Jan. 9, 1934. G. M. THOMSON 1,942,989

HEAT INSULATING PRODUCT

Filed March 6, 1931

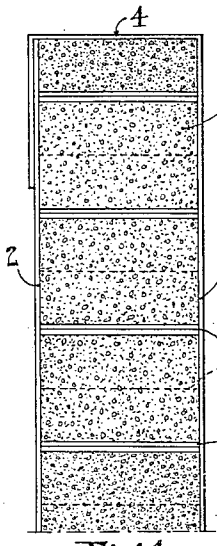



Fig. 1.

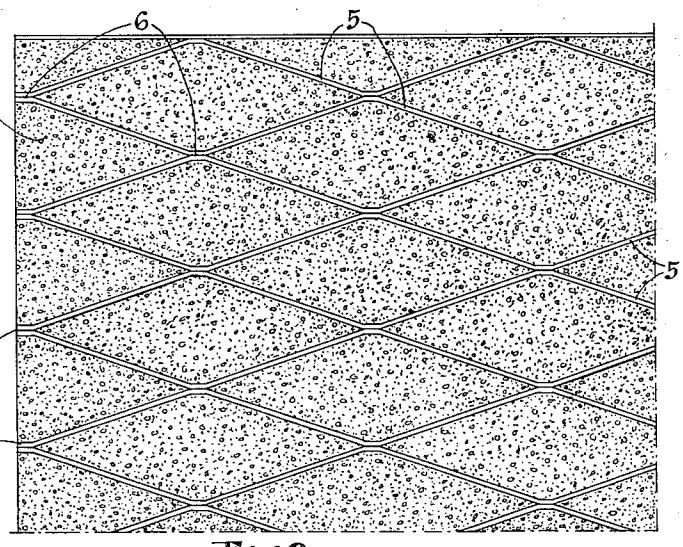



Fig. 2.

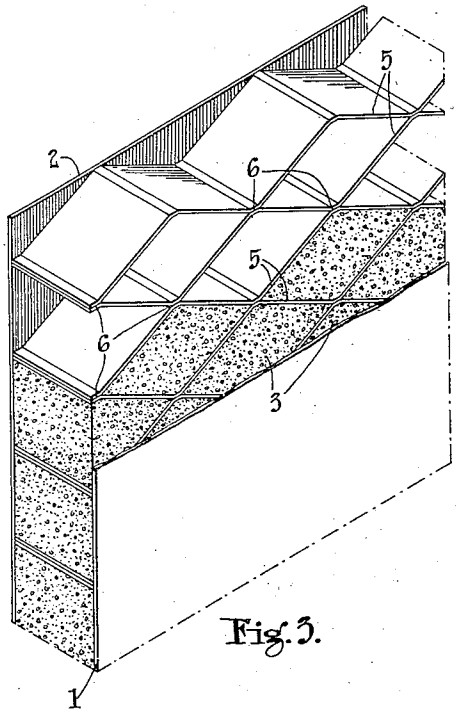



Fig. 3.

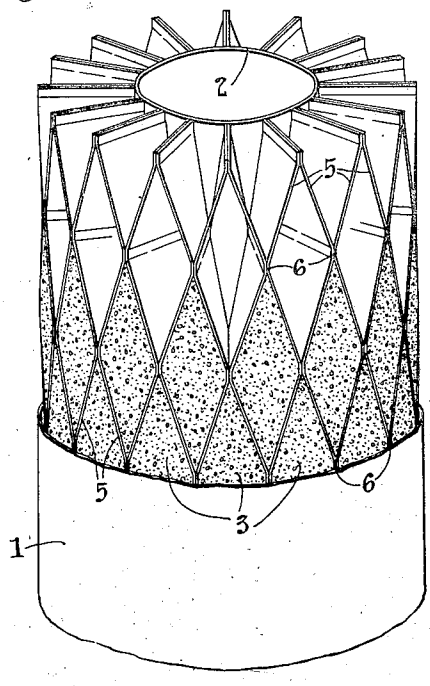



Fig. 4.

INVENTOR:
GEORGE M. THOMSON.

BY Marks & Clerk ATTORNEYS.


Published by AsbestosClaims.Law
asbestosclaims.law/library/22626/1

Patented Jan. 9, 1934 1,942,989

# UNITED STATES PATENT OFFICE

1,942,989

## HEAT INSULATING PRODUCT

George Miller Thomson, Caledonia, Ontario, Canada

Application March 6, 1931. Serial No. 520,627

3 Claims. (Cl. 154—44)

This invention relates to heat insulating products of the type comprising a layer of cementitious material, such as gypsum.

The invention is especially applicable to wall or partition boards particularly those of considerable thickness, and also to pipe insulation.

The invention has for its object to provide a product which in addition to possessing great heat insulating power is also of increased mechanical strength.

According to the invention a cellular reinforcement of paper strips is embedded in the cementitious core, the strips being so disposed that they are at all points substantially normal to the exterior surfaces of the core.

The invention consists in the construction, combination and arrangement hereinafter described and more particularly pointed out in the appended claims.

Referring now to the accompanying drawing which illustrates, by way of example, two convenient embodiments of the invention,

Figure 1 is an end elevation of a portion of a wall or partition board constructed according to the invention,

Figure 2 is a fragmentary front elevation of Figure 1, with the front paper cover removed,

Figure 3 is an isometric view of the form shown in Figures 1 and 2, with part of one paper cover removed and the cementitious material omitted from the upper cells.

Figure 4 is a fragmentary perspective view of the invention applied to a pipe insulation.

The numerals 1 and 2 indicate paper covering sheets and 3 a cementitious core of a board which may conveniently be several inches thick though the invention is not restricted to any particular dimensions. The core may consist of a hardened layer of initially plastic, aerated gypsum. The side edges of the board may if desired, be covered with paper as at 4 or in any other convenient way.

According to the invention a cellular reinforcement of paper strips are embedded in the core 3. For example, as illustrated in Figures 1 to 3, the reinforcement consists of paper strips 5 each connected to the adjacent strips on opposite sides at staggered points 6. The reinforcement extends the full thickness of the core 3 and is adhesively connected at the edges of the strips 5 to the paper covering sheets 1 and 2. The required degree of opening of the cells is determined before the reinforcement is embedded in the core so that the requisite degree of mechanical strength is obtained.

As the strips 5 are normal to the sheets 1 and 2 they greatly increase the strength of the resulting product against crushing and bending without materially adding to the weight thereof. The strips 5 may extend either longitudinally or transversely of the board, but preferably longitudinally.

As indicated in Figure 4 the invention may be applied to insulating products which are curved in one direction, a pipe covering being shown by way of example. In this example the cementitious core is tubular and the paper reinforcement 5 is bent round to conform to the shape of the core. Of course, the reinforcement may be bent round the pipe before the core material is introduced into the cells, or the product may be made in segments adapted to be fitted together around the pipe.

For certain purposes one or even both paper covering sheets 1 and 2 might be omitted.

Modifications may be resorted to without departing from the scope of the invention as defined in the following claims.

What I claim is:—

1. A heat insulating product comprising a layer of cementitious material of uniform thickness, reinforcement of interconnected, zigzag paper strips embedded in said layer forming angular open-ended cells filled with said cementitious material, and paper covering sheets adhesively attached to opposite faces of said layer and the edges of said paper strips and closing said cells.

2. A heat insulating product comprising a layer of cementitious material of uniform thickness, and paper strips of a width equal to the thickness of the layer embedded in said layer and arranged substantially at right angles to the exterior surfaces of said layer, each strip being of zigzag formation and connected to the adjacent strips on each side at staggered points.

3. A heat insulating product comprising a layer of cementitious material of uniform thickness, and paper strips of a width equal to the thickness of the layer embedded in said layer and arranged substantially at right angles to the exterior surfaces of said layer, each strip being of zigzag formation and connected to the adjacent strips on each side at staggered points and a paper covering adhering to the opposite surfaces of said layer and the edges of said strips.

GEORGE MILLER THOMSON.


Published by AsbestosClaims.Law
asbestosclaims.law/library/22626/2