

Jan. 2, 1934.

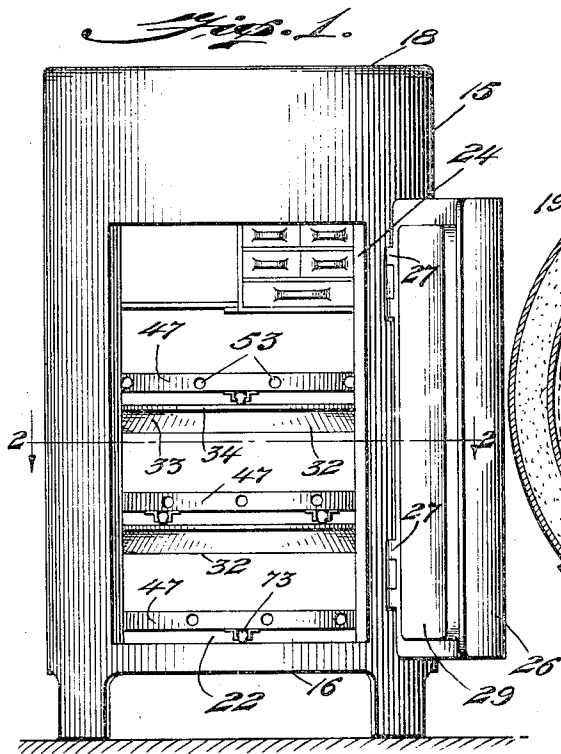
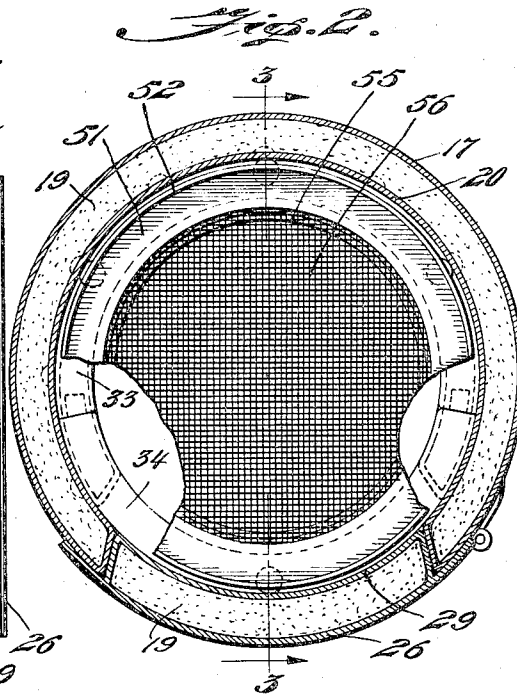
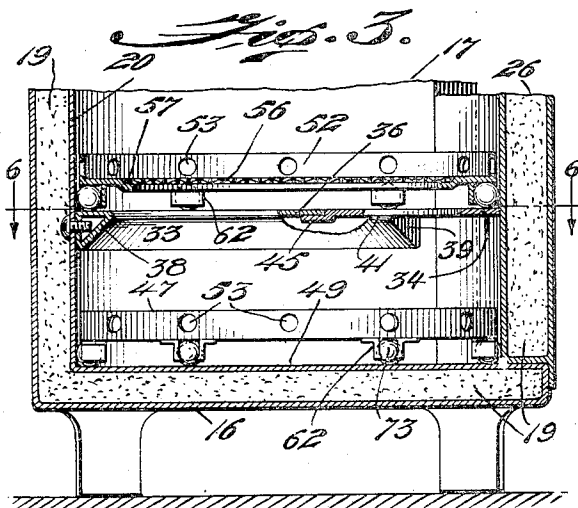
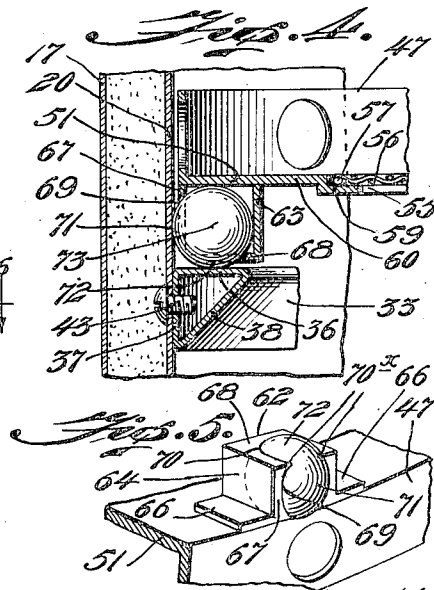
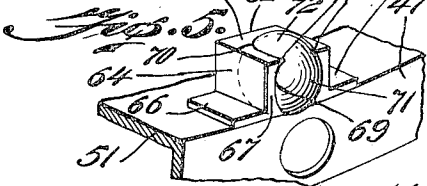
I. MARINSKY

1,941,906

REFRIGERATOR

Filed June 23, 1933

2 Sheets-Sheet 1



Inventor
Isaac Marinsky
By Horatio E. Bellows
Attorney

Jan. 2, 1934.

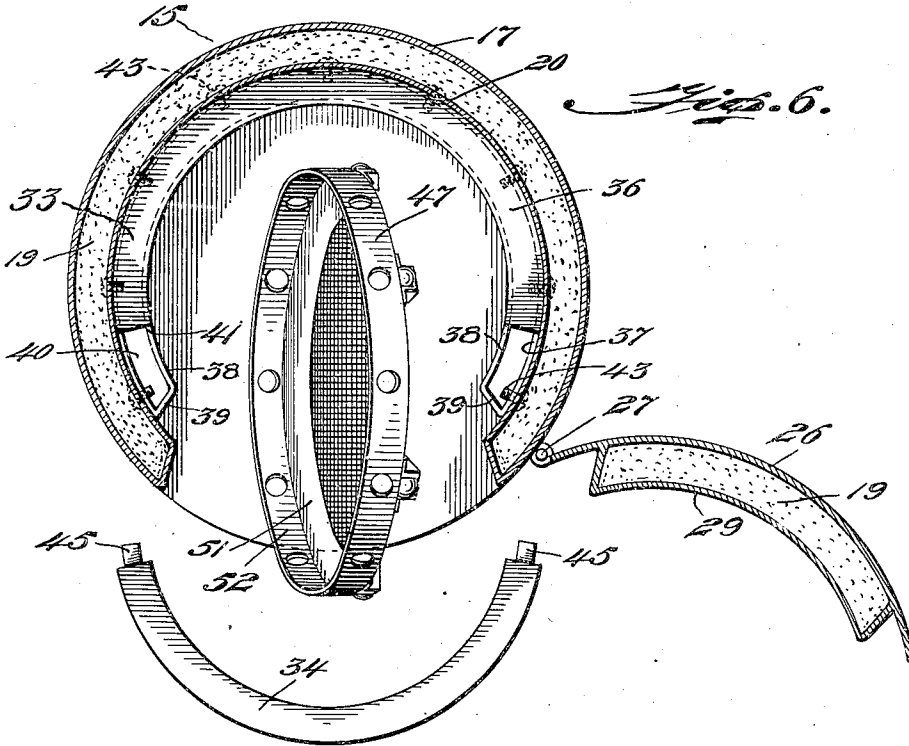
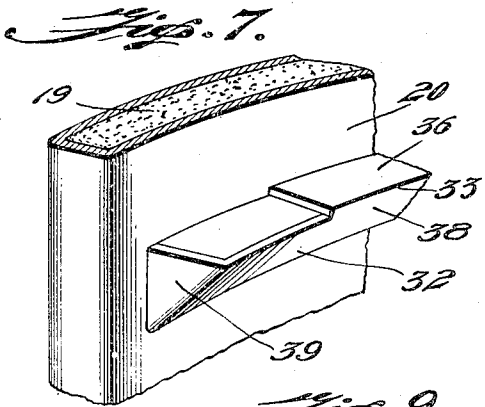
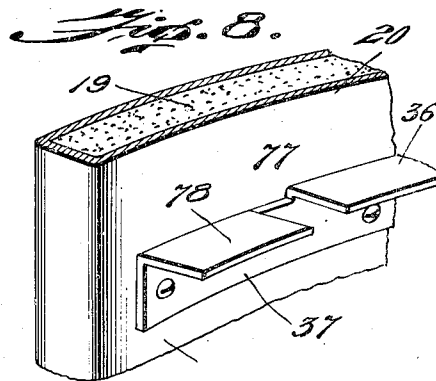
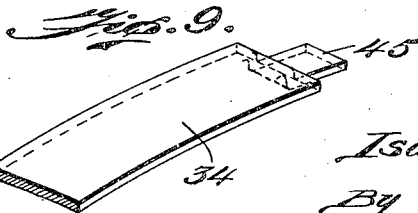
I. MARINSKY

1,941,906

REFRIGERATOR

Filed June 23, 1933

2 Sheets-Sheet 2



Inventor
Isaac Marinsky
By *Henatis E. Bellows*
Attorney

UNITED STATES PATENT OFFICE

1,941,906

REFRIGERATOR

Isaac Marinsky, Providence, R. I., assignor of
one-half to Samuel I. Cohen, Providence,
R. I.

Application June 23, 1933. Serial No. 677,237

6 Claims. (Cl. 312—183)

My invention relates to refrigerators and more particularly to cooling chambers and the accessories thereof.

An object of my invention is to utilize the anti-friction tray supporting balls for performing the additional function of spacing the tray from the cooling chamber wall.

Another object is to enable the removal of a tray from the chamber through a relatively narrow door, thus tending to prevent a lowering of the temperature of the chamber incident to a relatively larger door opening.

Further objects are to adapt the tracks for facile removal of the trays; to facilitate manipulation of the trays; and to prevent accidental tilting of the trays when the chamber door is open.

An additional object is to secure the above ends in a simple and inexpensive construction.

To the above ends primarily my invention consists in such parts and in such combinations of parts as fall within the scope of the appended claims.

In the accompanying drawings which form a part of this specification,

Figure 1 is a refrigerator of the electric type embodying my invention, the door being shown open,

Figure 2, a section on line 2—2 of Figure 1, the door being shown closed,

Figure 3, a section on line 3—3 of Figure 2 showing parts broken away,

Figure 4, an enlarged elevation of a fragment of the section shown in Figure 3,

Figure 5, a fragmentary perspective view of a reversed tray,

Figure 6, a horizontal section taken on line 6—6 of Figure 3, the door being shown open, a section of the track removed, and a tray being in position of removal,

Figures 7 and 8, two modified forms of track ends, and

Figure 9, a fragmentary perspective view of one of the track ends.

Similar characters of reference indicate similar parts throughout the views.

In the drawings 15 is the casing of an electric refrigerator of cylindrical form, of which 16 is the floor, 17 the cylindrical side, and 18 the top, all provided with suitable insulation 19, and including an internal cylindrical wall 20 constituting the side of a cooling chamber 22. The side 17 is provided with a rectangular opening 24 for the reception of a transversely curved insulated door 26 supported by hinges 27 and whose inner wall

29 is continuous with the wall 20 when the door is closed.

Integral with or attached to the wall 20 are interspaced annular tracks 32, in this instance two in number. Each track is of thin sheet metal and comprises two arcuate sections 33 and 34. The former is transversely triangular including a horizontal top wall 36, a depending back or attaching wall 37, and an inclined front wall 38. Both ends of each section 33 are closed by walls 39 which may be omitted without departing from the spirit of this invention. The ends of the top walls 36 are shorter than the walls 37 and 38 forming end orifices 40 and in conjunction with the exposed upper edges of the walls 37, 38, and 39, horizontal depressions or seats 41. An annular series of screws 43 attach each wall 37 to the chamber wall 20. The ends of the sections 33 are equispaced from the side of the door opening 24.

The section 34 of the track 32 is a flat arcuate plate of a thickness corresponding to the thickness of the wall 36. Integral with or fixed to the lower face of the plate centrally of each end of the latter is a lip or projection 45 constituting a downwardly offset horizontal longitudinally projecting portion. Normally the end portions of each plate 34 rest in the seats 41 with the terminal edges of the plate abutting the ends of the top wall 36 of its companion section, and with its upper face in the plane of the upper face of said wall to afford a practically unbroken bearing surface. The projecting portions 45 of the plate when in normal operative position abut against the lower face of the wall 36.

Supported on each track or run 32 is a circular tray or container 47 for food. Another like container is supported on the bottom 49 of the cooling chamber, as shown in Figure 3. Each tray comprises a circular base 51, and a vertical peripheral flange 52 provided with an annular series of finger holes 53 to facilitate manual rotation of the tray. The base is provided with circulation openings which may be of any preferred number, shape, arrangement, or construction. In this instance the openings 55 are the interstices of a circular sheet 56 of metallic mesh bound over a ring 57 resting in an annular depression 59 in the annular marginal portion 60 of the base 51.

A series of rectangular ball cages or sockets 62 are annularly arranged on the bottom of each tray base, each having a back wall 63 and side walls 64 from which extend lateral lugs 66 fixed by solder or otherwise to the lower face of the

container base, which constitutes the upper wall of the cage. The front and bottom walls 67 and 68 are provided respectively with curved recesses 69 and 70 merging with each other and forming resultant inwardly directed bearing prongs 70^x at the lower forward corner of the cage where the recessed walls converge.

Through the recesses 69 and 70 project respectively the segments 71 and 72 of an antifriction ball 73 which moves as a sliding fit in the cage walls, and is supported at its lower forward corner by the prongs 70^x. Since the front walls 67 of the cages are upon the margin of the tray bases the projecting ball segments 71, which contact with the cooler wall 20, serve to substantially space the tray from the latter. The ball segment 72 rolls upon the tops of the supporting tracks 32 or upon the cooler bottom 49.

If desired a modified form of track construction may be employed. For instance, as shown in Figure 7, the back wall 37 may be omitted, and the remaining track walls 36, 38, and 39 be formed integral with the cooler wall 20.

A further modified form of track, as shown in Figure 8, may omit the track wall 38, lower the height of the attaching wall 37 as at 77 near its end and add a horizontal forwardly directed lug 78 in a lower plane parallel with the plane of the wall 36. This lug forms the support for the segment 34 whose projecting portion 45 is adapted to engage the bottom of the wall 36.

In operation the trays are capable of being turned to any convenient position relatively to the doorway by insertion of the operator's finger in the openings 53.

The trays, which are of greater diameter than the door opening, may be removed by first detaching the track segment 34 from the section 33 which is effected by initially lifting the forward edge of the same to withdraw the projections 45 from engagement with the wall 36 and next laterally tilting the section to withdraw the same from the refrigerator casing. This affords room to laterally tilt the tray 47 to a position, such as shown in Figure 6, and withdraw it from the casing. The tilting operation and withdrawal of the tray would otherwise be impossible because of the necessary restricted space between adjacent trays and the relative narrowness of the doorway.

The presence of the arcuate section in its normal supporting position as a part of the track prevents a downward forward tilt of the tray under all conditions, and the entire track is firm and secure.

The double function in a single friction roll of both bearing upon the track and spacing the tray from the chamber wall enables the use of half the number of rolls to effect the same results, and at less expense than possible were the rolls positioned otherwise than in this structure.

I claim:—

1. In a refrigerating chamber, a cylindrical wall, an arcuate track section attached to the wall and including orifices adjacent its ends, an arcuate track section flush with the first section including portions resting upon said ends of the

first section and offset projecting portions extending into the orifices, a rotatable tray, and anti friction rollers upon the tray engageable with both sections.

2. In a refrigerating chamber, a cylindrical wall, an arcuate track section comprising a vertical back wall fixed to the cylindrical wall, an upwardly inclined front wall fast to the lower edge of the back wall, a top wall of less length than the back and front walls, an arcuate section adapted to rest upon the back and front walls flush with the top wall, and terminal projecting portions upon the second section offset therefrom for overlapped engagement with the top wall, and a tray rotatably mounted upon both sections.

3. In a refrigerating chamber, a cylindrical wall, an arcuate track section comprising an upwardly inclined front wall integral at its lower portion with the cylindrical wall, a horizontal top wall integral with the cylindrical wall and front wall and of less length than the front wall, an arcuate section resting upon the front wall flush with the top wall, downwardly offset forwardly projecting terminal portions upon the second section adapted to slidably engage the top wall, and a tray rotatably mounted upon the sections.

4. In a refrigerating chamber, a cylindrical wall, an arcuate track section comprising an upright portion fixed to the wall, a horizontal annular flange portion integral with the upright portion and shorter than the latter, horizontal bearing lugs upon the upright portion beyond the flange portion and in a plane lower than that of the flange portion, a detachable arcuate track section comprising portions resting upon the lugs, and projecting terminal portions overlapped by the flange portion of the first section, and a rotatable tray supported upon both sections.

5. In a refrigerating chamber, a cylindrical wall, an annular track upon the wall, a tray above the track, an annular disposed series of cages comprising side walls, lateral lugs upon the side walls fixed to the bottom of the tray, back walls integral with the side walls, front walls integral with the side walls, and bottom walls integral with the side walls and back walls, the front walls and bottom walls being provided respectively with curved recesses merging with each other and defining inwardly directed bearing prongs at the lower forward corners of the cage, and anti friction balls loosely retained within all the walls by the overlapping prongs, and having segmental portions projecting from the recess of the front wall in engagement with the refrigerator wall, and having segments projecting through the recesses of the bottom wall resting upon the tracks.

6. In a refrigerating chamber, a cylindrical wall provided with an opening, a door in the opening, an annular track comprising a section upon the wall provided with orifices in its ends, and a detachable section adjacent the door having portions extending into the orifices whereby it is supported by the first section.

ISAAC MARINSKY.