

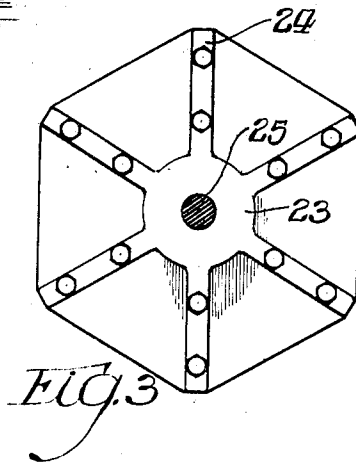
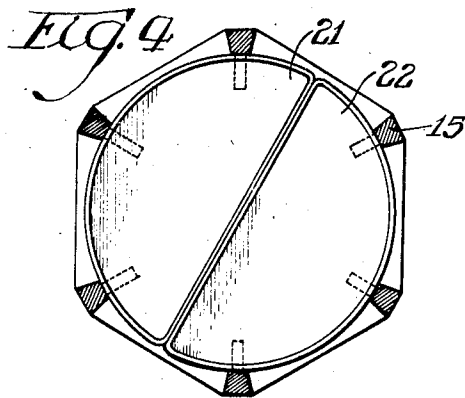
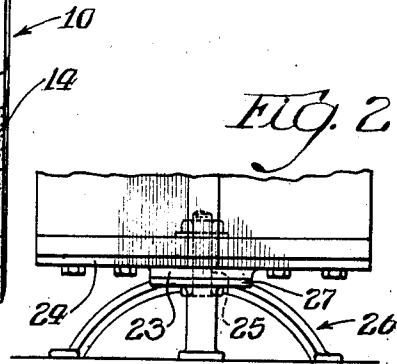
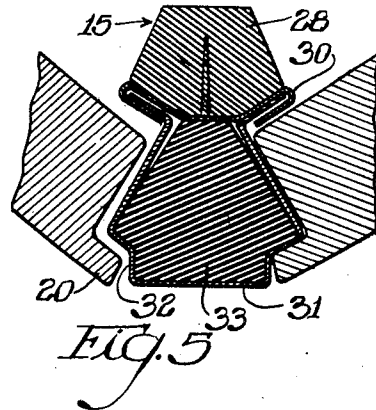
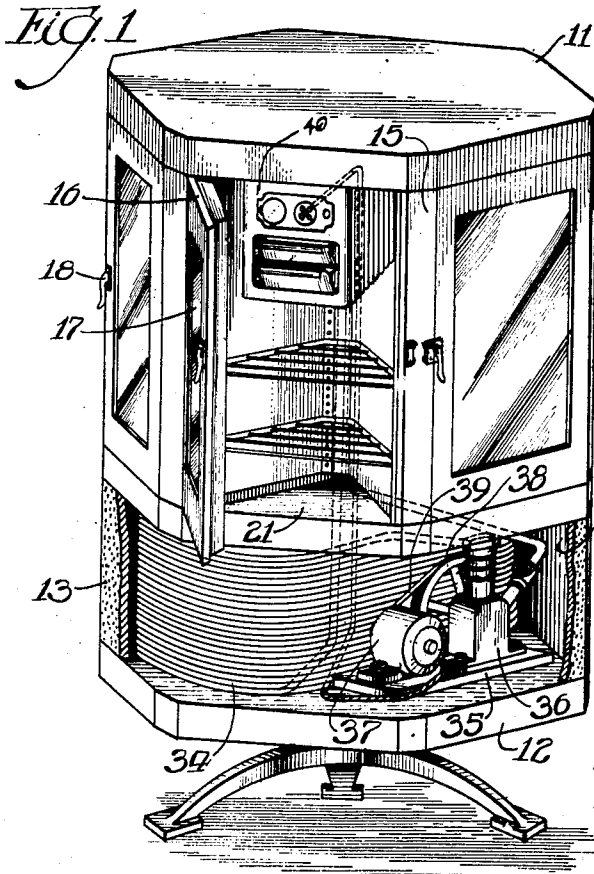
Oct. 25, 1932.

J. KOSMERL

1,883,961

PORTABLE REFRIGERATOR

Filed Nov. 16, 1931



Inventor  
Joseph Kosmerl  
By John F. Brezina, atty.

# UNITED STATES PATENT OFFICE

JOSIPH KOSMERL, OF LYONS, ILLINOIS

## PORTABLE REFRIGERATOR

Application filed November 16, 1931. Serial No. 575,249.

This invention relates to a refrigerator employing a circulating refrigerant as the cooling means and particularly to a refrigerator which is rotatable to permit access to the interior thereof from a plurality of side doors on substantially diametrically opposite sides of the refrigerator. My refrigerator is particularly adapted for use where the space is very limited, in display windows or wherever a neat appearing and compact refrigerator is required having a maximum capacity for food and the like.

My preferred invention is a modification of the invention described and claimed in my Letters Patent No. 1,282,241 dated October 22, 1918 and employing in addition to said former invention certain highly improved features of construction and highly efficient means for circulating a refrigerant through coils and employing means for compressing an evaporated refrigerant to liquid form.

A further object of my invention is the provision of a compact refrigerator which is rotatably mounted upon a standard to permit convenient rotation of the refrigerator to selectively present various doors about the sides thereof to the user.

A further important object of my invention is the provision of a compact refrigerator which is rotatably mounted on an attached standard and which includes a refrigerant system employing coils, refrigerant reservoir, and compressor, which constantly evaporates refrigerant and selectively compresses the refrigerant vapor to its original liquid state.

A further important object of my invention is the provision of a refrigerator which is rotatably mounted upon a suitable base and which refrigerator has a plurality of diametrically opposite side doors to permit convenient entry to different parts of said refrigerator through various doors which may be selectively presented to the user.

A further important object of my invention is the provision of a rotatable refrigerator having a plurality of diametrically opposite side doors and having yieldable and compressible vertical door stop members to effect a proper seal between it and said doors.

A further object of my invention is the pro-

vision of a refrigerator having a plurality of upright door stop members, each of said members comprising a metal housing having yieldable sides to effect proper sealing with the doors.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawing.

This invention (in a preferred form) is illustrated in the drawing and hereinafter more fully described.

On the drawing:

Fig. 1 is a perspective view of my refrigerator showing one of the doors open and having one of the lower outer walls broken away showing the compressor and coil comprising a portion of the refrigerator system.

Fig. 2 is a reduced fragmentary side elevational view showing the base and the means whereby the refrigerator is rotatably mounted thereon.

Fig. 3 is a bottom plan view showing the bearing plate for rotatable mounting and supports for the refrigerator casing.

Fig. 4 is a cross sectional view taken through the refrigerator immediately above the floor of the food compartments.

Fig. 5 is an enlarged detail view in cross section of one of the upright door stop members and showing the relative position of the edge of a door on each side thereof.

As shown on the drawing:

The reference numeral 10 indicates a refrigerator casing of substantially hexagonal cross section and having a top 11 and bottom 12 forming a part thereof. The walls of the casing top 11 and bottom 12 may be made of either wood or metal and are insulated by a well known insulating material 13 which is placed between the outer casing wall and an inner metal shell 14 to provide a refrigerator which will maintain a substantially low temperature therein and which will be efficient in operation.

The shape and construction of my refrigerator is especially designed to provide a refrigerator suitable for household and display purposes and which provides means for convenient access from the various sides of

the refrigerator. The upper portion of each of the sides of the casing 10 is constructed to form door openings, upright members 15 separating adjacent door openings and extending from the bottom 12 to the top 11 to form a part of the door frame and to support the casing top 11. Each of the upright members 15 are of the novel construction shown in cross section in Fig. 5 and will be described in detail hereinafter. The refrigerator casing may be made with a door opening in each side as shown in Fig. 1 or may be constructed so that some of said openings will be permanently sealed by an insulated panel.

A door 16, preferably made of metal and having a double glass window pane 17 mounted therein, is hingedly mounted to one edge of an upright member 15 to open to the left, while the adjacent door 16 is mounted to the second uprights from that holding the first door so that both doors will close against opposite sides of the same upright member 15, as shown in detail in Fig. 5. The frame of each of the doors 16 has an integral peripheral flange 20 which is adapted to overlap and engage suitable recesses in the respective upright members 15 and in the upper and lower edges of the casing wall 12. A lock 18 of standard construction is secured on the opening edge of each of the doors 16 and is adapted to engage a suitable metal hook secured on each of the upright members 15, as clearly shown in Fig. 1.

The refrigerator casing 10 is divided into one upper and one lower compartment by a horizontal metal partition wall which has its edges secured to the inside of the walls of the casing 10, the lower compartment being of much smaller size than the upper and of sufficient size to house the mechanical refrigeration apparatus comprising an evaporation coil, compressor, motor, etc., which will be described hereinafter. Fig. 1 shows a portion of the outer wall broken away to show the relative positions of the refrigeration apparatus mentioned.

A pair of semi-circular metal trays 21 and 22 are removably mounted on suitable inwardly extending lugs secured on the inside of each of the upright members 15, said trays being clearly shown in Fig. 4, which is a cross sectional view of the refrigerator immediately above the trays. The trays 21 and 22 may be of greater number and of other shapes which, when assembled, will form a circle, but I have found that by making two they efficiently serve as receptacles for food or the like and are quickly and conveniently removable through one of the doors 16. It is to be understood that there is ample space between the trays 21 and 22 and the walls of the casing 10 whereby the air may circulate from and to the cooling apparatus in the lower compartment of the refrigerator.

So that the user may gain access to any side

of my refrigerator without the necessity of walking around it, I provide means whereby said refrigerator is rotatably mounted with respect to the floor or other support, a modified form of said means being described and claimed in detail in my United States Letters Patent No. 1,282,241 dated October 22, 1918.

As shown in Figs. 1, 2 and 3, the refrigerator casing has secured by bolts on the bottom thereof a bearing plate 23 having integral radial arms 24, each of said arms extending to one corner of the casing 10 as shown in Fig. 3. The bearing plate 23 has a central aperture 25.

The preferred form of construction employed in the preferred form of my invention comprises a base 26, comprising a central horizontal portion 27 which has a plurality of integral radial legs and has mounted therein a short vertical post (not shown) which is threaded at its upper end and projects through the aperture 25 in the bearing plate 23 and through the bottom of the casing 10. A nut (not shown) is threaded on the post inside of the bottom of the casing 10, said post forming a king bolt whereby the casing 10 and attached parts are revolvably attached with respect to the base 26.

Fig. 5 is an enlarged detail view of one of the upright members 15. Each of the upright members 15 comprises a wooden strip 28 having a substantially oval face on which is secured by a plurality of screws 29 a channel member 30 which is bent to conform to the oval face of the strip 28 and which has its edge flanges turned back upon itself as shown in Fig. 5. The remainder of the member 15 comprises a metal shell 31 made of a non-corrosive sheet metal which is trapezoid in cross section and which has its edges bent perpendicularly to its sides. The metal shell 31 also has grooves 32 formed in its two forward corners for reception of the flanges 20 of each of the doors, and the flanged edges of said shell 31 are adapted to be inserted under the flanged edges of the channel member 30 where they remain in movable engagement to permit yielding of the sides of the metal shell 31 when the respective doors are closed thereagainst.

A rubber strip 33 or other resilient material is placed within the shell 31 to permit ample resilience of the side walls of the shell 31 when the doors are closed thereagainst.

The cooling apparatus which I employ is of standard construction and of the type using an evaporating refrigerant. As shown in Fig. 1, it comprises a continuous tube coil 34 which is divided into high and low pressure portions, the high pressure portion being much shorter and separated from the low pressure section of the tube by a conventional expansion valve (not shown). Mounted on the base 35 in the lower compartment of my refrigerator is a standard compressor 36

and a motor 37, the compressor being driven by said motor through belt 39 which drives compressor wheel 38 to operate said compressor.

5 The high pressure section of the tube coil 34 is connected to the outlet side of the compressor chamber so that the compressed refrigerant may be directly driven thereinto. The compressed refrigerant slowly evaporates into the low pressure portion of the coil 34 which absorbs the heat from the low chamber. A portion of the coil 34 extends upwardly and into an ice cube box 40 which is mounted on the under side of the top 11 of the refrigerator, said box having ice cube trays therein of well known construction. Said coil portion encircles about the inside of said cube box and then extends downwardly to convey the refrigerant to the compressor to be compressed in a well known manner.

20 A suitable electric current control switch (not shown), which is operated at intervals when the temperature within the refrigerator reaches a minimum desired temperature, is actuable by means of a suitable thermostat within the refrigerator chamber, thereby providing means whereby a substantially constant and low temperature is maintained within the refrigerator.

30 It will be apparent that the refrigerator and the apparatus above described provides a highly efficient and satisfactory cooling unit which embodies the novel features described and claimed herein, and which provides a refrigerator which may be conveniently and quickly rotated so that various parts or compartments thereof may be presented within the view and quick access of the user.

40 I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted hereon otherwise than necessitated by the prior art.

I claim as my invention:

1. A refrigerator comprising a casing having a plurality of hinged doors; a base; means whereby said casing is rotatably mounted on said base; a refrigerating unit in said casing; a cooling unit in said casing comprising means for circulating an evaporating refrigerant, and a compressor for compressing the refrigerant vapor and for circulating the same.

2. A refrigerator comprising an insulated casing having a plurality of doors and compartments; a base; means whereby said casing is rotatably mounted on said base, and a refrigerating unit comprising an evaporating coil in said casing, a compressor, a refrigerant in said coil, and means to circulate said refrigerant, said refrigerating coil be-

ing adapted to absorb heat within said casing to regulate the temperature therein.

3. In a refrigerator, a base, an insulated casing rotatably mounted on said base, said casing having a plurality of doors and compartments, and a refrigerating unit in said casing comprising an evaporator coil, a compressor, a refrigerant in said coil, and means to circulate said refrigerant.

4. A refrigerator comprising a portable base; an insulated housing rotatably mounted on said base, said housing having a plurality of doors on opposite sides thereof; upright frame members between adjacent doors and forming a part of said housing, said members having yieldable outer metal walls adapted to snugly engage the door edges when the doors are closed.

5. A refrigerator comprising a portable base; an insulated housing rotatably mounted on said base, said housing having a plurality of doors on opposite sides thereof; said casing having a plurality of vertical frame members forming stops between adjacent doors, each of said members comprising an elongated hollow metallic shell adapted to yield when the edge of an adjacent door is closed thereagainst, and a resilient material in said hollow shell adapted to normally resist the inward pressure of the walls.

In testimony whereof I have hereunto set my hand this 15th day of October, 1931, in Chicago, Cook County, Illinois.

JOSIPH KOSMERL.

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