Sept. 30, 1924. 1,509,932

L. G. COPEMAN

REFRIGERATOR LINING

Filed March 5, 1923 2 Sheets-Sheet 1

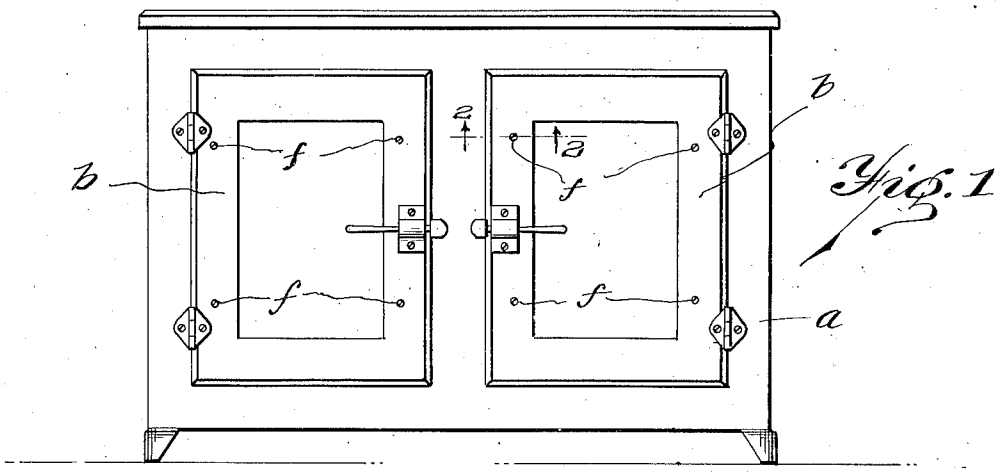


Fig. 1

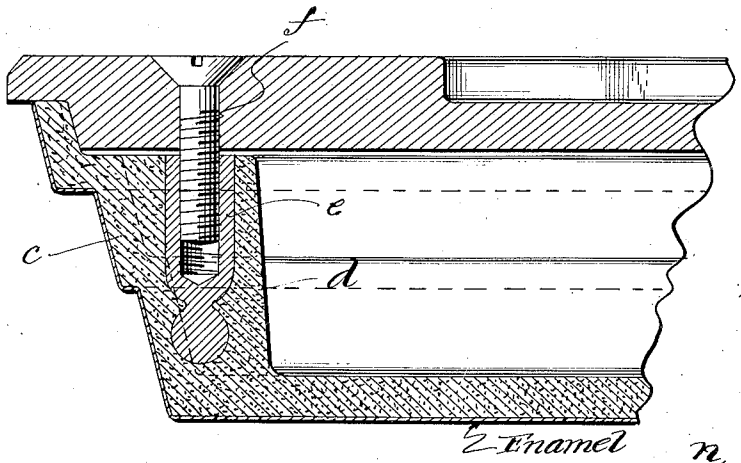


Fig. 2

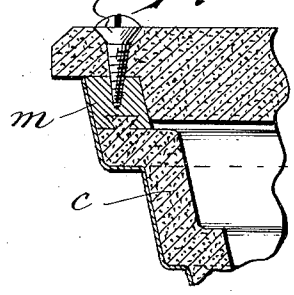


Fig. 6

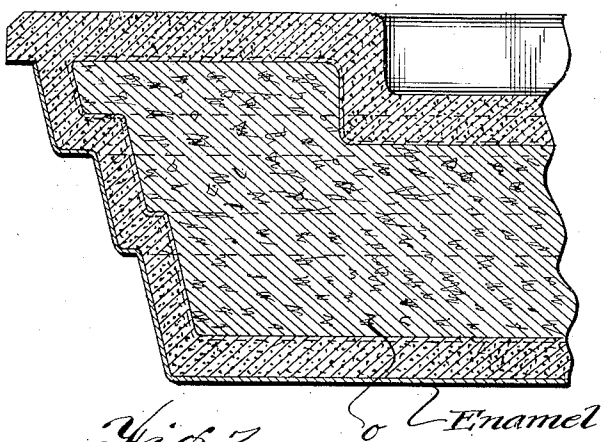


Fig. 7

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REFRIGERATOR LINING

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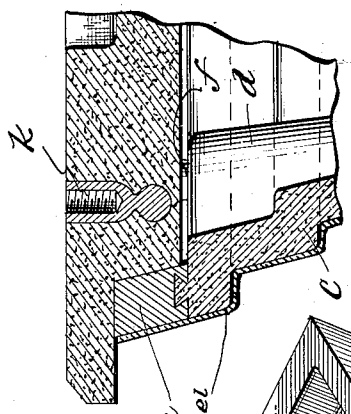


Fig. 5

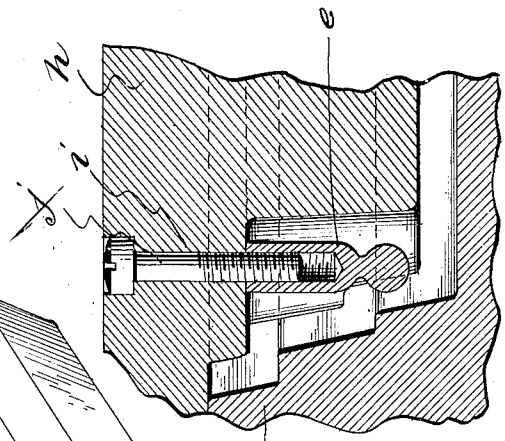


Fig. 4

Fig. 3

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UNITED STATES PATENT OFFICE.

LLOYD G. COPEMAN, OF FLINT, MICHIGAN

REFRIGERATOR LINING.

Application filed March 5, 1923. Serial No. 623,045.

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 Linings, of which the following is a specification.

This invention relates to container linings, especially insulated linings for refrigerators. The object of the invention is to supplant as far as possible, the use of the special woods that are necessary for the interiors of refrigerators.

One of the places on the refrigerator where my invention is of special adaptability is the stepped inside portion of the refrigerator doors. These stepped portions are ordinarily made of wood, which is mitered together at the corners. With an enameled refrigerator it is customary to use a trowel to coat the inside of the refrigerator with a coat or layer of stonework, usually with what is called oxo-chloride cement. However, this in no way does away with the wooden stepped portion which is built up of layers of special wood. These are usually painted white with enamel paint. However, the first place where the enamel chips off is at the corners of the stepped portion of the door. Moisture gets in at the joint, swelling and opening of the joint takes place and the whole door begins to go to pieces and gets in a very unsanitary condition.

It is the object of the present invention in particular to construct either a door interior out of hollow stonework or else to construct the entire door out of the hollow stonework. Where the entire door is constructed out of the hollow stonework, preferably, there is interposed a wooden insulating strip which largely prevents the conduction of the heat from the outside to the interior. It will be evident that other parts of the refrigerator can be constructed on the same broad principles or plans by varying the details to adapt them to the changed conditions. I therefore, in some of the claims, have so worded the claims that they cover broadly a container construction, whether on the door or on the other portions of the container. Other claims are limited specifically to the construction of the door.

In the drawing:

Fig. 1 is a front elevation of the refrigerator.

Fig. 2 is a fragmentary section taken on the line 2—2 of Fig. 2 showing the door tile and a wooden door panel.

Fig. 3 is a perspective of the door tile after it has been cast.

Fig. 4 is a fragmentary detail of the mold showing how the bolt anchoring bushings are supported in the mold during the casting operation.

Figs. 5 and 6 are fragmentary details showing a modified form of construction in which the door panel and the door lining tile are separate stone castings, connected by a wooden insulating strip.

Fig. 7 is a modified form of construction in which the whole door is a single casting in which is used a core of insulating material.

The refrigerator casing may be constructed of wood, or other suitable material. The doors as shown in Fig. 1 have panels *b* that are wood. Instead of building up a step construction of special woods as has heretofore been the almost universal practice in refrigerator construction, I employ a door lining tile *c*, which is a casting. This casting has the same step configuration as has been used with a wooden door lining. The casting is made of some concrete or some other cementitious mixture, but preferably, of a compound known as oxo-chloride. This is cast in a mold under great pressure, upwards of 900 lbs. For instance, the mold is closed except for the air vent holes; the plastic oxo-chloride composition or other concrete mixture is shot into the mold under a very heavy pressure induced by a pump. This, of course, ejects the plastic material through the vent holes and when the plastic mixture has reached the vent holes, I then plug the vent holes, then continue the pressure and leave the contents of the mold under this pressure for some time. The pressure is then withdrawn and the composition allowed to securely set.

I have described and claimed in my two co-pending applications how the mold is lined with paraffine to facilitate the removal of the casting, and how also a finishing

coating can be simultaneously cast on to the exterior of the moulded article. These applications are respectively, Nos. 622,771, filed March 5, 1923, and 625,123, filed March 14, 1923.

On the interior of the tile are cast a plurality of bosses *d*, in which are held the bushings *e*, preferably of brass, used to anchor the bolts *f* for screwing the panels to the lining tile. In Fig. 4 I have shown the drag *g* and the cope *h* of the molding flask. The cope is provided with a bolt *i* to take the bolt *j* which suspends the anchoring bushing *e* in the form of a core in the moulding space.

In Figs. 5, 6 and 7, I have shown a modified form of construction in which the outer panel is also cast of the same concrete or oxo-chloride material. Where the outer panel is cast of stonework as in Fig. 5, the screw anchors, such as the anchor *k* will have to be used for the application of the hardware such as hinges and latches. These screw anchors *k* can be held in the mold in precisely the same way as shown by anchor *e* in Fig. 4.

Preferably, where the exterior panel of the door and lining tile are both of concrete or stone, it is better construction to provide a connecting wooden strip *m*, dovetailed to the inner tile as shown in Figs. 5 and 6 and secured to the outer stone panel by screws *n*, as shown in Fig. 6. This provides a barrier for the conduction of heat from the outside atmosphere to the interior of the refrigerator to lower the efficiency of the refrigerator.

In Fig. 7, I have shown a door constructed of a single piece of stone work; an insulating material such as cork or wood, designoted *o*, can be used as a core in the mould. Preferably, the lining tile is covered with a coating of enamel.

It will be evident that the use of the lining tile is very advantageous in connection with enameling the interior of the door for obviously, the enamel may be a glass enamel or any enamel which is baked in ovens can be used with no deleterious effects for the lining tile. It will be evident that other portions of the refrigerator can be built up by similarly cast lining tile and with slight changes of construction, other portions of the refrigerator might be united to the lining tile or built in the same way as has been broadly indicated, in a modified construction. Hence, in some of the claims, I have referred to a refrigerator or container construction broadly without limitations to the doors.

In a construction shown in Fig. 7 the same hollow tile is used but here it happens to be secured to the outer panel by casting the outer panel and the inner tile together.

What I claim is:

1. In a container construction, the combination of an outer panel, and a stonework lining therefor, comprising a separate hollow tile secured to the outer panel.

2. In a container construction, the combination of an outer panel, and an inner lining therefor of stonework comprising a separate hollow tile construction secured to the outer panel and enameled on its interior face.

3. In a container construction, the combination of an outer panel and a lining therefor, comprising a tile having a bolt receiving bushing cast therein, and a bolt passed through the outer panel and screwed into the said anchoring bushing.

4. In a refrigerator door construction, the combination of an outer panel, a hollow stepped cast tile of stonework and means for securing the tile to the outer panel, there being an intervening strip of insulating material between the exterior panel and the said tile.

5. In a refrigerator door construction, the combination of an outer panel, a lining in the form of a stonework tile of hollow interior construction, and means for securing the tile to the door, the stonework construction provided with one or more tapped bushings for the purpose of receiving necessary screws.

6. In a refrigerator construction, the combination of an outer wall and a lining in the form of a stonework detachably secured to the outer wall and hollow on its interior.

7. In a refrigerator construction, the combination of an outer panel in the form of a molded stonework, and a lining in the form of a tile of stonework hollow on its interior, and an intervening insulating strip between the outer stone panel and the inner stone panel.

In testimony whereof I affix my signature.

LLOYD G. COPEMAN.