

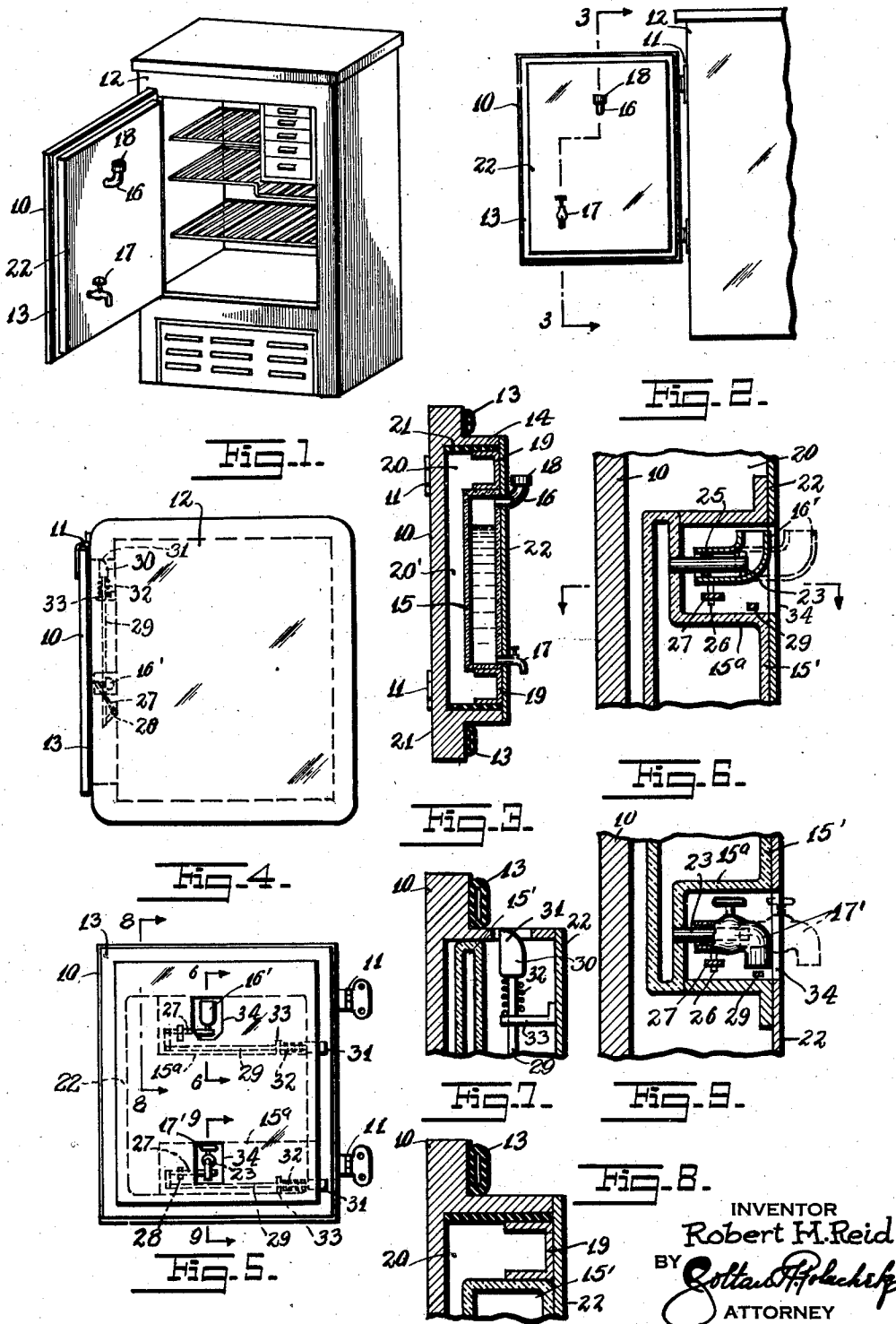
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REFRIGERATOR COOLING TANK FOR DRINKING WATER

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REFRIGERATOR COOLING TANK FOR  
DRINKING WATER

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## 11 Claims. (Cl. 62—89)

This invention relates to new and useful improvements in a refrigerator cooling tank for drinking water.

The invention has for an object the combination in conjunction with the door of a refrigerator, of a tank of sanitary non-corrosive material mounted within the door for receiving "cold" from the refrigerator, and the provision of means for filling the tank and emptying the tank with a liquid such as water.

Still further the invention particularly proposes the arrangement of a filler tube from the tank upon the inner side of the door.

As another object of this invention it is proposed to arrange a faucet upon the tank upon the inner side of the door for the discharge of the water.

Another one of the objects of this invention is the provision of a sheet metal material covering the inner face of the door of the refrigerator, and the arrangement of the water tank within the door behind said sheet metal so as to readily receive the "cold" from the refrigerator.

Still further another object of this invention is the arrangement whereby the filler tube and the faucet are movably mounted to positions within or outside of the inner surface of the door.

Still further the invention also proposes the arrangement of automatic means for moving the filler tube and faucet according to the previous paragraph, to an outward position when the refrigerator door is open, and to an inner position when the refrigerator door is closed. The construction is such that when the door of the refrigerator is closed there will be no protruding elements from the inner face which are liable to engage against objects from within the refrigerator.

Still further the invention proposes the construction of an article as mentioned which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a perspective view of a refrigerator with a door constructed according to this invention.

Fig. 2 is a side elevational view of Fig. 1, illustrating particularly the inner face of the door.

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a plan view of a refrigerator constructed according to a modification of this invention.

Fig. 5 is an elevational view of the door of the refrigerator illustrated in Fig. 4 shown looking from the inside.

Fig. 6 is a fragmentary enlarged sectional view taken on the line 6—6 of Fig. 5.

Fig. 7 is a fragmentary horizontal sectional view taken on the line 7—7 of Fig. 6.

Fig. 8 is a fragmentary sectional view taken on the line 8—8 of Fig. 5.

Fig. 9 is a fragmentary enlarged sectional view taken on the line 9—9 of Fig. 5.

The refrigerator cooling tank for drinking water according to this invention is used in combination with a refrigerator door 10. This door is shown hinged by the hinges 11 upon a refrigerator 12 of any design or construction. The door 10 is of conventional construction in many respects, for example, the provision of packing material 13 along its edges so as to produce a sealing effect for the refrigerator when the door is closed. Furthermore the door 10 is provided with a conventional shoulder 14 adapted to engage into the door jamb of the refrigerator.

A water tank 15 of sanitary non-corrosive material is mounted within the door 10 for the purpose of receiving "cold" from the refrigerator to cool the contents of the tank. This tank is provided with a filler tube 16 arranged upon the inner face of the door. Furthermore a faucet 17 for the discharge from the tank 15 is also arranged upon the inner face of the door. The filler tube 16 is positioned at the upper edge of the tank 15 and is provided with a removably threadedly mounted cap 18 which may be removed for the purpose of pouring water or other liquid through the tap to be stored within the tank. The faucet 17 is arranged at the bottom of the tank and is adapted to allow the discharge of the liquid within the tank. As clearly illustrated in Fig. 2 the faucet 17 is positioned near the free edge of the door so as to be convenient to persons drawing a supply of liquid from the tank. The filler tube 16 may be located at the vertical center line of the door.

The tank 15 may be constructed of glass, china or other sanitary non-corrosive material. It is held in position by several support elements 19 engaging against the edges of the tank and in intimate contact with the inner edges of a hollow 20 formed in the door. Heat insulation material 21 is arranged around the walls of the hollow 20 and against the supporting elements 19 for the purpose of preventing heat from the exterior traveling through the door into the refrigerator. Still further the hollow 20 serves to insulate the refrigerator. The tank 15 does not take up the entire compass of the hollow 20 leaving particularly a passage 20' between the outer wall of the hollow 20 and the tank 15. A

metal sheet cover 22 is secured upon the outside of the inner side of the door 10 and is in intimate contact with one face of the tank 15 so as to readily radiate the "cold" from the refrigerator to the tank. The arrangement is such that liquid such as water may be stored in the tank 15 and always be chilled ready for drinking. Occasional opening of the door will serve to move the tank so as to prevent the water from becoming stagnant or from freezing, under certain conditions.

In Figs. 4-8 inclusive, a modification of the invention has been disclosed wherein provision is made to have the filler tube and the faucet for the tank within the outside of the surface of the inner side of the door when the door is in the closed position, and an arrangement whereby the filler tube and faucet automatically move outside of the surface of the inner side of the door so as to be readily reachable to be used.

More particularly the filler tube 16' is formed with an open upper end and is slidable upon a short piece of pipe 23 horizontally projecting from the tank 15'. This tank 15' is formed with depressed portions 15<sup>a</sup> extending substantially across the entire width of the tank from the side adjacent the hinge of the door near the other side. The section shown in Fig. 8 illustrates the tank 15' at a portion where it is of complete width while the section on the line 6-6 or the section 7-7 show the tank with the reduced area. Within these reduced areas the filler tube 16' and the faucet 17' are adapted to be housed. Packing material 25 is interposed between the filler tube 16' and the pipe 23 so that the filler tube may be moved outwards and then again moved inwards without leakage of liquid.

The faucet 17 is also slidably mounted upon a pipe 23 and is provided with the packing 25 as described relative to the filler tube 16'. A mechanism is provided for automatically moving the faucet and the filler tube inwards or outwards depending upon the condition of the door.

The means mentioned in the last sentence of the previous paragraph comprises pegs 26 projecting from the bottom sides of the filler tube and the faucet and engaging in slots formed in bell cranks 27 pivotally mounted intermediately upon the pivots 20. These bell cranks 27 have their other arms connected with rods 29 slidably mounted and terminating in heads 30 formed with cam ends 31 adapted to act against the jamb of the door for causing the rods 29 to move inwards. Springs 32 are coaxially arranged upon the rods 29 and act against standards 33 supported from the door so as to normally urge the rods 29 outwards.

In Fig. 4 the heads 31 are shown in intimate contact with the jamb of the door so that the rods 29 are in their inner positions in which positions the bell cranks 27 are pivoted so as to hold the filler tube 16' and faucet 17' in retracted position. The retracted position is one as illustrated in Fig. 6 wherein these parts are within the surface of the inner side of the door. A sheet metal cover 22 is arranged across the inside of the door as previously described, but this sheet metal cover is provided with openings 34 through which the filler tube and the faucet may project.

In Fig. 5 the heads 31 are shown projected since the door is shown outside of the door jamb. In this condition of the device the door is opened and the springs 32 have functioned to move the rods 29 into positions in which the filler tube 16' and the faucet 17' are extended outside of the

surface of the inner side of the door. In Figs. 6 and 9, the dot and dash lines illustrate the filler tube and the faucet in the extended position.

The filler tube 16 may also be so arranged that when the door 10 is closed, the top of the filler tube 16 is aligned with an automatic release valve projecting from a water supply within the refrigerator and the tank 15 is filled automatically whenever the door 10 is closed. The valve of the water supply pipe may be of any well known type which closes automatically when the filler tube 16 is moved out of contact.

The operation of the device is as follows:— When the door is in the closed position the filler tube and faucet are in their retracted positions. When the door is opened the springs 32 move the rods 29 so as to extend the heads 31, and simultaneously pivot the bell cranks 27 to move the filler tube and the faucet into extended position, indicated by the dot and dash lines in Figs. 6 and 9. When the door is closed the extended heads 31 engage against the jamb of the door and are forced inwards moving the rods 29 against the actions of the springs 32 and pivoting the bell cranks 27 into their original positions, which moves the filler tube and the faucet inwards into the positions illustrated by the full lines in Figs. 1 and 6.

While I have shown and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim is new, and desire to secure by United States Letters Patent is:—

1. In combination with the door of a refrigerator, a tank mounted within the door for being cooled by the cold air within the refrigerator, a filler tube from the tank movably mounted on the inner side of the door for location within or outside of the surface of the inner side of the door, a faucet from the tank movably mounted on the inner side of the door for location within or outside of the surface of said inner side of the door, and means operative by the opening and closing of said door for moving the filler tube and faucet to the extended position when the door is opened and to the retracted position when the door is closed.

2. In combination with the door of a refrigerator, a tank mounted within the door for being cooled by the cold air within the refrigerator, a filler tube from the tank movably mounted on the inner side of the door for location within or outside of the surface of the inner side of the door, and a faucet from the tank movably mounted on the inner side of the door for location within or outside of the surface of said inner side of the door, and means for automatically moving said filler tube to the extended position when the door is open and to the retracted position when the door is closed.

3. In combination with the door of a refrigerator, a tank mounted within the door for being cooled by the cold air within the refrigerator, a filler tube from the tank movably mounted on the inner side of the door for location within or outside of the surface of the inner side of the door, a faucet from the tank movably mounted on the inner side of the door for location within or outside of the surface of said inner side of the

the door, means for automatically moving said filler tube to the extended position when the door is open and to the retracted position when the door is closed, and means for automatically moving said faucet to the extended position when the door is open, and to the retracted position when the door is closed.

4. In combination with the door of a refrigerator, a tank mounted within the door for being cooled by the cold air within the refrigerator, a filler tube from the tank movably mounted on the inner side of the door for location within or outside of the surface of the inner side of the door, a faucet from the tank movably mounted on the inner side of the door for location within or outside of the surface of said inner side of the door, and means for automatically moving said filler tube to the extended position when the door is open and to the retracted position when the door is closed, said automatic means comprising a rod slidably mounted through the door and having a head end with a cam portion adapted to engage against the jamb of the door for holding the rod inwards, means for moving said rod outwards, a bell crank connected at one end with said rod and the other end with said filler tube.

5. In combination with the door of a refrigerator, a tank mounted within the door for being cooled by the cold air within the refrigerator, a filler tube from the tank movably mounted on the inner side of the door for location within or outside of the surface of the inner side of the door, a faucet from the tank movably mounted on the inner side of the door for location within or outside of the surface of said inner side of the door, means for automatically moving said filler tube to the extended position when the door is open and to the retracted position when the door is closed, means for automatically moving said faucet to the extended position when the door is open and to the retracted position when the door is closed, said latter means comprising a rod slidably mounted in said door and having one end projecting therefrom, said projecting end being a cam engageable with the jamb of the door for moving the rod inwards, means for moving the rod outwards, a bell crank pivotally mounted immediately and connected at one end with the rod and at the other end with the faucet.

6. In a refrigerator, a door, said door having spaced inner and outer walls forming a hollow space therebetween for insulation against transmission of heat, in combination with a tank of sanitary non-corrosive material mounted within the hollow space of the door to be cooled from within the refrigerator, a faucet connected to the tank protruding therefrom through the inner wall of the door, said tank being in intimate contact with the inner wall of the said door, but being spaced from the outer wall of said door a distance substantially equal to the inside measurement from front to back of said tank to provide a relatively large air pocket between the tank and the outer wall.

7. In a refrigerator, a door, said door having spaced inner and outer walls forming a hollow space therebetween for insulation against transmission of heat, in combination with a tank of sanitary non-corrosive material mounted within

the hollow space of the door to be cooled from within the refrigerator, a faucet connected to the tank protruding therefrom through the inner wall of the door, said inner wall comprising a metal sheet covering the inner side of the door, said tank being in intimate contact with the inner face of the metal sheet but being separated from the outer wall of said door to provide an air pocket between the tank and the outer wall, said air pocket being substantially equal in volume to the volume of said tank.

8. In a refrigerator, a door of hollow construction for insulation against transmission of heat, in combination with a tank mounted within the hollow part of said door to be cooled from within the refrigerator, a faucet from the tank movably mounted on the inner side of the door for location within or outside of the surface of said inner side of the door, and means operated by the opening and closing of said door for moving the faucet to the extended position when the door is opened and to the retracted position when the door is closed.

9. In a refrigerator, a door of hollow construction for insulation against transmission of heat, in combination with a tank mounted within the hollow part of said door to be cooled from within the refrigerator, a faucet from the tank protruding therefrom on the inner side of the door, a filler tube from the tank movably mounted on the inner side of the door for location within or outside of the surface of the inner side of the door, and means operated by the opening and closing of said door for moving the filler tube to the extended position when the door is opened and to the retracted position when the door is closed.

10. In combination with the door of a refrigerator, a tank mounted within the door for being cooled by the cool air within the refrigerator, a filler tube from the tank movably mounted on the inner side of the door for location within or outside of the surface of the inner side of said door, a faucet from the tank movably mounted on the inner side of the door for location within or outside of the surface of said inner side of the door, and means for automatically moving said faucet to the extended position when the door is open and to the retracted position when the door is closed.

11. In combination with the door of a refrigerator, a tank mounted within the door for being cooled by the cool air within the refrigerator, a filler tube from the tank movably mounted on the inner side of the door for location within or outside of the surface of the inner side of the door, a faucet from the tank movably mounted on the inner side of the door, and means for automatically moving said faucet to the extended position when the door is open and to the retracted position when the door is closed, said automatic means comprising a rod slidably mounted in said door and having one end projecting therefrom, said projecting end being a cam engageable with the jamb of the door for moving the rod inwards, means for moving said rod outwards, a bell crank pivotally mounted immediately and connected at one end with the rod and at the other end with the faucet.

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