisfactory binder may be used, such as the common forms of animal or mineral glues in general use. The method of making these blocks or slabs is to saturate the straw with the binder in a liquid and compress it into the form of relatively solid blocks 1 by means of a suitable press designed for the purpose, the material being then allowed to dry and harden. For ordinary purposes any substance having adhesive and binding qualities could be used, although where it is desired to make the material waterproof, binders having this property can be used, such as water-glass, asphaltum and the like.

These blocks or slabs are furthermore provided with series of holes 1^a extending transversely therethrough and of a relatively small diameter, as for instance, one inch. As shown in Figure 3, these holes are arranged in rows,

although they may be distributed in any desired manner. These holes can be formed either by means of cores in the press in which the blocks are made or cut in the blocks after they are released from the press. The purpose of these holes will presently appear.

It is also preferred to provide the block with connecting members in the form of thin rods or lengths of wire 2, which are inserted diagonally through the block from one side near one longitudinal edge through to the opposite face and opposite edge. These rods, moreover, are used in pairs spaced inwardly a fixed distance from each end of the block, each pair crossing each other at the center of the block. The ends of these rods project a short distance from the body of the block, the ends adjacent one edge being looped as at b.

Figures 1 and 2 show the manner in which these blocks are used in the formation of a core in a concrete foundation wall A. The forms into which the concrete is poured are erected in the usual manner and within this form is erected a thin wall of these insulating blocks B with substantially equal spaces on each side for the concrete. In erecting this wall, the blocks are laid edgewise in courses, as in laying bricks, the vertical joints in each course being broken by locating the abutting ends of the blocks in one course midway between the end joints of the blocks in the adjacent course. In this way the fastening rods which are preferably spaced inwardly from the joints a distance equal to one-fourth of the length, will register with each other and their ends fastened together by inserting the straight end through the looped end of the adjacent rod, thus securing the blocks together into a relatively substantial wall. The concrete is then poured into the spaces separated by the core thus forming two wall sections A' and A² on opposite sides of the core. The concrete when poured, flows through the holes in the core thus connecting the two wall sections A' and A² together by a plurality of cylindric tie members C acting to brace the wall sections. In the event that tie rods are used in the construction of the wall, they would be inserted through the holes in the core before the concrete is poured.

The insulating blocks 1 are obviously incapable of adding strength to the wall and would simply form an intermediate core or layer to retard penetration of heat through

the walls, and in that way reduce the condensation of moisture, or "sweating" as it is termed, on the inside of foundation and like walls.

5 The advantages in the use of this material reside in the ability to obtain practical insulation in a concrete wall at a very low cost, and being completely enclosed by the concrete does not increase the fire hazard. Moreover,
10 it will last indefinitely, particularly if the binder used has preservative qualities.

In disclosing our invention, we do not wish to be limited to any specific composition of the material inasmuch as different substances
15 having like characteristics might be found to be equally practical.

We claim as our invention:

1. An insulating material for the purpose described, consisting of blocks made of compressed straw impregnated with a binding
20 substance and provided with openings extending transversely therethrough, and rods passing through said blocks and having free end portions protruding adjacent opposite
25 edges thereof.

2. An insulating material for the purpose described consisting of straw or like fibrous substance, pressed into block form and treat-

ed with a suitable binder, said blocks are adapted to be laid in superimposed rows, and having wire rods extending diagonally there-
30 through from top to bottom and adapted to be connected at their adjacent free ends.

3. An insulating material for the purpose described consisting of molded blocks, and fastening members extending through said
35 blocks from one side to the other with their ends protruding on opposite sides and adjacent opposite edges for the attachment of adjacent blocks together.
40

4. An insulating material for the purpose described, consisting of a mass of fibrous material saturated with a waterproofing binder and compressed into block form, said block
45 having relatively flexible members extending therethrough with their ends protruding adjacent opposite edges, whereby said block may be secured to the blocks in adjacent rows in the construction of a wall.

Signed at Pittsburgh this 3rd day of No-
50 vember, 1927.

FRANK D. HAZEN.

Signed at Pittsburgh this 3rd day of No-
vember, 1927.

JOHN H. ANTILL.