

A. MAY.
 WATER COOLING ATTACHMENT FOR REFRIGERATORS.
 APPLICATION FILED FEB. 11, 1909.

1,013,795.

Patented Jan. 2, 1912.

2 SHEETS-SHEET 1.

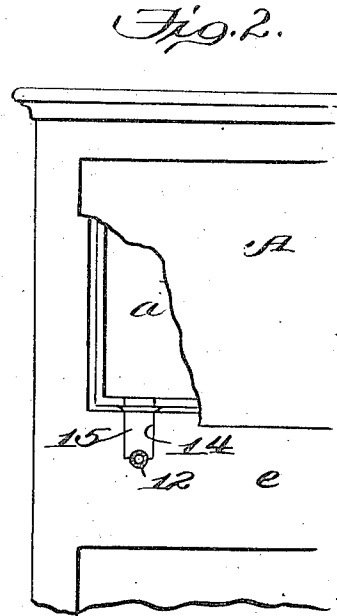
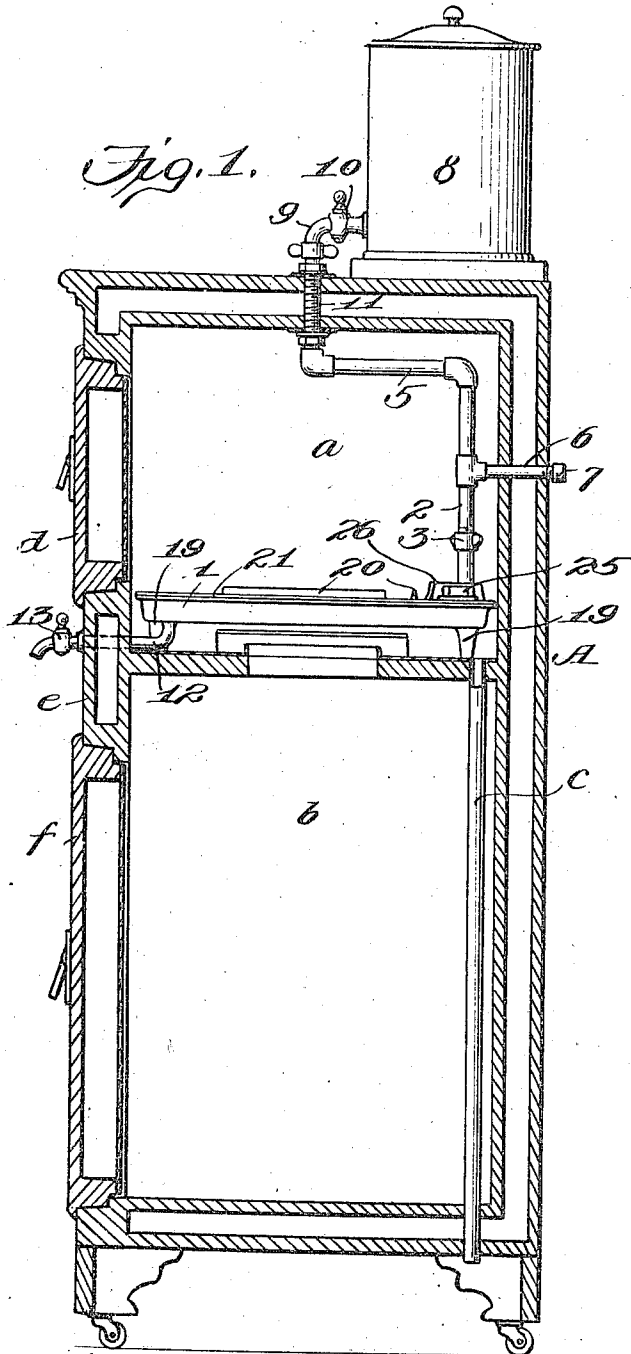


Fig. 3.

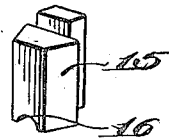
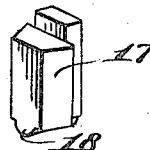


Fig. 4.



Witnesses:
Ed. H. Foster
J. B. Kester

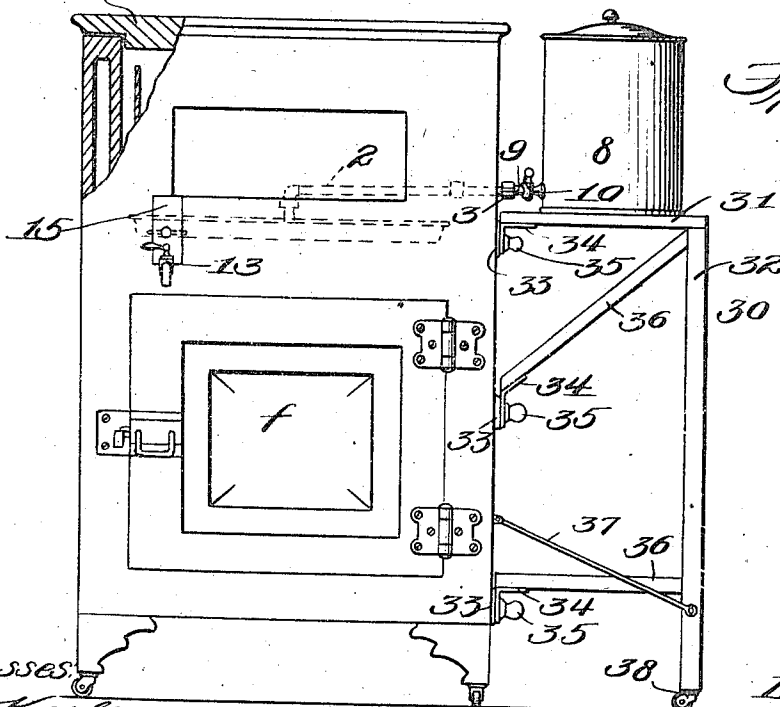
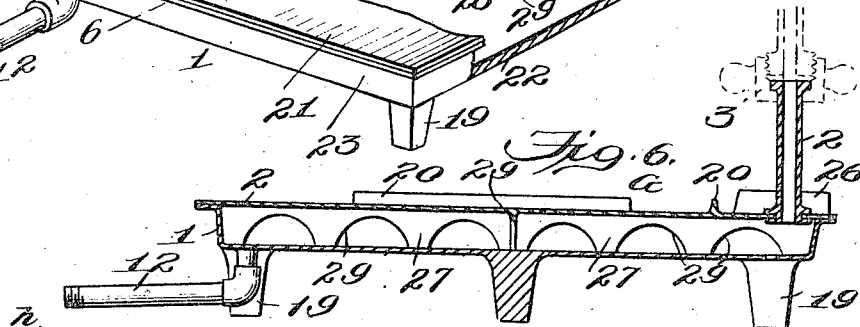
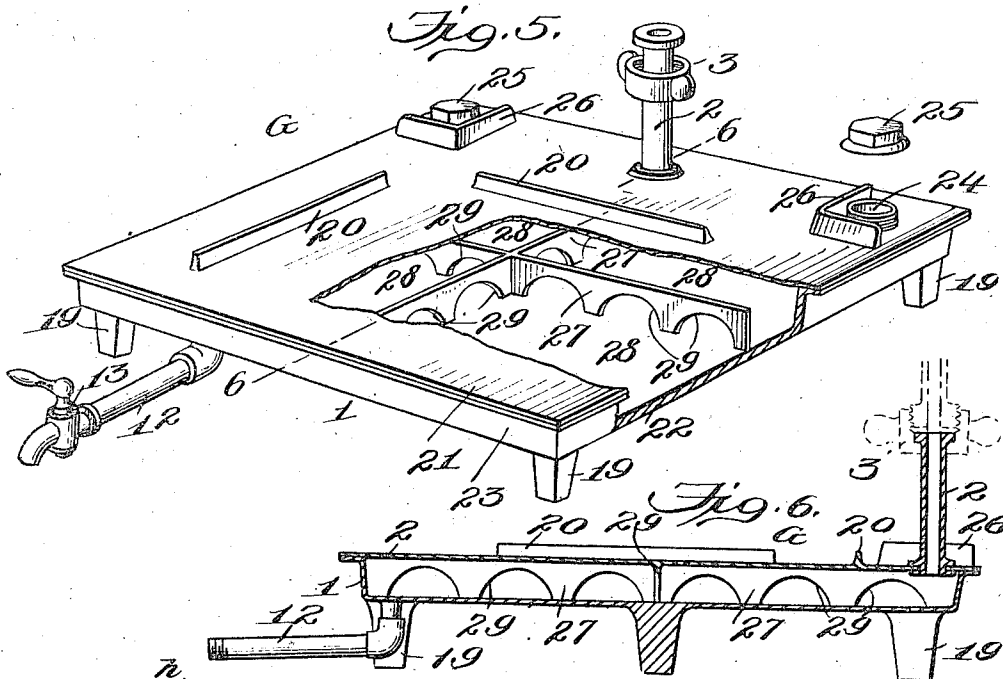
Inventor
Augustus May
James L. Norris
attorney

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2 SHEETS—SHEET 2.



Witnesses:
Ed. Hester
J. D. Kelly

Inventor
Augustus May
James L. Norris
Atty.

UNITED STATES PATENT OFFICE.

AUGUSTUS MAY, OF NEW ORLEANS, LOUISIANA.

WATER-COOLING ATTACHMENT FOR REFRIGERATORS.

1,013,795.

Specification of Letters Patent.

Patented Jan. 2, 1912.

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To all whom it may concern:

Be it known that I, AUGUSTUS MAY, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Water-Cooling Attachments for Refrigerators, of which the following is a specification.

This invention relates to new and useful improvements in water cooling attachments for refrigerators and it pertains to a construction of that general type in which a closed water containing pan or chamber to receive the cooling influence of the ice is provided.

The ultimate purpose of the invention is to provide a water containing pan of such novel construction whereby the refrigerating energy of the ice is not minimized; whereby the water is maintained in its original pure state and not contaminated by impurities contained in the ice; and whereby the water can not absorb the odors from the contents of the refrigerator. These are the main purposes for which the present invention has been devised and incidental objects of the construction are to provide a water containing pan which, together with its adjuncts, may be assembled in any refrigerator of conventional form having a side or a top door without the necessity of changing the arrangement or construction of any of the parts; which may be readily and quickly assembled within the refrigerator and as readily and quickly removed; and which may be readily cleaned when necessary or desirable.

In order to obtain the best results in the cooling of water it is preferred that the pan shall constitute a support for the block of ice and in this connection the invention has as a further object the provision of a pan which shall be exceptionally strong, and not liable to distortion by the weight of the ice; which shall be at the same time shallow in order that the cooling influence may more readily act upon the water which is spread out in a comparatively thin sheet; and in which it is impossible for air currents such as would cause a waste of the ice energy and minimize the water cooling effect, to pass between the ice and the pan.

Finally the invention aims to provide a water cooling attachment which shall be extremely simple in its structural details,

inexpensive to manufacture, long lived and efficient in use.

The accompanying drawings illustrate a preferred and advantageous embodiment of the invention and the structural details of such embodiment are set forth at length in the following description while the novel features by which the invention is distinguished from prior generally similar constructions will be described in language of the proper determinative scope in the claim appended at the end of the description.

In the said drawings: Figure 1 is a central longitudinal section illustrating the application of the invention to a conventional type of refrigerator having the door of its ice chamber located in the front wall thereof. Fig. 2 is a fragmentary front elevation of such a refrigerator, the door being partly broken away. Fig. 3 is a perspective view of a wall plug employed when the pan is in use. Fig. 4 is a similar view of a wall plug employed when the pan is not in use. Fig. 5 is a detail perspective view of the attachment and its adjuncts, parts being broken away for clearness of illustration. Fig. 6 is a central vertical sectional view thereof on the line 6-6 of Fig. 5, and Fig. 7 is a front elevation showing the application of the improvement to a conventional type of refrigerator having a top door for its ice chamber.

Similar characters of reference refer to corresponding parts throughout the several views.

In Fig. 1 the refrigerator is designated generally as A and comprises an ice chamber *a* and a refrigerating chamber *b*, a drip tube *c* extending through the chamber *b* from the chamber *a* and projecting below the refrigerator in the well known manner. The chamber *a* is closed by a door *d* which fits an opening in the front wall *e*, and the chamber *b* is closed by door *f*.

The refrigerating attachment, shown more particularly in Figs. 5 and 6, is designated generally by the letter G and comprises essentially a pan, as 1. The proportions of this pan, as shown in the drawings, do not correspond to the proportions of the pan as actually constructed, since in the latter instance the pan is extremely shallow, its total depth being about one-half of an inch. It has been necessary, however, to vary these proportions in the drawings in order that

the parts may be more clearly shown. Consequently the depth of the pan, as shown in the drawings, is materially greater in proportion to the lineal dimensions of the top and bottom walls than it is in the actual construction of the attachment.

Water is supplied to the pan 1 through a pipe 2 which is preferably made in upper and lower sections coupled by a suitable device, as 3, as for example, a threaded sleeve. The pipe 2 is connected to the top wall of the pan 1 near the rear edge thereof and is provided at its upper end with a horizontal extension, as 5, and intermediate its length with a horizontal extension, as 6, which projects through the rear wall of the refrigerator and when not in use is preferably closed by a cap, as 7. The extension 5 is employed when water is supplied to the pan 1 from a tank or reservoir and the extension 6 is employed when it is desired to supply water to the pan 1 from the service pipe. As shown, water is supplied to the pan 1 from a tank or reservoir, as 8, which in the construction shown in Fig. 1, is supported upon the top of the refrigerator and is provided with a curved discharge pipe, as 9, having a controlling valve 10. A pipe section, as 11, is disposed vertically in the top of the refrigerator and is suitably coupled to the pipe 9 and the extension 5. The bottom wall of the pan 1 is provided near its front edge with a horizontally extended discharge pipe, as 12, which is provided exteriorly of the refrigerator with a valve 13. In order to allow for the ready assemblage and removal of the pan, the front wall *e* is formed with a cut-away recess, as 14, the arrangement of which is shown more particularly in Fig. 2. This recess is closed by a plug, as 15, which is preferably of dovetail formation and which has in its under face a semi-circular recess, as 16, which snugly fits over the pipe 12, the latter resting in a similar recess formed in the wall *e*. The plug 15 is employed when the attachment is in use. When the attachment is not in use the recess 14 is closed by a plug 17 which is shown in detail in Fig. 4 and which is generally similar to the plug 15 except that instead of a recess 16 a semi-circular projection or bead, as 18, is provided, which fits into the recess in the wall *e* intended for the reception of the pipe 12.

The pan 1 is provided at its corners with supporting legs, as 19, by which said pan is normally held above the floor of the ice chamber *a* in order that the circulation of air from said ice chamber to the chamber *b* may not be retarded. The top wall of the pan is provided with angularly arranged ribs, as 20, which are designed to hold the block of ice in the chamber *a* against movement.

The top and bottom walls of the pan to which reference has been made, are designated respectively by the numerals 21 and 22 and are connected by vertical walls, as 23. The pan is thus completely closed and the water which circulates through the interior thereof is kept from contamination by extraneous matter sustained in the block of ice and is also prevented from absorbing the odors of the contents of the refrigerator. In order that the interior of the pan may be readily cleaned in case such action should be advantageous or necessary, openings, as 24, are provided in the two rear corners of the top wall 21. These openings are defined by threaded bosses which are normally closed by screw caps, as 25. Adjacent the caps 25, angular baffle ribs, as 26, are provided, the purpose of which is to prevent a block of ice from striking the caps 25 and distorting the same or the bosses upon which they are threaded. The bottom plate 22 may be comparatively thick for the purpose of increasing the strength and rigidity of the pan but the top plate 21 is comparatively thin in order that the cooling influence of the ice may be efficiently transmitted to the water within the interior of the pan. Said top plate with the exception of the ridges noted, is also perfectly flat in order that no space may be allowed for the circulation of air currents between the pan and the block of ice resting thereon, such as would tend to unnecessarily melt the ice and to retard the cooling of the water.

In known constructions it has been proposed to reinforce the top plate by forming transverse corrugations or ridges therein. This arrangement, however, is objectionable in that it promotes the circulation of air currents between the pan and the ice and is not an effectual reinforcement when the top plate is thin. In other words, in constructions wherein transverse ridges or corrugations are employed as reinforcement for the top plate, a thin top plate which would more readily transmit the cooling influence to the water, can not be used. The reinforcing means for the plate 21 of the present invention is disposed within the interior of the pan 1 and preferably comprises intersecting angularly disposed strips of metal, as 27, which are arranged vertically between the top and bottom walls 21 and 22 and which may be separable and articulated or which may be made integral or rigidly connected. The strips 27 are preferably of cruciform arrangement in order that the stress placed upon the top wall 21 may be more evenly distributed and in order that the interior of the pan may be divided into water circulating chambers, as 28, the strips 27 having suitable openings or recesses, as 29, formed therein to afford communication

between the chambers 28. The strips 27 efficiently reinforce the plate 21 and hold the same from sagging and distortion under the weight of the ice. The flat outline of the plate is thus maintained and the formation of irregularities such as would promote the circulation of air currents under the ice is prevented.

In Fig. 7, the invention has been shown as applied to a refrigerator in which a top door is provided for the ice chamber, such door being indicated at *h*. The construction of the pan and its adjuncts is precisely the same as described in connection with the disclosure of Fig. 1, but the pipe 2 in this embodiment is extended laterally instead of vertically, as in Fig. 1, and projects through an opening in one of the side walls of the refrigerator. It will be impractical in connection with this type of refrigerator to support the tank or reservoir 8 upon the top thereof and accordingly a stand designated generally as 30, has been provided at one side of the refrigerator to support said tank or reservoir. The stand 30 comprises essentially a shelf, as 31, upon which the tank 8 rests and a side leg or legs, as 32, supporting said shelf. The plates 33 are secured upon the side wall of the refrigerator at suitable intervals and angle-pieces 34 are secured to said plates preferably by thumb-screws, as 35. The shelf 31 is secured by screws or other fasteners to the uppermost angle-piece 34 and braces, as 36, are secured to the lowermost angle-pieces and to the leg or legs 32. It is preferable to employ also a tie-rod, as 37, between each leg 32 and the refrigerator. Each leg 32 preferably carries a caster, as 38, by means of which the stand 30 may be moved with the refrigerator when it may be desired to change the position of the latter in a room.

As was previously stated, the pan 1 may be readily removed. In the embodiment of Fig. 1, this can be done by uncoupling the sleeve 3 from the upper section of the pipe 2 and then removing the plug 15 from the wall *e*, the door *d* having been previously opened. The pan is then removed from the ice chamber through the opening in the wall *e*, the pipe 12 being lifted through the recess 14 without being detached from the pan. In case it is desired to clean the pan after removal, the valve 13 and the openings 24 are opened and water or other cleansing agent is caused to circulate through the in-

terior thereof, being admitted through one of the openings 24 and issuing through the other opening and the pipe 12. In the embodiment shown in Fig. 7, the plugs 15 and 17 are also employed but in the form of removable panels having suitable latch devices to prevent their displacement and the pipe 12 is constructed and assembled in the manner above set forth.

If for any reason it may be desired to discontinue the use of the attachment for a material length of time, the recess 14 is closed by the plug 17 in the manner described, and plugs or stoppers are employed as closures for the openings formed in the top and rear walls of the refrigerator through which the pipes 11 and 6 project.

The present arrangement of the pan is especially desirable in that in the event of leakage, the water from the pan will not enter the chamber *b*, such water being conducted away by the tube *c* with the water which melts from the ice.

Having fully described my invention, 80 what I claim is.

A water cooling attachment for refrigerators comprising a shallow closed ice supporting pan having flat top and bottom plates in parallel planes, the bottom plate being provided with supporting legs and the top plate being of relatively thin smooth-surfaced sheet material and being provided with cleaning openings which have removable closures, vertically disposed strips arranged within the pan and extending between the top and bottom plates thereof, the strips serving to brace the top plate and to take up the weight of the ice and being provided with arch-shaped openings which extend to their lower edges, a fixed short length pipe for admitting water into the pan; said pipe being carried by the pan, and a fixed short length-outlet pipe also carried by the pan, the height of the pan being chosen so as to cause the water to spread out in a relatively thin sheet to which the cooling influence of the ice is quickly and uniformly transmitted through the thin top plate.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

AUGUSTUS MAY.

Witnesses:

P. M. CAMBERTON,
H. F. BALDWIN.