May 29, 1928. 1,671,266

H. S. ASHENHURST

INSULATED WALL

Filed Feb. 16, 1925

Fig. 1.

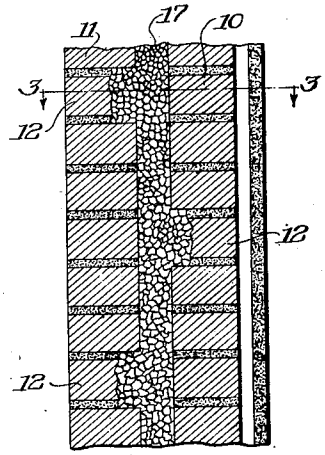
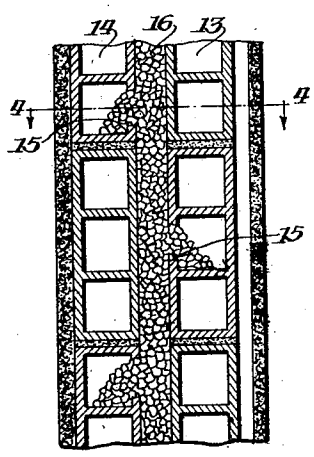


Fig. 2.



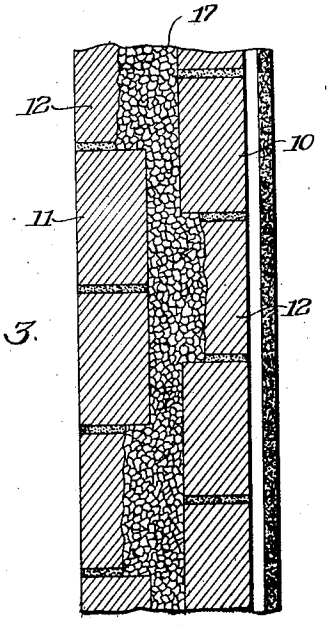


Fig. 3.

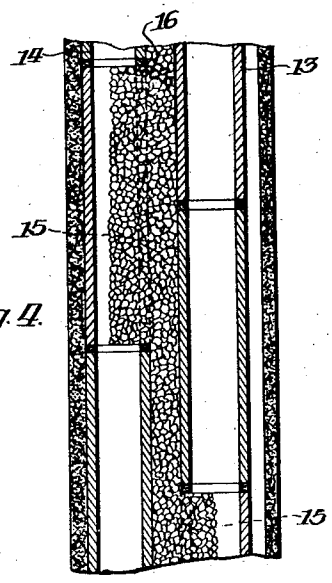


Fig. 4.

Witness:

Inventor:
Harold S. Ashenhurst

By Chas. F. Thwaney Atty

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UNITED STATES PATENT OFFICE.

HAROLD S. ASHENHURST, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO INSULEX CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

INSULATED WALL.

Application filed February 16, 1925. Serial No. 9,642.

My invention relates to means for providing monolithic insulation between spaced wall elements.

It has been determined that in order to secure efficient heat insulation, it is necessary to provide a thickness of insulating material at some point in the vertical walls. This is particularly desirable in order to suitably insulate the walls of ice houses and similar buildings. It has been found that masonry or hollow tile does not provide the necessary insulation and it has been customary to build masonry or tile walls of double thickness, leaving an intervening space which is filled with a fibrous or other insulating substance. However, such insulation is expensive and ineffective in some particulars. A strong objection is that there is no bond thus provided between the adjacent wall sections.

It is the object of my invention to provide an improved form of wall by a novel method in accordance with which a plastic expansible material is poured between spaced wall sections so as to set and harden in cellular form and to adhere to such wall sections so as to serve as a bond between them. It is another object of my invention to increase the bonding effect, such as by breaking out parts of the materials of the wall in course of the construction whereby the cellular bonding material may have a stronger grip on the wall sections.

It is another object of my invention to provide a method and construction of this type which can be employed by the ordinary skilled workman, which can be employed to advantage at low expense and by reason of which effective insulation may be obtained. It is still another object of my invention to provide sundry improvements as hereinafter set forth.

The invention will be more readily understood by reference to the accompanying drawing, in which

Fig. 1 is a vertical sectional view through a brick wall constructed in accordance with my invention.

Fig. 2 is a similar view through a tile wall.

Fig. 3 is a horizontal section taken on line 3—3 of Fig. 1; and

Fig. 4 is a horizontal section taken on line 4—4 of Fig. 2.

In building the wall shown in Fig. 1, bricks are laid up in the usual manner to provide two wall sections 10 and 11 spaced apart to provide an insulation space of the desired width, the inner and outer faces of each section being substantially parallel throughout their greater portions. In the process of construction, certain of the bricks 12 are broken away at one side and laid in this condition so as to leave recesses at intervals in opposite faces of the wall sections. After the spaced wall sections are partially or wholly completed, the insulating material is prepared and poured into the space between the wall sections. This material may be similar to that disclosed in my reissued Patent No. 15,952, dated November 25, 1924. Relatively small batches of this material are mixed and poured into place, sufficient time being allowed to permit the material to expand and set after each pouring operation before a second batch is mixed and poured thereon. As this material is poured into place, it enters the recesses formed by the broken bricks and serves to increase the bonding effect of the plastic material. The character of this material is such, however, that it strongly adheres to the masonry faces and provides a bond between the wall sections even when the bonding recesses are not provided.

While I prefer to employ the type of porous cellular material as disclosed and claimed in my prior patent as above suggested, I do not desire to be limited to any particular proportions of ingredients or to any particular form of material, except as the same is specifically claimed. I have obtained very good results by the use of materials mixed with water on the job and poured into place between the wall sections, such materials consisting of 100 pounds of calcined gypsum, 3½ ounces of commercial retarder, 6¼ pounds of a suitable carbonate, such as calcium carbonate, and 12½ pounds of aluminum sulphate containing its water of crystallization, all of such ingredients being finely ground and thoroughly mixed in a dry state.

In the constructions shown in Figs. 2 and 4, the wall is composed of hollow tiles laid to provide wall sections 13 and 14 suitably spaced apart. In the installation of the tiles, when a strong bond is required between the wall sections, the workmen break through the inside faces of certain of the title, as indicated at 15, in order that the

insulating material 16 may flow into the hollow interior of the tile and greatly increase the bonding effect. The preparation and pouring of the plastic material are the same as that described in connection with the brick wall construction.

In practical use, a coating or layer of a waterproof substance may be applied to the inside face of one of the wall elements, preferably the outer wall element. With such waterproof coating in use, the condensation of moisture in the insulating material will be avoided without interfering in any way with the adhesion of my cellular material to the wall element.

The effective insulation of vertical walls is accomplished very simply and economically. While I have illustrated walls as composed of two spaced masonary sections, it will be understood a similar result is secured even though one of the wall sections is composed of masonry and another of a different material. I do not wish to be limited except as indicated in the appended claim.

I claim:

A wall comprising in combination two supporting wall sections in spaced relation to each other, at least one of said sections being built up principally of hollow tiles with some of the tiles at intervals throughout the face of the wall section provided with openings into the interior hollow spaces and a monolithic body of cellular insulating material filling the space between said two sections and extending through said openings into the interior spaces of the tiles serving both to insulate the wall and also mechanically to bond the two sections together.

Signed at Chicago, Ill., this 13th day of February, 1925.

HAROLD S. ASHENHURST.