July 27, 1948. M. TATE 2,446,066

MIXING UNIT FOR REFRIGERATORS

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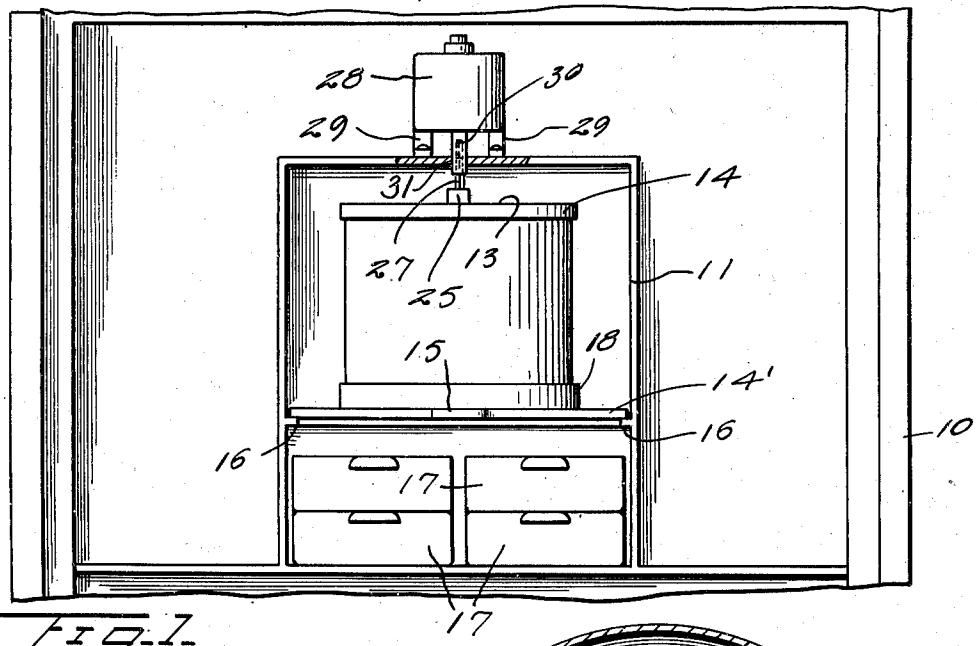


Fig. 1.

Fig. 5.

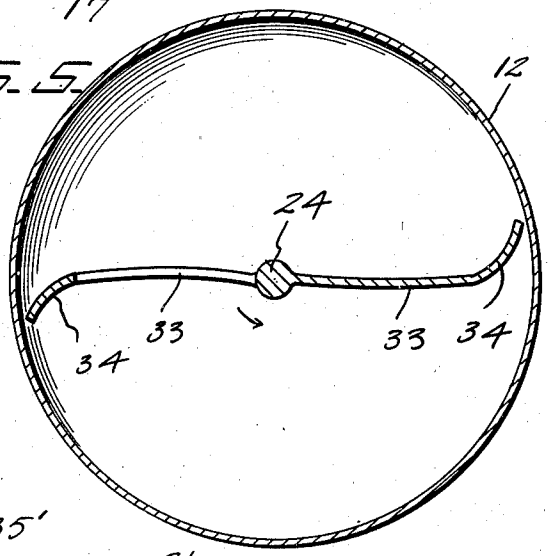
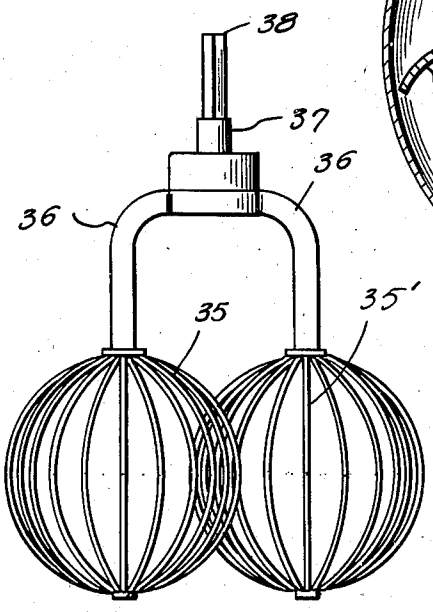


Fig. 7.



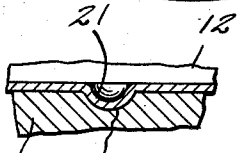


Fig. 6.

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Fig. 2.

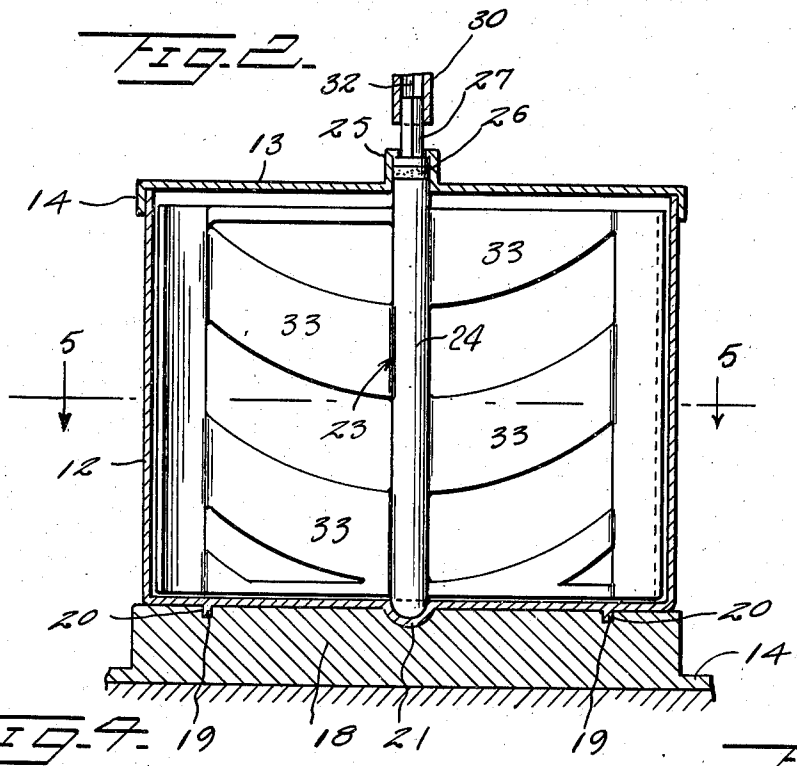


Fig. 4.

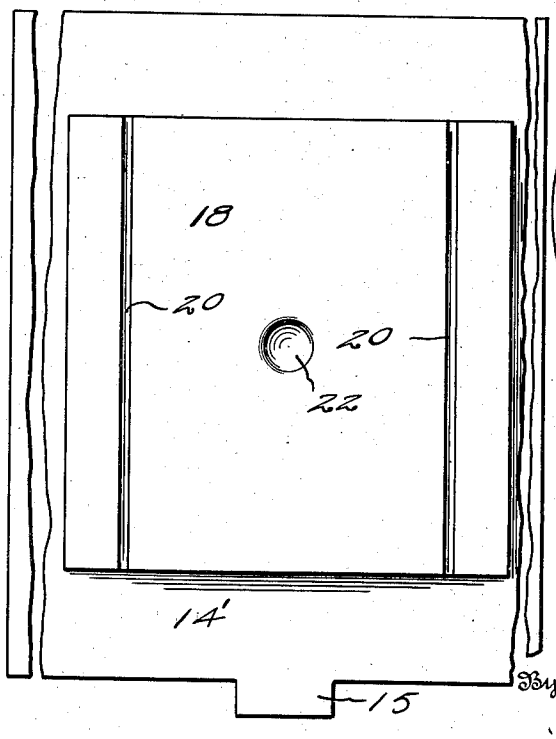
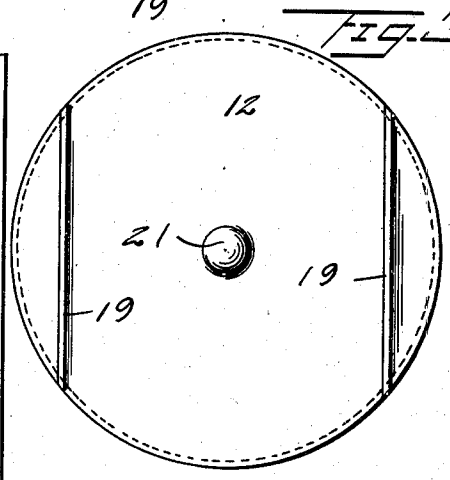


Fig. 3.



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MIXING UNIT FOR REFRIGERATORS

Merze Tate, Detroit, Mich.

Application December 23, 1943, Serial No. 515,411

2 Claims. (Cl. 62—114)

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This invention relates to a mixing unit for disposition and operation within the freezing compartment of an electric or equivalent refrigerator.

It is particularly aimed to provide a construction which is exceedingly simple, practical and relatively inexpensive.

More specifically, I aim to provide a unit in connection with the freezing compartment operated by a motor mounted by such compartment on the exterior and having a rotatable part extending through the top for driving connection with mixing apparatus and detachably engageable with such parts, and compactly mounted within the freezing compartment in such manner that available space may be used for various purposes.

The more specific objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment.

In said drawings:

Figure 1 is a fragmentary view of an electric refrigerator looking toward the front, with the refrigerating compartment open and equipped with my improvement;

Figure 2 is a substantially central vertical sectional view through my improvement;

Figure 3 is an inverted plan view of the container;

Figure 4 is a plan view of the supporting means for the container;

Figure 5 is a horizontal section taken on the line 5—5 of Figure 2;

Figure 6 is an enlarged detail section showing the indentation engagement between the base of the container and the support; and

Figure 7 is an elevation of a conventional type double rotary beater which may be used in the container or mixer.

A refrigerator is fragmentarily suggested in the drawings at 10, in which 11 is the conventional freezing compartment. This construction is to be considered as conventional as the invention is adaptable to any electric refrigerator or the equivalent.

Within the casing or housing of the freezing unit 11, I dispose a container 12 as compactly as desired and of any desired capacity, for instance, two quarts. It is clear that this container 12 may be made of glass, any desired plastic, metal or other material. It has a removable cover 13 of the same or different material as the container 12 and the cover has a depending rim 14 for surrounding engagement with the upper edge of the container.

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The container and associated parts are adapted to be mounted within the unit 11 in any suitable manner, but preferably on a removable shelf 14' which may have an extension or tongue 15 at the front to facilitate manipulation. This shelf 14' may rest and slide on ledges 16 arranged at any suitable elevation within the unit 11 and beneath the ledges 16, the space not actually used while the mixer is being used, may also be utilized for instance, to receive trays 17.

Upon the top of the shelf 14', I mount a mat or block 18, either permanently, or removably, upon which the container 12 rests and is held against rotation. This end is preferably accomplished by providing longitudinally extending ribs 19 on the under surface of the base of container 12, for removable engagement in grooves 20 in the upper surface of the mat or block 18. Additionally, a central depression 21 is provided in said base of the constainer which provides an exterior boss and a corresponding depression 22 to accommodate the boss, is provided centrally in the upper surface of the mat or block 18.

Within the container 12 I use a suitable dasher such as that disclosed at 23. This dasher has a central shaft 24 whose lower end is rounded and is journaled in the depression 21 as shown. Its upper end is journaled in a tubular bearing 25 provided on the cover 13, and which bearing permanently mounts packing 26 for engagement with the shaft 24. Such shaft has a squared extension or the equivalent 27.

Said dasher is adapted to be driven by a switch controlled electric motor 28 which is separate and additional to the equipment of the refrigerator, the same being of the cushioned and encased type with lifetime lubricant sealed within. The switch may be provided at any suitable location. This motor has brackets 29 mounting it on top of the unit 11 and its main shaft or an extension at 30 depends through a central opening 31 in the top wall of the unit 11 and has a square or other shaped socket 32 corresponding with the configuration of the extension 27. As a result of this construction, rotation of the shaft 30 by the motor 28 will rotate the dasher, while the container 12 is held stationary. The container may be raised sufficiently to disengage ribs 19 from the grooves 20 and the depression 21 from the depression 22, so that shelf 14' and block 18 can be withdrawn from beneath container 12 so that the container can be lowered to disengage the extension 27 of the dasher from

the socket **32**, and the units removed from the freezing unit. The reverse operation takes place in replacing the unit for a freezing, stirring or cooling operation.

Any preferred type of dasher **23** may be used. As shown, this dasher has blades **33** alternating from opposite sides thereof, so that spaces occur therebetween. It will also be noted that these blades are reversely curved inwardly at their free ends as at **34** in order to scrape effectively the inner wall of the container and give the material therein a centripetal motion.

It is to be understood that if the motor is removed, I may provide any suitable type of closure for the opening **31**.

In lieu of the dasher **23**, a double rotary beater of conventional form as disclosed in Figure 7, might be substituted. The beaters are shown at **35** journaled on vertical rods **35'** carried by an arch shaped support **36**, which includes a shaft portion **37** to fit the bearing **25** and be engaged by the packing **26** and also a squared extension **38** similar to that at **27** to function in the same manner.

It is clear that the unit is to be used for agitating any desired mixtures, for cooling them, or for making ice cream, sherbets, or the equivalent. The motor, as stated, is under switch control, and the temperature within the unit **11** is controllable by the usual mechanism in modern refrigerators. The dasher **23** may be made in a single piece and the curvature at **34** causes the blade to impart a centrifugal motion to the contents of the container as well as to scrape the same from the inner surface of the latter, preventing them prematurely freezing to the sides of the container, and the alternate arrangement of the blades and openings enables the whipping of mixtures at the center and beating in an upward direction.

The parts may be readily removed and replaced, and detached for washing and cleaning.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:

1. In combination with the freezing unit of a refrigerator, a support therein having a groove, a receptacle resting on the support and having a rib engaged in the groove, said receptacle having a depression exteriorly providing a boss, said support having a depression receiving the boss, a cover on the receptacle, a dasher within the receptacle having a shaft journaled in the first-mentioned depression, said shaft extending through and above the cover, a motor mounted on the exterior of the unit, said motor having a rotatable part extending through the top of the unit, and detachably engaged with said shaft to drive the same.

2. In combination with the freezing unit of a refrigerator, a support therein having a groove, a receptacle resting on the support and having a rib engaged in the groove, said receptacle having a depression exteriorly providing a boss, said support having a depression receiving the boss, a cover on the receptacle, a dasher within the receptacle having a shaft journaled in the first-mentioned depression, said shaft extending through and above the cover, a motor mounted on the exterior of the unit, said motor having a rotatable part extending through the top of the unit, and detachably engaged with said shaft to drive the same, said cover having a bearing engaged by said shaft, and said bearing having packing therein about the shaft.

MERZE TATE.

REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Name	Date
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