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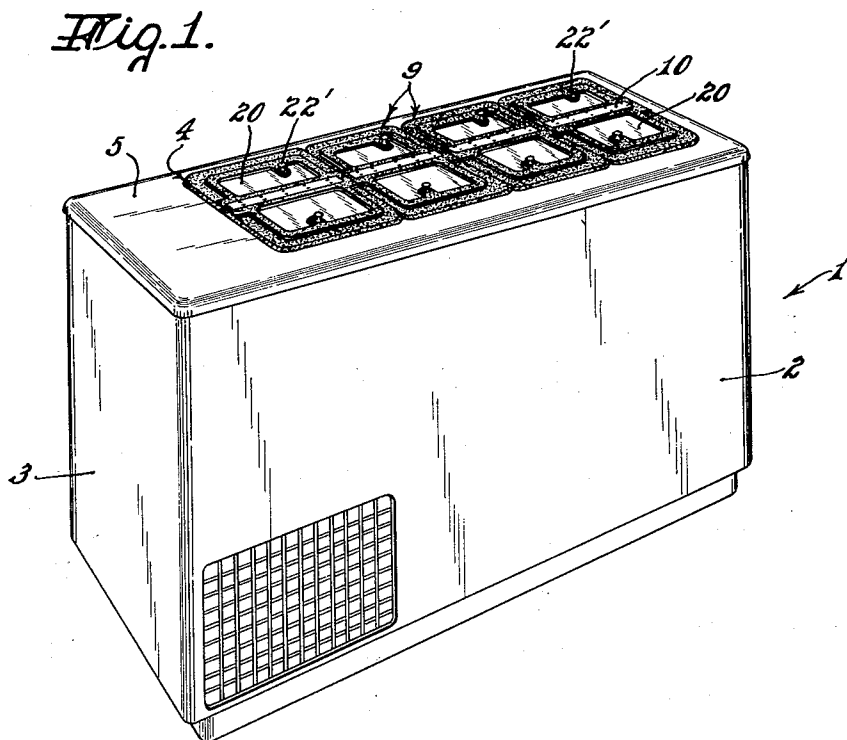
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INSULATED DOOR FOR REFRIGERATED CABINETS

Filed Dec. 29, 1947

4 Sheets-Sheet 1



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4 Sheets-Sheet 2

Fig. 2.

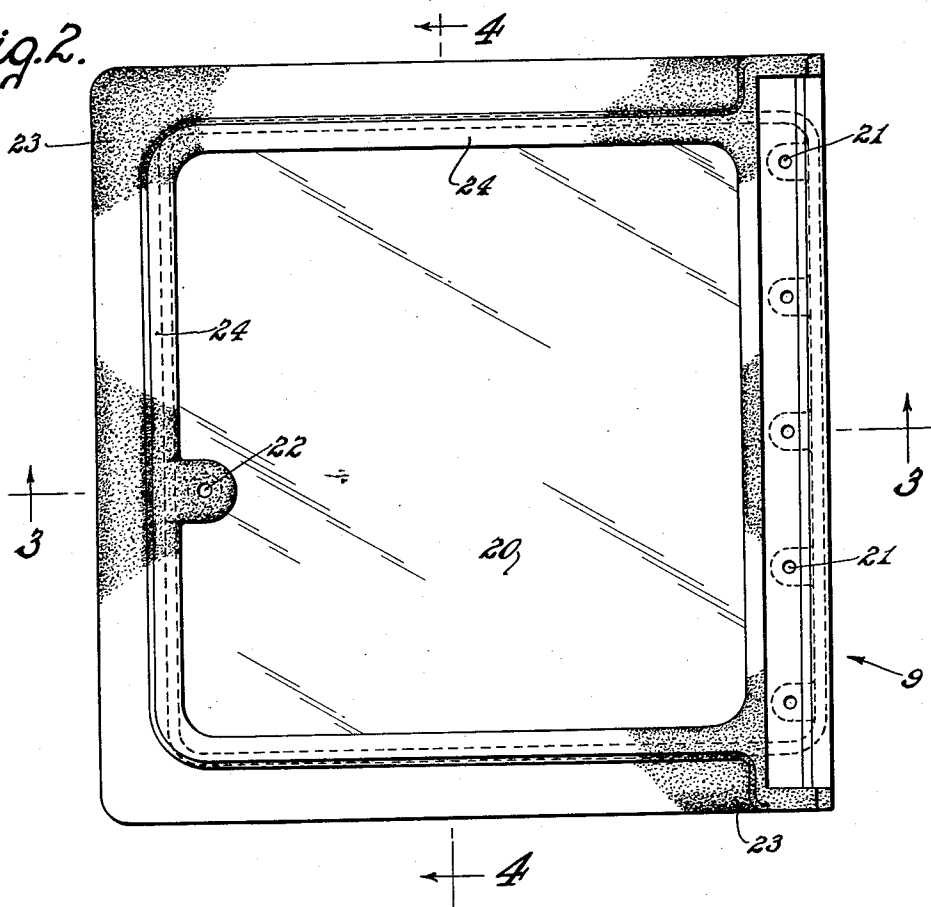
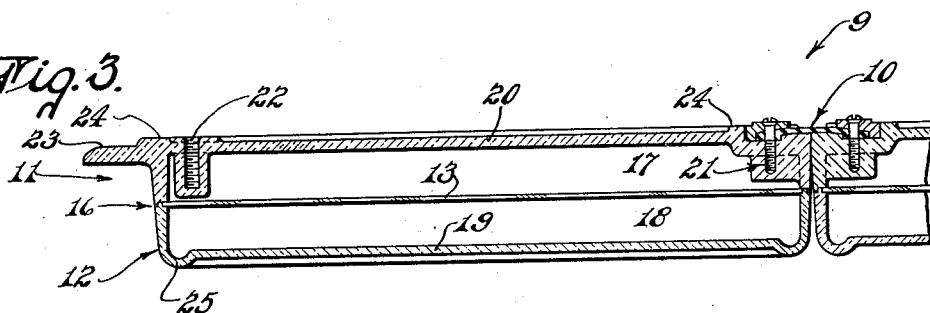


Fig. 3.



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4 Sheets-Sheet 3

Fig. 5.

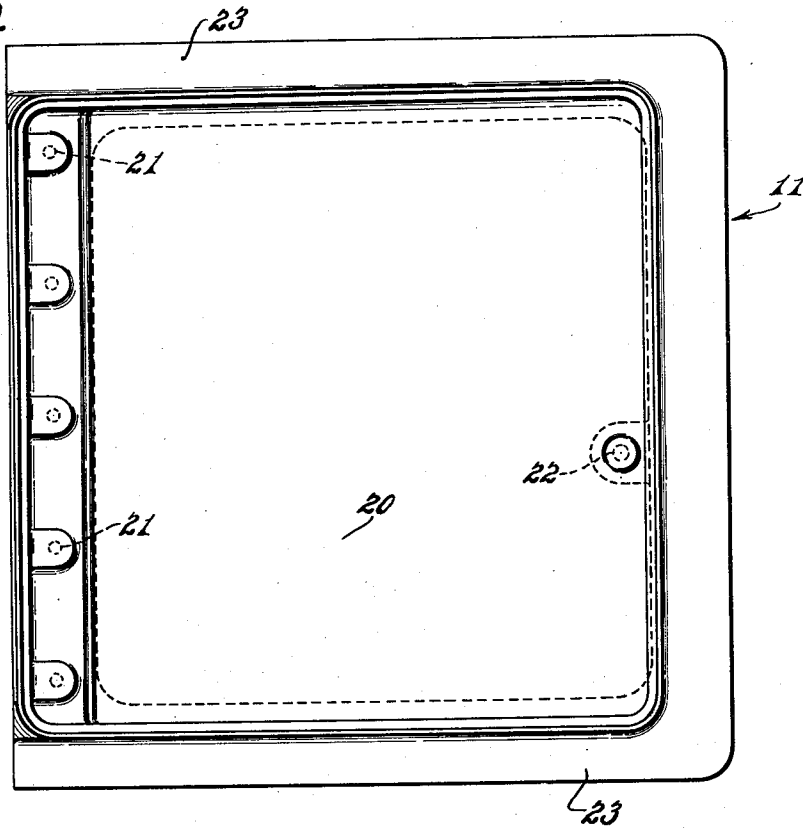
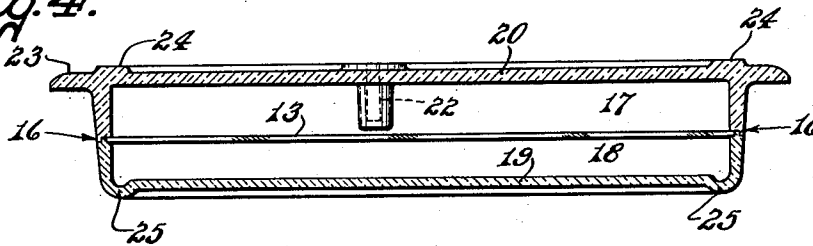


Fig. 4.



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INSULATED DOOR FOR REFRIGERATED
CABINETS

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1 Claim. (Cl. 220—30)

1

This invention relates to a wall construction particularly useful for a lid, a door, or a window for low temperature, refrigerated cabinets.

In food storage cabinets of the type composed of vertical insulated walls and having a horizontal opening for access to the interior thereof, it is often desirable to see the top contents of the cabinet without raising the lid covering the access opening.

Likewise it is often desirable to see the contents of a refrigerated room or large cabinet without opening the door leading therein.

It is therefore an object of this invention to provide a new and useful insulating wall structure having a transparent portion adapted for use as a lid for cabinets of the type permitting access through horizontal openings, or as a door for refrigerated cabinets of the "walk-in" type.

More particularly, it is an object of the invention to provide an insulating wall structure having two insulating spaces or cells therein, said cells being separated by a dividing partition, and the entire structure having only one joint connecting the top and bottom halves together. The advantages of a one joint construction include, in addition to simplifying the assembly of the parts, reducing the hazard of a poor joint with subsequent leakage of air, and reducing the number of joints which must be polished after assembly.

Other objects and advantages of this invention, it is believed, will be apparent from the following detailed description of a preferred embodiment thereof as illustrated in the accompanying drawings.

In the drawings:

Fig. 1 is a perspective view of a low temperature, refrigerated cabinet, having a lid structure embodying my invention;

Fig. 2 is a top plan view of one of the lids indicated in Fig. 1, as such lid appears when detached from its hinge, removed from the cabinet and stripped of its lifting knob or handle;

Fig. 3 is a sectional view of the structure illustrated in Fig. 2 taken along the irregular line 3—3 of Fig. 2, but showing in addition, the hinge attached and joining this lid to a companion lid as indicated in Fig. 1;

Fig. 4 is a sectional view of the structure illustrated in Fig. 2 taken on line 4—4 of Fig. 2;

Fig. 5 is a bottom plan view of the top section only of the lid structure of Fig. 2 as illustrated in Fig. 3;

Fig. 6 is an enlarged fragmental sectional view illustrating the construction of the hinge seat shown in Fig. 3; and

2

Fig. 7 is a perspective view of a cabinet similar in structure to that of Fig. 1 but broken open to illustrate more clearly the adaptability of the invention to refrigerator cabinet lid structure.

In the drawings, I have illustrated my invention as particularly adapted to an ice cream cabinet 1. It is, however, apparent that my invention is equally applicable to other types of food cabinets, the openings of which are closed by either lids or doors.

As illustrated, in Figs. 1 and 7 ice cream cabinet 1 is a substantially rectangular container having vertical side walls 2, end walls 3, and horizontal openings 4 in cabinet top 5. The walls 2 and 3 are formed of heat insulating material 6 (Fig. 7) interposed between inner and outer shells 7 and 8. Shells 7 and 8 are formed of sheet metal such, for example, as stainless steel, Monel metal, or the like. Cabinet top 5 is of similar construction as walls 2 and 3. Lids, or doors, 9 close horizontal openings 4 of the cabinet and it is to the construction of these lids or doors 9, that the present invention particularly relates.

Lids 9 in the cabinet illustrated are used in pairs, two lids being joined together as shown in Fig. 3 by a hinge structure 10 which may be of the conventional metal type or may be of the molded rubber type similar to that disclosed, and particularly described, in my Patent No. 2,526,129.

The new insulating wall structure of the present invention will be disclosed in the description of the structure of lid 9, which is comprised of a lid top member or section 11 (Figs. 3 and 6), lid bottom member or section 12 and a dividing member or partition 13.

Dividing partition 13 is preferably a flat sheet or slab of transparent material, for example plate glass or clear plastic. It is inserted between lid top section 11 and lid bottom section 12, fitting in partition retaining groove 14 (Fig. 6) where the top and bottom sections of the lid abut to form joint 16. The dividing partition 13 is secured, as by cementing, along its periphery at the same time and during the same operation in which the lid top section 11 is joined to the lid bottom section 12. Being of flat sheet form and so mounted as described, dividing partition 13 is easy to obtain commercially and requires no tooling operation.

Joint 16 in lid 9 is of the tongue and groove type, the lid top section 11 providing the groove, in cooperation with partition 13 as will be explained, and the lid bottom section 12 providing the tongue. The inner wall of the groove is pro-

3

vided by the peripheral edge of partition 13 and the upper margin of the partition 13 abuts lid top section 11 where the latter is cut away in its design to form partition retaining groove 14 in cooperation with partition 13. Dividing partition 13 abuts the tongue in lid bottom section 12, all as illustrated in Figs. 3 and 6.

Joining lid top section 11, lid bottom section 12, and dividing partition 13 at their common point of junction by joint 16 results in a wall structure containing insulating air spaces or cells 17 and 18 with only one joint connecting the component parts. Of course the abutting edges of lid top and bottom sections 11 and 12 must be well matched and smooth as joint 16 should be well cemented and sealed, particularly on its outside edge, to produce an airtight seal between inside air spaces in cells 17 and 18 and the outside air or atmosphere.

Bottom section 12 of lid 9 is preferably molded of clear, transparent plastic material in the shape illustrated in the several figures, with its broad plane surface 19 (Figs. 3 and 6) providing a maximum clarity of vision therethrough.

Top section 11 of lid 9 is preferably molded of similar material as bottom section 12 and having its transparent broad plane surface 20 (Figs. 2 and 3) of good visual quality. As illustrated in Figs. 2 to 6, top section 11 contains threaded holes 21 for securing the assembled lid 9 to hinge 10 shown in Figs. 1 and 3, and a threaded hole 22 for receiving lifting knob or handle 22' shown in Figs. 1 and 7. All holes in top section 11 are blind to prevent leakage of air in air space 17.

The upper edge portions 23 of top section 11 (Figs. 2 and 3) which border the clear transparent broad surface 20, are stippled or matted as indicated in Fig. 2. Except for these matted areas, the entire lid 9 is clear and transparent so that objects are readily visible through it.

It is to be noted that the transparent broad plane surfaces 19 and 20 (Figs. 3 and 4) on bottom section 12 and top section 11 of lid 9 are bordered by raised portions 24 and 25. Raised portion 24 on top section 11 is stippled or matted. These raised portions 24 and 25 tend to safeguard against marring or scratching of the flat clear plane surfaces 20 and 19 which would result in optical distortions and soon destroy the value of a transparent lid. Articles placed on lid 9 when the lid is in place in the position illus-

4

trated in Fig. 1, will tend to rest upon the raised matted portion 24 rather than on the flat clear surface 20. When a pair of lids is removed from cabinet 1, as for filling the cabinet, and piled with other lids on the floor or some nearby surface, raised portion 25 will serve as a protection for flat clear surface 19 as will raised matted portion 24 for flat clear surface 20.

Having fully disclosed my invention, what I claim is:

A door structure for refrigerated, low temperature, storage cabinets comprising an inner pan-shaped element having a transparent flat surface portion and a flange portion embordering and framing the same, a transparent flat element of sheet form and an outer transparent pan-shaped element substantially similar in structure and complementary in form to said inner pan-shaped element, hinge and handle attaching means on said outer element, said pan-shaped elements being in complementary position with their open areas oppositely disposed and joined together at their rim portions with the flat sheet held medially between the rims by a single continuous tongue and groove joint, the tongue of said joint being an integral part centrally of the rim of one pan-shaped element, the groove being located centrally of the rim of the other pan-shaped element with the peripheral edge of the flat sheet element providing the inner wall of said groove, said flat element being interposed between the two pan-shaped elements as a dividing partition to form two closed air cells, the three elements being closed and sealed together with the continuous tongue and groove joint to provide an insulated door structure with transparent portions of good visual quality framed by integral protective flanges.

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