Dec. 8, 1925. 1,564,948

L. G. COPEMAN

REFRIGERATOR DOOR

Filed March 6, 1924

Fig. 1

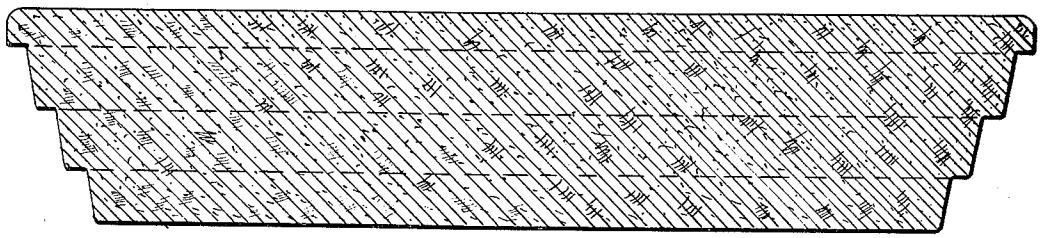
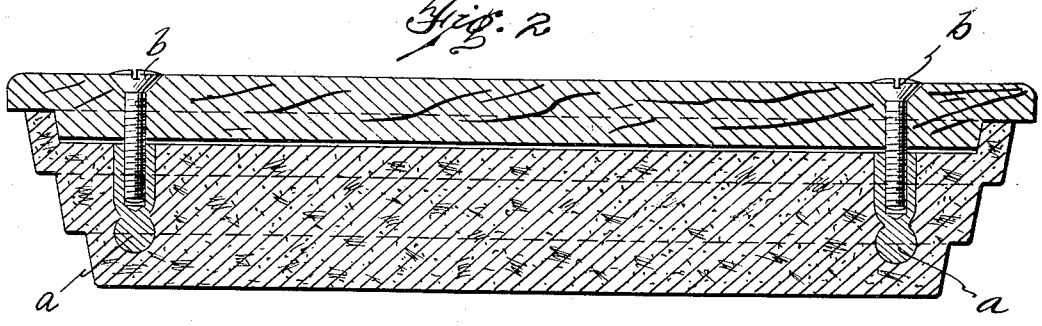


Fig. 2



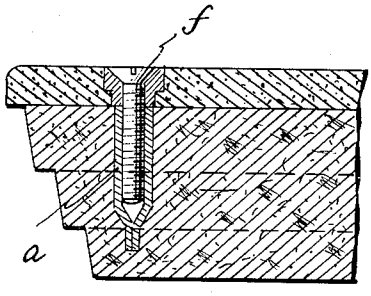


Fig. 3

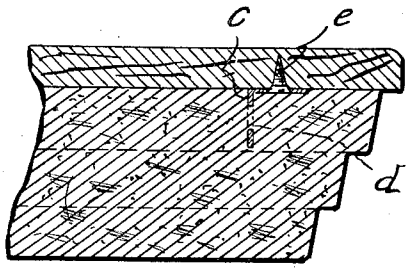


Fig. 4

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UNITED STATES PATENT OFFICE.

LLOYD G. COPEMAN, OF FLINT, MICHIGAN.

REFRIGERATOR DOOR.

Application filed March 6, 1924. Serial No. 697,215.

To all whom it may concern:

Be it known that I, LLOYD G. COPEMAN, a citizen of the United States, residing at Flint, in the county of Genesee and State of Michigan, have invented certain new and useful Improvements in Refrigerator Doors, of which the following is a specification.

This invention relates to refrigerator doors and has for its object a refrigerator door which has a large part or all of the door made of a molded heat-insulating material. This heat-insulating material is made of ingredients which are calculated to give it a high insulating value as distinguished from metals and stonework which have a relatively high heat conductivity.

In the drawings:

Fig. 1 is a cross section of the moulded door constructed of heat-insulating material.

Fig. 2 is a cross section of my preferred form of the invention in which the outside of the door is preferably constructed of a wooden panel.

Fig. 3 is a fragmentary section of still another modified form in which the outside panel is cast stone.

Fig. 4 is still another modification showing how the wooden panel and the insulating material may be united by a casting operation.

In my prior application No. 623,045, I have shown and described a door in which the preferred form of construction is provided with a hollow insulating tile on the inside. A large measure of the insulation in such prior construction is secured from the dead air space in the tile, the tile itself being made of a stone work material which has a fairly good conductivity for heat.

It is the object of the present invention to provide a door lining member which is constructed of relatively high insulating material and consequently requires no hollow space to provide dead air insulation. This gives a more solid, more compact construction but one which is fully as light for the reason that the material out of which it is made is of very much lower specific gravity.

I employ a plastic material having high heat-insulating properties, such for instance, as kieselguhr or infusorial earth. I take, say, a pound of ordinary glue and mix it with 2½ pounds of water; then I add this to ground or powdered kieselguhr or infusorial earth and mix enough of the water and glue into it to make the same thoroughly plastic so that it can be moulded. I then fill a mould with the material and mould either a complete door such as shown in Fig. 1, or a thick door lining such as shown in Fig. 2, with metal bushings *a* moulded directly into the lining member. These are tapped and this permits the wooden outer panel to be secured to the heavy lining by means of the screws *b*.

Another way is to use an angle iron strip *c* which is provided with perforations *d*. This is secured to the inside of the wooden panel by screws *e*. This wooden panel may then be placed in the mould and the thick door lining may be moulded right over the inside face of the panel and the angle iron strip. This unites the lining directly to the wooden panel.

Still another form is shown in Fig. 3, where the insulating lining is moulded with the tapped bushings *a* and then a separately cast stone panel may be secured to the insulating lining by the screws *f*.

Another heat insulating composition which I employ is one which is made of 75% magnesium-oxide, 15% ground cork, 10% ground flint; this is mixed with liquid magnesium-chloride of the specific gravity of 22 Baumé, enough of this magnesium chloride being added to the 100% ingredients named to make the same thoroughly plastic and mouldable.

Still another composition which I may employ is a mixture of granulated cork and asphaltum. The asphaltum is heated as thin as possible and then mixed with such amount of ground cork as seems desirable. Of course, the more cork that is put in the less will be the specific gravity.

It will be obvious that various other suitable compositions of matter can be employed to accomplish my object, which is to construct a door of a mouldable heat-insulating material.

What I claim is:

1. A door, having an outer panel and an inner lining comprising a solid block of

moulded heat insulating material secured to the panel and serving as the sole means of heat insulation for the door structure.

2. A door for refrigerators or the like, comprising a structure in which at least a part of the door comprises a moulded, self-supporting block constructed of a special composition possessing a high heat-insulating efficiency compared with ordinary artificial stone, and having the further capacity of being mouldable into a self-supporting artificial stone block.

In testimony whereof I affix my signature.

LLOYD G. COPEMAN.