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Lindenschmidt

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[54] **MULLION BUTTER CONDITIONING COMPARTMENT**

[75] Inventor: **Robert E. Lindenschmidt,** Evansville, Ind.

[73] Assignee: **Whirlpool Corporation,** Benton Harbor, Mich.

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[52] **U.S. Cl.** **165/30,** 62/377, 62/447

[51] **Int. Cl.** **G05d 23/19**

[58] **Field of Search** 165/30; 62/377, 419, 447, 62/441, 383

[56] **References Cited**

UNITED STATES PATENTS

2,311,549	2/1943	James	62/447
3,107,501	10/1963	Stickel	62/419 X

Primary Examiner—Meyer Perlin
Assistant Examiner—Ronald C. Capossela
Attorney, Agent, or Firm—Hofgren, Wegner, Allen, Stellman & McCord

[57] **ABSTRACT**

Refrigeration apparatus having a butter conditioning and storage compartment in a separator wall that separates the above freezing refrigerated compartment from the below freezing storage compartment with the butter compartment arranged to receive refrigeration from the above freezing compartment together with heating means for heating the butter compartment to a desired conditioning and storage temperature. The disclosure also includes the provision of auxiliary heating means for the butter compartment operating in conjunction with condensate preventing heating means normally provided at the outer shell of the refrigerator in the vicinity of the separator wall that separates the above freezing and below freezing compartments.

10 Claims, 2 Drawing Figures

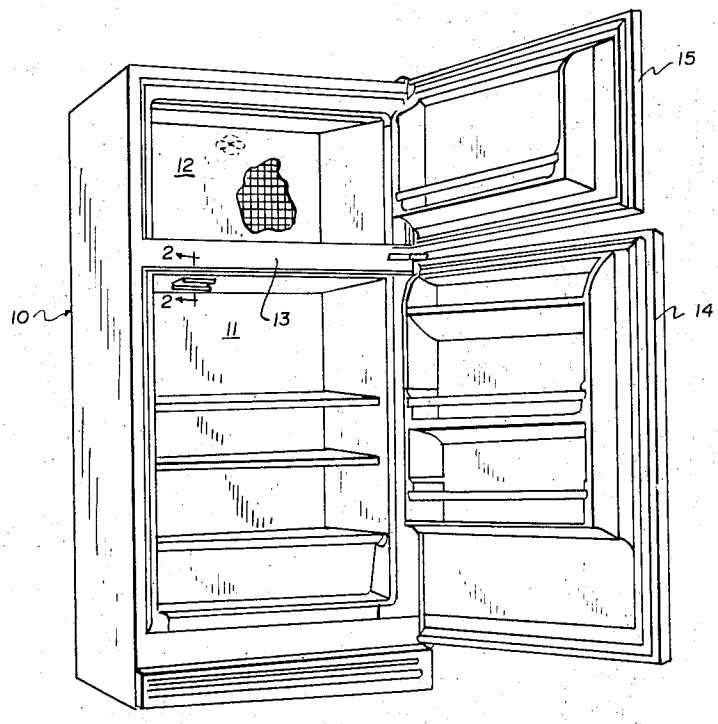


FIG.1

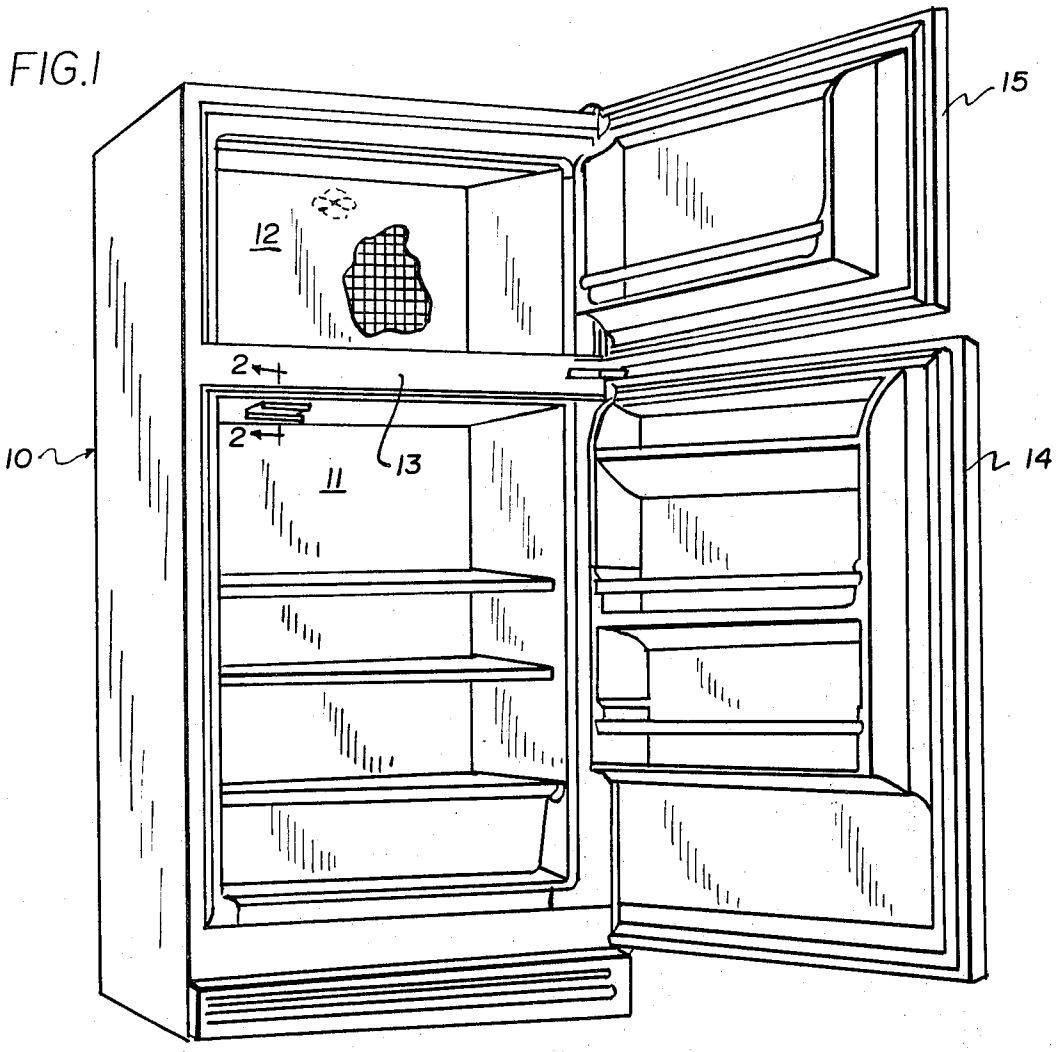
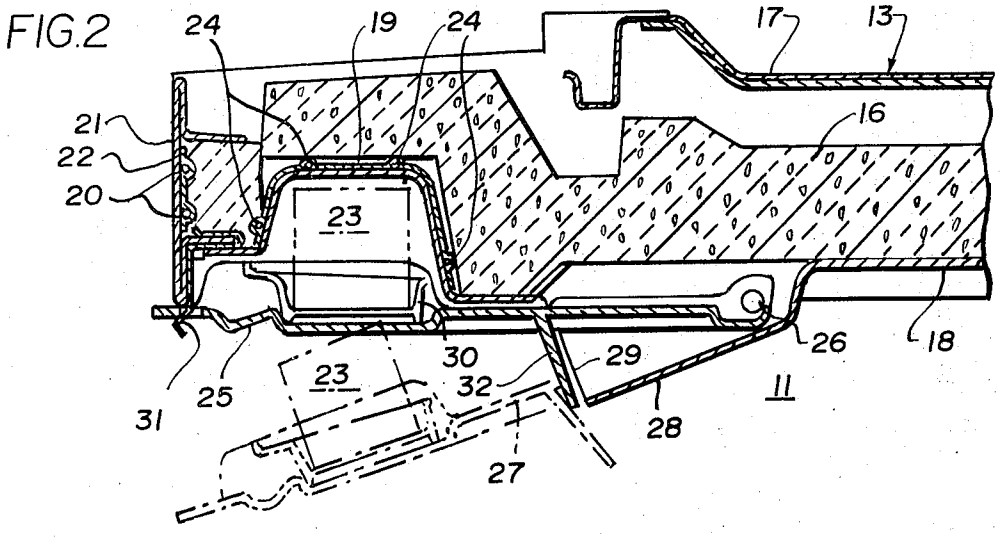

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FIG.2


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MULLION BUTTER CONDITIONING COMPARTMENT

BACKGROUND OF THE INVENTION

One of the features of this invention is to provide in a refrigeration apparatus a butter conditioning and storage compartment positioned in the separator wall dividing the freezer from the refrigerator together with heating means for maintaining the butter compartment at the desired temperature.

Another feature of the invention is the provision of such an apparatus in which the butter compartment is located adjacent the external shell defining the outside of the separator wall between the freezer and refrigerator so that the butter compartment can receive heat from the customary heater used to prevent moisture condensation on the outer surface of this shell.

The most pertinent prior art of which applicant is aware are U.S. Pats. Nos. 2,311,549 and 2,317,816. These patents, however, do not disclose the invention disclosed and claimed here.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an elevational view partly broken away of a refrigeration apparatus embodying the invention.

FIG. **2** is an enlarged fragmentary sectional view taken substantially along line **2-2** of FIG. **1.**

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the embodiment disclosed in the drawings the refrigeration apparatus **10** is a combined refrigerator and freezer with the above freezing storage compartment or refrigerator **11** being separated from the top below freezing storage compartment or freezer **12** by an insulated separator wall **13.** Each refrigerator compartment **11** and freezer compartment **12** is provided with a hinged access door **14** and **15,** respectively, with these doors being shown in open positions in FIG. **1.**

As can be seen in the enlarged fragmentary horizontal section of FIG. **2** the separator wall **13** is provided with insulation **16** and has a top shell **17** and a bottom shell **18.**

Located in the separator wall **13** is a butter conditioning and storage compartment means **19,** hereinafter identified as a butter compartment, and this compartment is in heat exchange relationship through and around a closure **25** with the refrigerator **11** to be chilled thereby.

In order to maintain the interior of the butter compartment **19** at the desired temperature it is provided with heating means illustrated by the resistance wires **20.** These heater wires **20** are located at the external shell **21** of the separator wall and are of the type customarily used to prevent moisture condensation on the outer surface of the shell. The means **22** for mounting the heater wires **20** on the shell **21** also mount the wires in close proximity to the butter compartment **19** so that the compartment and the butter **23** which is here shown as a customary quarter pound stick can receive heat from these heater wires **20.** If additional heating is required or desired, the compartnent **19** itself can include its own resistance heating wires as illustrated at **24.**

The butter compartment **19** has its outer end adjacent the refrigerator access door **14** so that the opening

of the door **14** immediately provides access to the butter compartment and its bottom closure door **25.** The butter compartment door **25** is hinged at the rear about a hinge pin **26** and is movable from the closed position shown in FIG. **2** to the open position **27** shown in broken lines in FIG. **2** by moving the door about a relatively small angle.

The extent of opening movement of the door **25** is limited by a scoop-shaped stop **28** with an open front **29** with the result that when the door **25** is in its lowermost position the butter **23** and the removable tray **30** on which it rests is readily accessible from the front of the refrigerator. When the butter compartment door **25** is in its raised closed position where it is held by a steel spring retainer **31** the open front **29** of the stop **28** is concealed behind a masking flange **32** on the door **25.**

As can be seen from the above description, the butter conditioning and storage compartment of this invention has a number of very important advantages. Thus it provides for storage of butter at a desired temperature by using the heating means normally provided in a refrigeration apparatus of this type. It also provides a butter compartment without reducing the storage space of the refrigerator by using space normally occupied by insulation. Also, if additional heat should be required to maintain the proper temperature in the butter compartment this is easily achieved as by the heating wires **24** and this auxiliary wiring is conveniently adjacent to the existing refrigerating wiring such as that shown at **20** with the result that no expensive wiring modifications or extensions are necessary. If desired, this construction provides a ready adaptability to added louvers for directing low temperature air into the compartment for storing the butter in a hard condition for maximum storage life if such should be desired.

Another advantage of this construction is that substantially all the parts except the metal spring retainer **31** can be made of molded plastic that may be snapped together.

Having described my invention as related to the embodiment shown in the accompanying drawings, it is my intention that the invention be not limited by any of the details of description, unless otherwise specified, but rather be construed broadly within its spirit and scope as set out in the appended claims.

The embodiment of the invention in which an exclusive property or privilege is claimed is defined as follows:

1. Refrigeration apparatus, comprising: an insulated cabinet defining an above freezing refrigerated compartment, a below freezing storage compartment and an insulated separator wall therebetween having an external shell; a first access door normally closing said above freezing refrigeratd compartment; a second access door normally closing said below freezing storage compartment; a butter conditioning and storage compartment means in said separator wall in heat exchange relationship into said refrigerated compartment to be chilled thereby; and heating means for heating said butter compartment.

2. The apparatus of claim **1** wherein said separator wall is essentially horizontal, said butter compartment is located in the bottom of the wall and there is provided a butter compartment closing door with mounting means for opening said butter compartment door downwardly.

3. The apparatus of claim 2 wherein said butter compartment door has one end adjacent said first access door and an opposite end remote therefrom with hinge means provided at said opposite end for permitting downwardly opening movement of said butter compartment door.

4. The apparatus of claim 3 wherein said butter compartment and door are positioned adjacent to said first access door, thereby providing ready access to the refrigerated compartment and butter compartment simultaneously by way of said first access door.

5. The apparatus of claim 1 wherein said butter compartment is located adjacent to said separator wall external shell and there are provided heating means at said shell for preventing substantial external condensation thereon and means mounting the heating means adjacent to said butter compartment to comprise also said heating means for the butter compartment.

6. The apparatus of claim 5 wherein there are provided auxiliary heating means in close thermal relationship to said butter compartment.

7. Refrigeration apparatus, comprising: an insulated cabinet defining an above freezing refrigerated compartment, a below freezing storage compartment and an insulated separator wall therebetween having an external shell; a first access door normally closing said above freezing refrigerated compartment; a second access door normally closing said below freezing storage compartment; a butter conditioning and storage compartment means in said separator wall in heat exchange relationship into said refrigerated compartment to be chilled thereby; a butter compartment closing door with mounting means for opening said butter compartment door downwardly; and support means on said compartment closing door for supporting said butter.

8. The apparatus of claim 7 wherein said support means comprises a butter tray.

9. The apparatus of claim 8 wherein said butter compartment door has one end adjacent said first access door and an opposite end remote therefrom with hinge means provided at said opposite end for permitting downwardly opening movement of said butter compartment door and wherein said butter compartment and door are positioned adjacent to said first access door, thereby providing ready access to the refrigerated compartment and butter compartment simultaneously by way of said first access door.

10. The apparatus of claim 8 wherein said butter compartment is located adjacent to said separator wall external shell and there are provided heating means at said shell for preventing substantial external condensation thereon and means mounting the heating means adjacent to said butter compartment to comprise also said heating means for the butter compartment and auxiliary heating means in close thermal relationship to said butter compartment.

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