Oct. 6, 1931. G. A. YOUNG 1,826,114

INSULATING PANEL

Filed Dec. 5, 1929

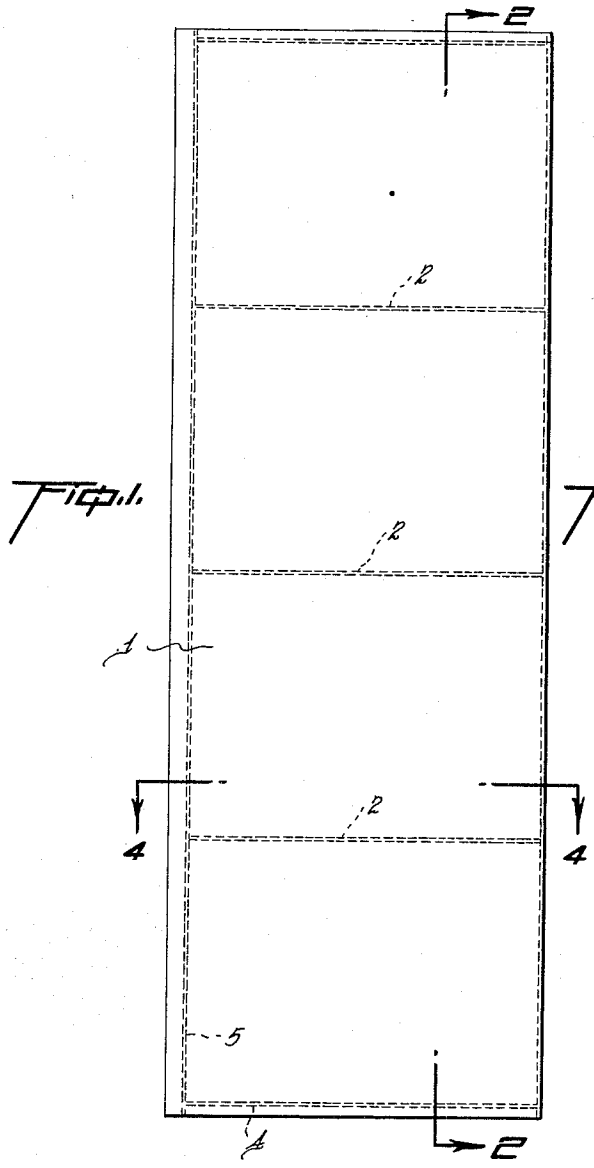


Fig. 1.

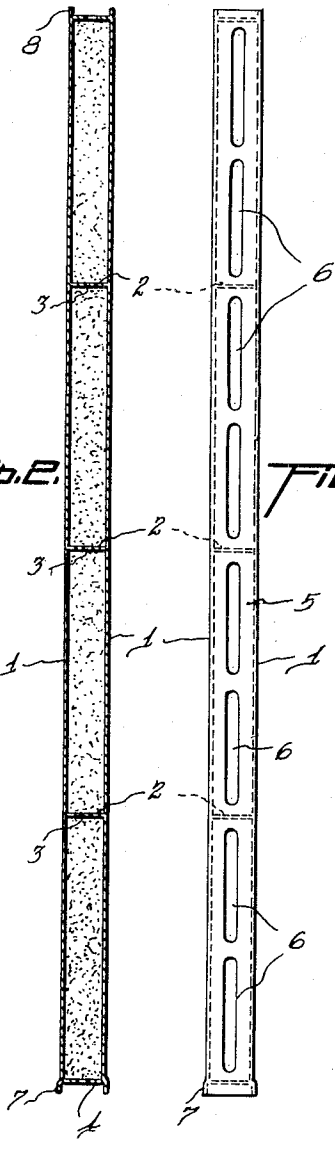


Fig. 2.

Fig. 3.

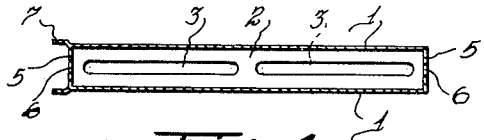


Fig. 4.

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UNITED STATES PATENT OFFICE

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INSULATING PANEL

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The present invention pertains to a novel insulating panel and is intended primarily for use in connection with doors, partitions and wall of ovens and other structures. The present panel is a fabricated structure having metal walls and filled with insulating material, as distinguished from insulating wall boards or blocks which are homogeneous or of the same material throughout.

One of the objects of the invention is to provide a metallic panel that can be filled with a powdered, granular or fibrous insulating material and maintain such material in place without permitting the material to settle, pack or become displaced to the extent of forming air pockets which would reduce the insulating properties of the panel.

This object is realized by constructing the enclosure or frame of the panel from a pair of side plates which are spaced, joined and braced by means of transverse partitions having perforations of considerable size. The end walls may also consist of such perforated members if desired. The enclosure thus formed is packed with a cheap granular insulating material. It will be evident that this material is continuous throughout the interior of the panel and may be packed therein to such an extent as to preclude the formation of gaps or air pockets, while the partitions maintain the proper shape of the panel.

The invention is fully disclosed by way of example in the following description and in the accompanying drawings, in which—

Figure 1 is a side elevation of a panel constructed according to the invention;

Fig. 2 is a section on the line 2—2 of Figure 1;

Fig. 3 is an edge view; and

Fig. 4 is a section on the line 4—4 of Figure 1.

Reference to these views will now be made by use of like characters which are employed to designate corresponding parts throughout.

The panel herein illustrated and described includes a pair of plates 1 of substantial area and constituting the side walls. The plates are held in spaced relation by means of parallel transverse partitions 2 perforated by means of elongated slots 3 and constituting also a brace for the panel structure. These partitions are secured to the inner surfaces of the walls 1 in any suitable or desired manner.

Where several panels are to be erected end to end and edge to edge to form a wall, the end walls may also consist of perforated members 4 similar to the partitions 2. In like manner the longer edge walls 5 may also be formed with elongated slots 6 of the same character as the slots 3. One of the longer and one of the shorter edges of the plates 1 may be extended beyond the walls 4 and 5 respectively, and flared as at 7 to be fitted over the abutting edge of an adjacent panel. The side walls 1 may also be extended beyond the end walls 2. Beyond the remaining walls 4 and 5, as indicated by the numeral 8 to receive the flared portions 7 of adjacent panels. Inasmuch as the outer walls of the panels are perforated, the spaces thus formed between adjacent panels are filled by the insulating substance 9 which is finally packed into the panels.

This insulating material is preferably a powdered or granular raw material occurring as a cheap by-product of certain processes, or a fibrous material such as mineral wool. The panels are filled entirely with this material, as distinguished from insulating blocks or filters which consist of approximately seventy-five percent insulating material and the remainder lime and asbestos fibers or other binders. The insulating material is compressed in the metal enclosure to provide a solid and homogeneous mass therewithin. Due to the slots in the partitions and peripheral walls, the metallic conducting paths between the plates 1 are reduced to a minimum, consistent with proper support and bracing of the metal structure. Due to the fact that the insulating material is packed firmly into the enclosure, there is very little danger that the material will settle or pack in the bottom of the panel and form air pockets, which has been the objectionable features of insulating powder for oven panels.

Although a specific embodiment of the invention has been illustrated and described, it will be understood that various alterations

in the details of construction may be made without departing from the scope of the invention, as indicated by the appended claims.

What I claim is:—

1. An insulating panel comprising a pair of spaced plates forming side walls, perforated transverse partitions extending from wall to wall and secured to said walls, and insulating material packed between said walls and through said partitions.

2. An insulating panel comprising a pair of spaced plates forming side walls, perforated transverse partitions extending from wall to wall and secured to said walls, insulating material packed between said walls and through said partitions, and end wall members between said side walls at the margins thereof, said members being also perforated.

3. An insulating panel comprising a pair of spaced plates forming side walls, transverse partitions extending from wall to wall and secured to said walls, said partitions being formed with elongated slots, and insulating material packed between said walls and through said partitions.

4. An insulating panel comprising a pair of spaced plates forming side walls, transverse partitions extending from wall to wall and secured to said walls, said partitions being formed with elongated slots, insulating material packed between said walls and through said partitions, and end wall members between said side walls at the margins thereof, said members being also perforated.

5. An insulating panel comprising a pair of spaced plates forming side walls, perforated transverse partitions extending from wall to wall and secured to said walls, and insulating material packed between said walls and through said partitions, said partitions being positioned to aid in supporting said insulating material.

In testimony whereof I affix my signature.

GEORGE A. YOUNG.