July 18, 1933. V. M. MAINE 1,918,767

WATER COOLER

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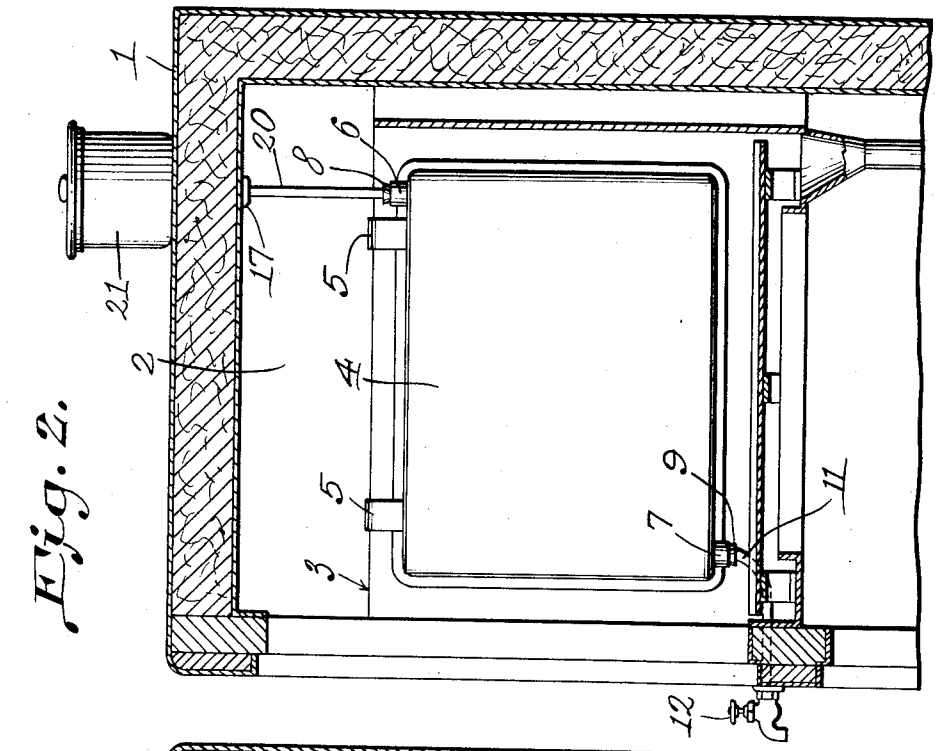


Fig. 2.

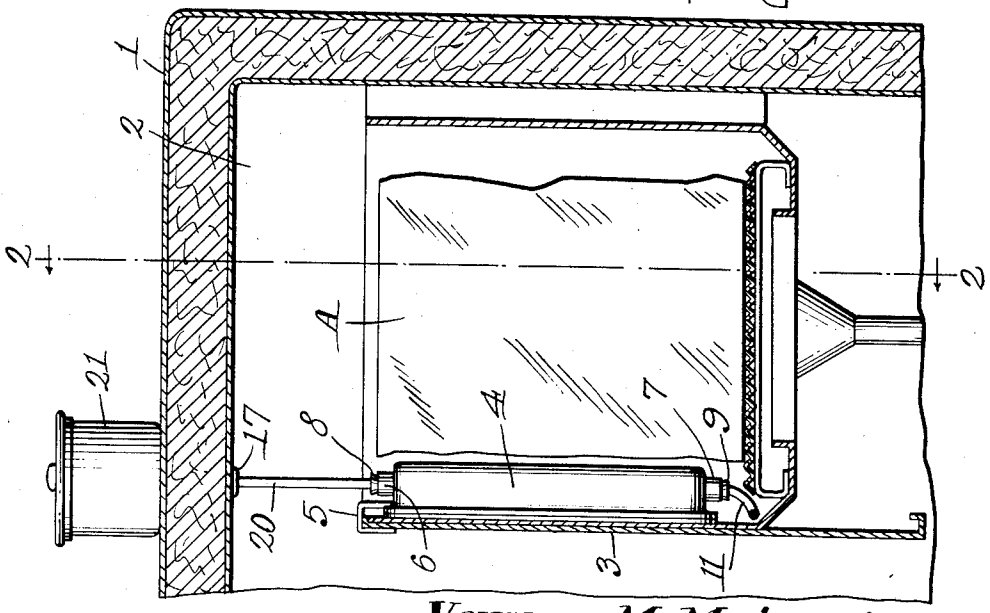


Fig. 1.

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Fig. 3.

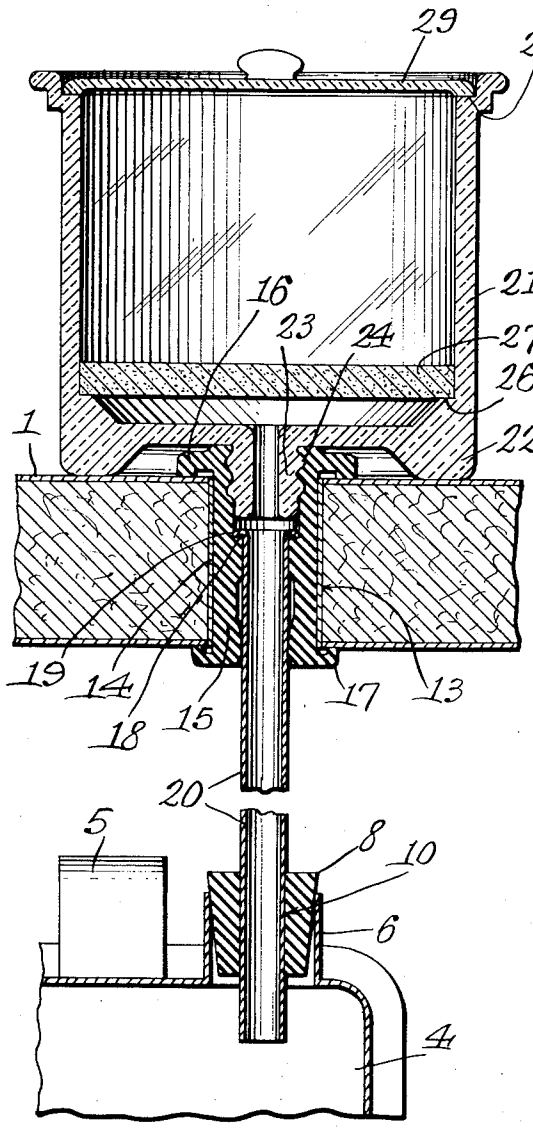
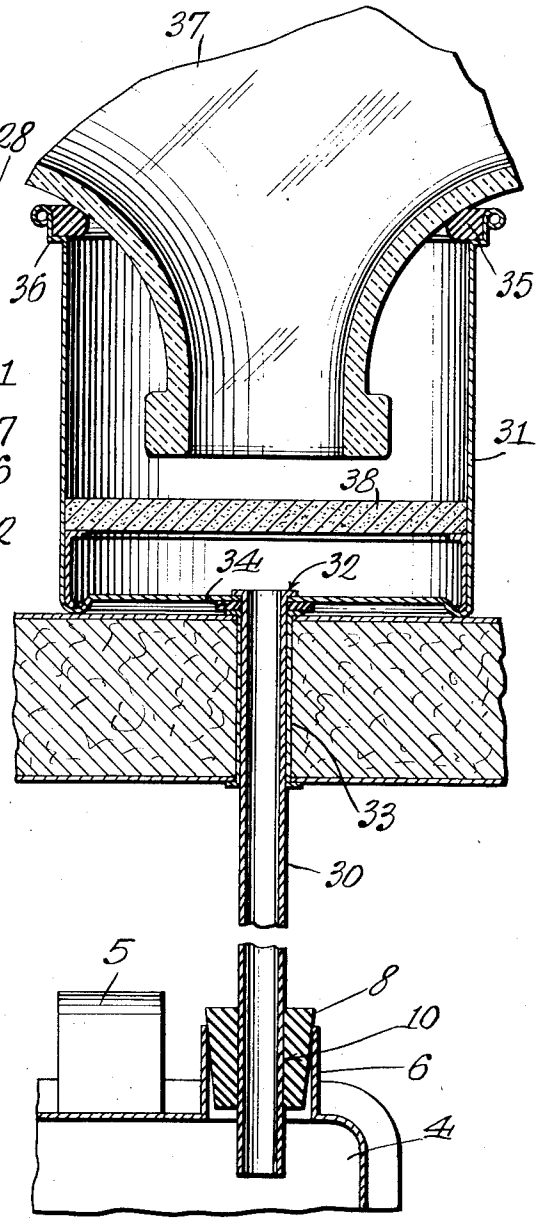


Fig. 4.



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UNITED STATES PATENT OFFICE

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WATER COOLER

Application filed March 24, 1932. Serial No. 600,990.

This invention relates to a water cooler for use in refrigerators.

It is an object of the invention to provide a cooler the parts of which can be easily placed in or removed from position, and can also be taken apart readily for cleaning and repairs.

Another object is to provide a cooler which includes a reservoir and a cooling tank with necessary connections, the reservoir being located at an accessible point outside the refrigerator and being suitable for use as a filter.

A further object is to provide efficient couplings between the several parts which constitute tight seals and can be assembled without requiring the services of a skilled mechanic.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred forms of the invention have been shown.

In said drawings:

Figure 1 is a vertical transverse section through a portion of a refrigerator showing the cooler in elevation.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is an enlarged section through a portion of the cooler.

Figure 4 is a view similar to Figure 3 showing a modified structure.

Referring to the figures by characters of reference, 1 designates a portion of a refrigerator the refrigerant compartment 2 of which has the usual side partition 3. Obviously other constructions can be used. All that is necessary is that some means, such as partition 3, be provided for supporting a portion of the cooler in compartment 2.

The cooling tank has been shown at 4. This can be of any suitable material, metal or vitreous, preferably porcelained inside and out, and is so shaped as to occupy minimum space. It has brackets 5 at the top for engaging the supporting partition 3 or the like and by making the tank thin it can occupy a small space between the partition and the ice block A or other refrigerating means.

Tank 4 is formed with an inlet neck 6 at its top and an outlet neck 7 at its bottom. Each of these is adapted to receive a plug or stopper 8 or 9, preferably of rubber, having an opening 10. An outlet tube 11 is seated in the opening in the bottom plug 9 and is extended to a faucet 12 mounted at a convenient point on the refrigerator.

The top of the refrigerator has an opening 13 preferably lined with a sleeve 14 of metal or other suitable material and this sleeve receives a coupling tube 15 of soft rubber provided at its upper end with a supporting head 16 adapted to rest on the top of the refrigerator. An annular flange 17 is provided on the lower end of the tube and is sufficiently flexible to permit downward insertion of the rubber tube into opening 13 after which the flange will engage under the top of the refrigerator as shown in Figure 3 and hold the tube in place.

The tube 15 is provided with an inner shoulder 18 between its ends which serves as a support for a flange 19 on the upper end of a rigid feed tube 20 which extends downwardly from the tube 15 and through top plug 8. The rubber tube 15 fits tightly about tube 20 and as it also fits tightly in sleeve 13 a sealing connection is maintained between the top of the refrigerator and tube 20.

A reservoir 21 is mounted on the refrigerator and is provided with a supporting bead 22 or the like so that its bottom can extend over head 16. A nipple 23 is extended downwardly from the bottom of the reservoir and has external annular ribs 24. This nipple is adapted to be forced downwardly into the upper end of tube 15 above flange 19 and will be anchored therein by ribs 24.

An inner shoulder 26 is provided in the lower portion of the reservoir and can be

used for supporting a filter 27. Another shoulder 28 is formed in the upper portion of the reservoir and can support a lid 29.

The reservoir shown in Figure 3 is preferably formed of vitreous material but it can be made of metal as in Figure 4. In that event the tube 30 can be welded to the bottom of the reservoir 31 or otherwise securely connected thereto, as shown at 32. A sleeve 33 can be used for lining the opening in the top of the refrigerator but instead of using a rubber tube such as shown at 15, a soft rubber packing in the form of a washer 34 can be interposed between the bottom of the reservoir and the refrigerator top.

In the structure shown in Figure 4 a packing ring 35 is seated on shoulder 36 to support an inverted bottle 37 above filter 38. Such an arrangement can also be used with the structure shown in Figure 3 as will be obvious.

When it is desired to remove the cooler shown in Figure 3 the reservoir is pulled from engagement with the packing tube 15. Tube 20 is then forced upwardly within tube 15, at the same time pulling the upper plug from the neck 7. Tank 4 is then uncoupled from tube 11 and can be lifted from position. The foregoing operation is reversed to replace the cooler.

The cooler shown in Figure 4 is removed simply by lifting reservoir 31. This pulls tube 30 and plug 8 from the tank which can then be taken from the refrigerator.

In using the cooler the tank is filled with water through tube 20 or 30 and a reserve supply is left in reservoir 31. If desired cracked ice can be placed in the reservoir to pre-cool the water. The filter will be found especially useful in localities where filtration is desirable. Otherwise it need not be used.

What is claimed is:

1. The combination with a refrigerator having an opening in the top thereof, of a resilient coupling tube removably mounted in the opening, collapsible means integral with the ends of the tube for lapping and engaging opposed faces of the apertured portion of the refrigerator, a feed tube supported by and depending from the coupling tube, a reservoir removably mounted on the refrigerator, an outlet nipple depending therefrom and removably seated in the coupling sleeve, and a tank detachably supported in the refrigerator and detachably connected to the feed tube, said coupling tube constituting a sealing connection between the nipple, feed tube and refrigerator.

2. The combination with a refrigerator having an opening, and a water tank detachably supported in the refrigerator having an inlet, of a sealing closure for the inlet, a reservoir, removably mounted on the refrigerator, a feed tube secured to the bottom thereof, and extending through the refrigerator opening and through the tank closure, and a sealing means engaging the refrigerator and tube, said reservoir and tube being liftable bodily relative to the tank and refrigerator to release the tank for removal and to detach the tube and reservoir from the refrigerator.

3. The combination with a refrigerator having an opening in the top thereof, of a resilient coupling tube removably mounted in the opening, collapsible means integral with the ends of the tube for lapping and engaging opposed faces of an apertured portion of the refrigerator, a feed tube supported by and depending from the coupling tube, water supply means removably seated in the coupling sleeve, and a tank detachably supported in the refrigerator and detachably connected to the feed tube, said coupling tube constituting a sealing connection between the supply means, feed tube and refrigerator.

4. The combination with a refrigerator having an opening, and a water tank detachably supported in the refrigerator having an inlet, of a sealing closure for the inlet, a feed tube extending through the refrigerator opening and through the tank closure, and a sealing means engaging the refrigerator and tube, said tube being liftable bodily relative to the tank and refrigerator to release the tank for removal and to detach the tube.

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