

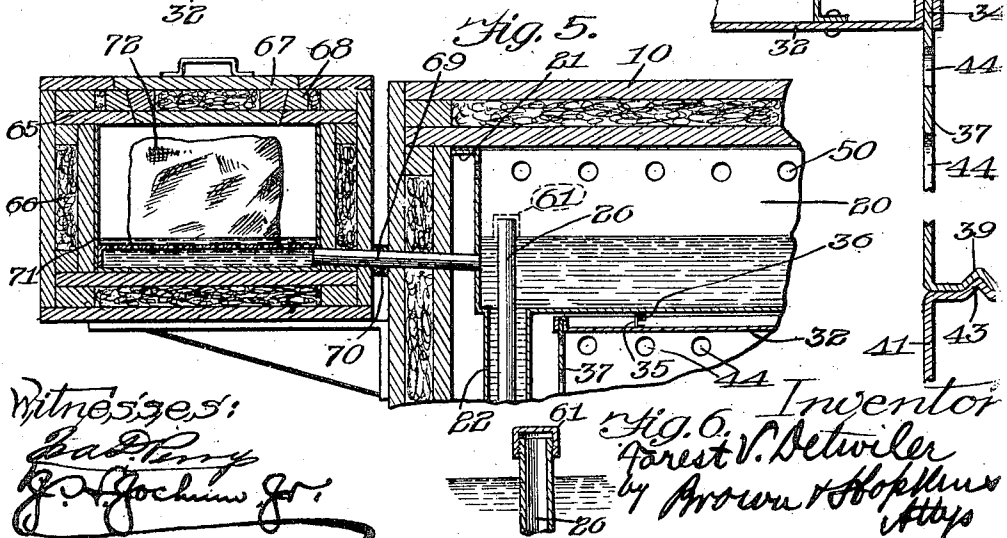
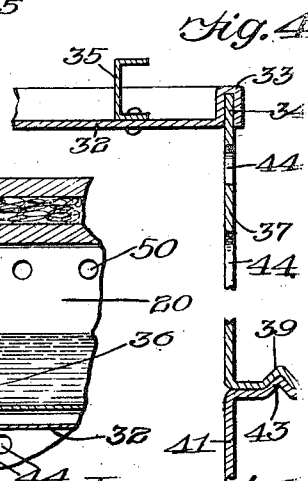
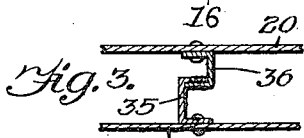
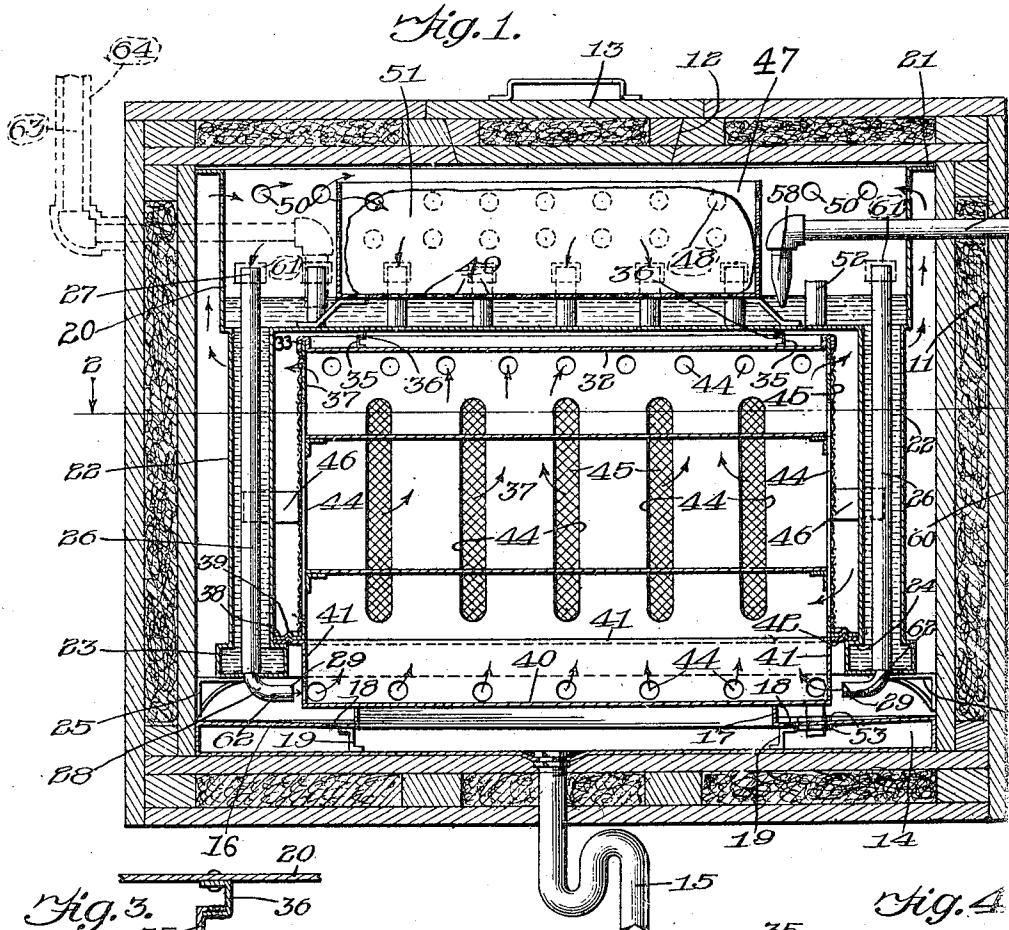
F. V. DETWILER.
REFRIGERATOR.

APPLICATION FILED FEB. 28, 1908. RENEWED AUG. 20, 1909.

981,539.

Patented Jan. 10, 1911

2 SHEETS-SHEET 1.



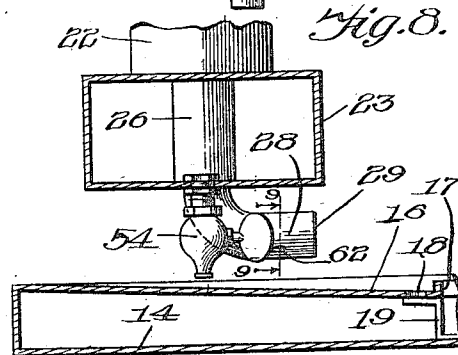
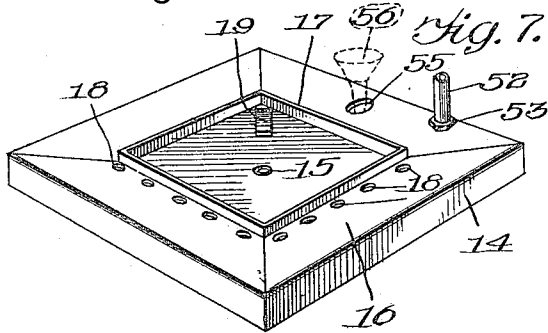
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Forest V. Detwiler
by Brown & Hopkins
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APPLICATION FILED FEB. 28, 1908. RENEWED AUG. 20, 1909.

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2 SHEETS—SHEET 2.



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Fig. 9.

Forest V. Dettweiler
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Inventor:

UNITED STATES PATENT OFFICE.

FOREST V. DETWILER, OF CHICAGO, ILLINOIS.

REFRIGERATOR.

981,539.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed February 28, 1908, Serial No. 418,310. Renewed August 20, 1909. Serial No. 513,872.

To all whom it may concern:

Be it known that I, FOREST V. DETWILER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification.

This invention relates to improvements in refrigerators and it has for one of its objects to provide improved means whereby either the city supply of water, the drip water from a beverage dispensing fountain, or ice may be used as a cooling medium.

A further object is to provide an improved cooling casing including air circulation tubes and in which the circulation of the air from the ice receptacle also acts as a cooling medium to reduce the temperature of the water surrounding the air circulation tubes so that the temperature of the circulating air will not only be materially reduced but will remain substantially the same.

A further object is to provide an improved device of this character whereby the accumulation or the presence of moisture in the cooling chamber will be avoided.

A further object is to provide an improved separable and knock-down cooling receptacle which may be readily removed when desired, and improved means for maintaining said provision receptacle in position.

A further object is to provide an improved device of this character which will be simple and durable in construction and efficient and effective in operation.

To the attainment of these ends and the accomplishment of other new and useful objects, as will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating an exemplification of the invention and in which—

Figure 1 is a vertical sectional view taken on line 1—1 of Fig. 2 and showing in dotted lines a modified arrangement of the invention. Fig. 2 is a horizontal sectional view on line 2—2 of Fig. 1. Fig. 3 is an enlarged detail sectional view showing the manner of supporting the top of the removable cooling receptacle. Fig. 4 is an enlarged detail sectional view partly broken away, showing a portion of the top of the removable cooling receptacle or casing and the manner of sup-

porting the sides thereof. Fig. 5 is an enlarged detail sectional view of a modified form of the invention. Fig. 6 is an enlarged detail sectional view of one extremity of the air circulation pipes showing the manner of closing the pipes when it is desired. Fig. 7 is a detail perspective view of the drip pan. Fig. 8 is a detail sectional view on line 8—8 of Fig. 2. Fig. 9 is a detail sectional view on line 9—9 of Fig. 8.

Referring more particularly to the drawings and in the present exemplification of the invention, the numeral 10 designates the outer casing or frame work of the refrigerator, which is packed with the usual asbestos or mineral wool 11. This casing may be of any desired size and configuration and is preferably provided with an aperture 12 in the top thereof and which is closed by a suitable closure or cover 13.

Arranged within the casing, in the usual manner and resting upon the bottom thereof is a drip pan 14 from which leads a suitable discharge pipe 15. This drip pan 14 is of a size to substantially fill the bottom of the casing and is provided with a top 16 which has a suitable aperture located at the center thereof and is provided with an upwardly projecting circumferential flange 17 surrounding the aperture. The top 16 is preferably inclined from the periphery of the pan toward the flange 17, as shown more clearly in Fig. 8, and is provided with a series of apertures 18 preferably surrounding the flange 17 by means of which any water of condensation which may accumulate on the top of the pan will be directed into the pan. If desired, suitable supporting legs or brackets 19 may be provided adjacent the corners of the aperture or the flange 17 for strengthening the top and also the flange 17, which latter assists in supporting the removable casing to be hereafter described.

Arranged within the chamber is a cooling casing, which preferably comprises a tank or receptacle 20, which may be of any suitable depth and of any desired size and is preferably provided with a circumferential flange 21 surrounding the top thereof and which projects beyond the sides and is adapted to engage the inner wall of the casing 10 for holding the tank against lateral displacement.

Depending from and communicating with 11

the tank or receptacle 20 are a plurality of marginal tubular members 22, which may be of any desired length according to the height of the casing 10, and these depending tubular members are arranged to partially surround the periphery of the tank so as to form a casing having an open side.

A tubular member or pipe 23 is arranged at the bottom of the tubular members 22 so as to connect and communicate with the members 22 and this tubular member or pipe 23 forms a base which is preferably provided with three sides, as shown more clearly in Fig. 2 of the drawings, so that the hollow casing formed by the tank 20, tubular member 22 and tubular member or pipe 23 will be entirely open on one side below the tank or receptacle 20.

The tubular member 23 is preferably of a width somewhat greater than the diameter of the tubular members 22 so as to form a projecting flange or ledge 24 for a purpose to be hereinafter set forth. Any suitable means may be provided within the casing 10 for supporting the hollow casing thus formed. Suitable and efficient means for accomplishing this purpose comprises brackets 25, which may be secured in any suitable manner to the inner wall of the casing 10 and above the drip pan 14.

Arranged within each of the tubular members 22 are air circulation pipes 26, which are of a diameter somewhat less than the diameter of the tubular members 22 and these pipes 26 are secured by one extremity to the bottom of the tubular member 23 over suitable apertures therein, and the upper extremities 27 thereof project through the bottom of the tank or receptacle 20 and into the tank and terminate any desirable distance beyond the bottom thereof.

One extremity of suitable elbows 28 may be inserted into the extremities of the pipes 26, as shown more clearly in Figs. 1 and 8, so that the free extremities 29 of the elbows will extend toward the inside of the hollow casing.

A separable or knock-down provision receptacle is adapted to be inserted through a door opening 30 and into the hollow casing through the open side or end thereof and the door opening 30 is adapted to be closed by a suitable door or closure 31.

The separable provision receptacle preferably comprises a top 32 which may be constructed of any desired or suitable material such as metal or the like and is of a configuration to fit within the casing and of a size somewhat smaller than the interior of the casing. The edges of the top 32 are preferably flanged or bent as at 33 to form a downwardly opening groove or recess 34 (shown more clearly in Fig. 4 of the drawings) and secured to the upper face of the top is a plurality of brackets 35

which are adapted to engage suitable guide ways 36, which latter are preferably secured to the bottom of the tank or receptacle 20, as shown more clearly in Fig. 3 of the drawings. The brackets 35 and 36 are so positioned that the top 32 may be inserted through the door opening 30 in the casing 10 and when the top is in position, it will be spaced a short distance below the bottom of the tank or receptacle.

One edge of the sides and back 37 of the provision receptacle is adapted to be inserted in the groove 34 of the flange 33 on the top 32 and the free end thereof is laterally deflected as at 38 and is provided with an upstruck rib or bead 39 extending the entire length thereof. The bottom 40 of the provision receptacle is provided with sides and back 41 of any desired height and the upper edges thereof are laterally deflected as at 42 (shown more clearly in Fig. 4 of the drawings) and this laterally deflected portion 42 is also provided with an upstruck portion or bead 43 extending the entire length thereof and is adapted to enter and be seated within the upstruck portion or bead 39 on the laterally deflected portion 38 of the sides and back 37. The laterally deflected portions or flanges 38, 42 of the sides and bottom are so arranged that when the extremity of the sides and back are seated within the groove or recess 34 in the top 32 and the latter is held in position by the brackets 35, 36, they will rest upon the ledge 24 of the tubular member 23 and the bottom 40 will rest upon the upper edge of the flange 17 surrounding the aperture in the top 16 of the drip pan 14.

The sides and back 37 may be provided with a plurality of apertures or openings 44 to permit air circulation through the separable provision receptacle. One series of these apertures or openings 44 are preferably arranged adjacent the free ends of the elbows 28 and another series is preferably arranged adjacent the top 32 of the chamber. If desired, some of the apertures or openings may be covered by a suitable reticulated material 45, such as wire gauze or the like, to prevent the entrance of foreign matter into the provision receptacle.

Suitable clips 46 may be secured to the outer face of the sides and back 37 of the provision receptacle which are adapted to engage and partially surround the tubular members 22 so as to hold the sides and back of the provision receptacle against accidental displacement.

Arranged within the tank or receptacle 20 is a suitable ice receptacle or pan 47 which is preferably provided with a plurality of apertures 48 in the sides thereof to permit the free circulation of air therethrough and a series of apertures 49 in the bottom to permit the water from the ice to drip into

the tank or receptacle 20, and the tank or receptacle 20 is also provided with a series of apertures 50 in the sides thereof adjacent the top to permit the free circulation of air.

When the ice 51 which is placed in the ice receptacle or pan 47 begins to melt, the water therefrom will pass through the apertures 49 in the bottom of the pan into the tank 20 and from there it will pass through the tubular members 22 which form the sides of the hollow casing and into the bottom 23 until the bottom and tubular members have been filled with the liquid after which the water will accumulate in the tank 20. The height of the water in the tank may be regulated by means of a suitable overflow pipe 52, which latter is preferably arranged within one of the tubular members 22 and extends through the bottom of the tubular member 23 and into the drip pan 14 through a suitable opening in the top thereof and may be held in position by means of suitable nuts 53 (shown more clearly in Fig. 1 of the drawings). The upper extremity of the overflow pipe 52 terminates short of the upper extremities of the tubular members or pipes 26 and by adjusting the upper extremity of the overflow pipe 52 with respect to the bottom of the tank 20, the height of the water in the tank may be regulated.

With this improved construction the cold air in the tank 20 adjacent the ice will pass through the tubular members or pipes 26 to the bottom of the casing 10 and will be discharged through the elbows 29 and into the cooling chamber through the series of apertures 44 adjacent the extremities 29 of the elbows 28 and will pass upwardly in the chamber to the top thereof and out through the openings or apertures 44 adjacent the top. While the cold air is passing downwardly through the pipes 26 the cooling medium (water) which is located within the tubular base 23 and the tubular members 22, will maintain the circulating air at a low temperature while the temperature of the air will in turn tend to maintain the water also at a low temperature and during this circulation of the air the cold temperature which is radiated from the outside surface of the tubular members 22 will pass into the provision receptacle through the apertures or openings 44 in the sides and back thereof to circulate therethrough and upwardly toward the top thereof and pass out of the apertures adjacent the top. The cold air which is discharged through the elbows or pipe extensions 29 will also enter the provision receptacle through the openings 44 adjacent the bottom and circulate through the receptacle. After the air passes out of the cooling chamber, it will tend to rise in the casing 10 toward the top thereof and on the outside of the tank or receptacle

10 until it reaches the apertures 50 in the upper edges of the sides of the tank through which it will pass into the tank and from there will pass through the apertures 48 in the ice pan or receptacle so as to come in contact with the ice 51 therein. This circulation will continue so long as there is sufficient ice to maintain a cold temperature and as the ice melts and the water is drawn off by means of the overflow 52, the air will pass through the series of apertures 48 and always come in contact with the surface of the ice.

When it is desired to remove the cooling receptacle for the purpose of repair or for cleaning the parts all that is necessary is to open the door 31 and knock down the provision receptacle by removing the sides and back, or by removing either one of the sides or the back as the case may be. This operation may be accomplished by springing the upstruck or beaded portions 43, 39, out of engagement with each other and then detaching the other end of the respective member by drawing it out of the groove or recess 34 in the top. The provision receptacle may be assembled by reversing the operation, that is, by first inserting one end of the side or back into the groove or recess and then springing the beads or offset portions 39, 43 into engagement with each other.

If desired, a suitable drain cock or valve 54 may be provided at a convenient place, preferably in the lower face of the tubular member 23 between two of the elbows 28 and the top of the drip pan 14 may be provided with a suitable aperture 55 into which may be inserted a suitable funnel 56 (shown in dotted lines in Fig. 7), so that when the valve or cock 54 is opened the contents of the hollow casing may be discharged there-through and into the drip pan 14.

Extending into the side of the casing 10 and through one of the walls of the tank 20 is a pipe 57 which terminates in a suitable nozzle 58 and connected to the free end of the pipe 57 is a supply pipe 59, which may be connected to the city water supply and a valve 60 may be provided within the pipe 59.

When it is desired to use the city supply of water as a cooling medium, the ice pan or receptacle 47 may be removed (if desired) from the tank 20, although the removal of the ice pan is not necessary. With this form of cooling medium the operation or the circulation is the same as when the ice is used as a cooling medium with the exception that in this instance the cooling medium is running water, which may be supplied to the tank 20 through the pipe 59, the nozzle 58 being reduced as shown to prevent the pressure of the water from injuring the tank. As the water enters the tank through the pipe 59 it will fill the tubular bottom 23, and tubular side members 22, and accu-

mulate in the tank 20 to the desired height according to the adjustment of the overflow pipe 22 and the circulation of the water will maintain a low temperature in the refrigerator. If desired, and when the city supply of water is used as a cooling medium, suitable caps or closures 61 (shown more clearly in Fig. 6 and in dotted lines in Fig. 1), may be provided for the tubes 26 to prevent the moisture from passing into the tubes 26.

The elbows 28 of the pipes 26 are preferably provided with apertures 62 in the lower faces thereof adjacent the drip pan 14 to permit any water of condensation which may accumulate therein to drop upon the top of the pan 14 before the air passes out of the pipe and thereby prevent the moisture from being discharged with the air into the cooling chamber.

If desired, and instead of using the city supply of water as a cooling medium and the ice 51, a suitable pipe 63 may be provided which is covered with a suitable insulation 64 (shown in dotted lines in Fig. 1 of the drawings), which discharges into the tank 20 and this pipe 60 may be arranged to receive the drip from a beverage dispensing fountain in which instance the water therefrom will act as the cooling medium.

In a modification shown in Fig. 5 of the drawings the tank or receptacle 20 receives its supply of cooling fluid from a cabinet 65, which is provided with suitable packing or heat insulation 66 and a closure 67 for the opening 68. This cabinet 65 may be supported in any convenient manner and at any convenient point and has communication with the tank 20 by means of the pipe 69 which is preferably arranged on a slight incline as shown, and suitable heat insulation 70 may be provided for the exposed portion of the pipe. The cabinet 65 is provided with a suitable ice rack 71 upon which the ice 72 is adapted to rest and the cabinet is located at such a height with respect to the height of the tank 20 of the refrigerator that the extremities of the pipe 69 will always be submerged, that is, the water level in the cabinet 65 will be the same as the water level in the tank 20 but the cabinet is so arranged as to contain only sufficient water to submerge the end of the pipe 69 while the water in the tank 20 may be of any desired depth. This form of the invention is more particularly adapted for use for dispensing beverages and the cabinet 65 is arranged at a suitable height as to permit ready access to the ice therein whereby the latter may be shaved when desired for use with the beverages.

With this improved construction of refrigerator the walls of the cooling chamber are spaced from the tubular members 22 thereby preventing the water from coming in direct contact with the walls of the pro-

vision receptacle which will prevent the formation or accumulation of water on the inside of the provision receptacle.

In order that the invention might be fully understood, the details of the foregoing embodiments thereof have been thus specifically described but

What I claim as new is—

1. In combination, in a refrigerator, a casing comprising a hollow base, a hollow wall comprising spaced tubes supported by and communicating with the base, means whereby said casing may be supplied with a cooling liquid, and an air circulation pipe within each of the tubes, said pipes being of a diameter somewhat smaller than the diameter of the tubes and surrounded by the cooling liquid, one end of each of the pipes projecting through the hollow base and the other end extending to a point above the top of the casing.

2. In combination in a refrigerator, a tank having a source of supply of cooling fluid, a plurality of marginal downwardly-depending tubes communicating with the tank, a tubular member communicating with and connecting the lower ends of the tubes, an air circulation pipe arranged within each of the tubes, said pipes being of a diameter somewhat smaller than the diameter of the tubes, whereby said pipes will be surrounded by a cooling fluid, one end of the pipes extending through the tubular member at the bottom of the tubes, the other end of the pipes projecting beyond the bottom of the said tank.

3. In combination in a refrigerator, a tank having a source of supply of cooling fluid, a plurality of marginal downwardly-depending tubes communicating with and extending partially around the tank, a tubular member communicating with the lower ends of the tubes to form a hollow casing having an open side, an air circulation pipe within each of the tubes and of a diameter smaller than the diameter of the tubes whereby said pipes will be surrounded by the cooling fluid, one end of the pipes passing through the said tubular member and being deflected toward the inside of the hollow casing, and the other ends thereof extending through and beyond the bottom of the tank.

4. In combination, in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and extending partially around the periphery of the base, said members having communication with the base, a tank supported by and having communication with the members, said tank having a source of supply of cooling fluid, an air circulation pipe located within each of said members and being of a diameter somewhat smaller than the diameter of said members, whereby said circula-

tion pipes will be surrounded with a cooling fluid, one extremity of said pipes projecting through the said tubular base, the upper ends of said pipes projecting through and terminating beyond the bottom of the tank, and a removable knock-down provision receptacle within the casing.

5. In combination, in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and extending partially around the periphery of the base, said members having communication with the base, a tank supported by and having communication with the members, said tank having a source of supply of cooling fluid, an air circulation pipe located within each of said members and being of a diameter somewhat smaller than the diameter of said members, whereby said circulation pipes will be surrounded with the cooling fluid, one extremity of said pipes projecting through the said tubular base, the upper ends of said pipes projecting through and terminating beyond the bottom of the tank, and a removable knock-down provision receptacle within the casing, said receptacle being provided with apertures adjacent one end of the pipes and an additional series of apertures remote from the said ends of the pipes.

6. In combination, in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by the base and having communication therewith, a tank supported by and having communication with the members, said members extending partially around the periphery of the tank and said tank having a source of supply of cooling fluid, a knock-down provision receptacle within the casing including separate sides, and means removably engaging said tubular members, for holding the sides in position and spaced from the tubular members.

7. In combination, in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by the base and having communication therewith, a tank supported by and having communication with the members, said members extending partially around the periphery of the tank and said tank having a source of supply of cooling fluid, a knock-down provision receptacle within the casing, and clips supported by the sides and adapted to removably engage the said tubular members for holding the sides in position and spaced from the tubular members.

8. In combination in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and having communication with the base, a tank supported by and having communication with the members, said tank having a source of supply of cooling fluid, a knock-down pro-

vision receptacle within the casing including separate sides, a top for said chamber supported by the sides and an additional support for the top.

9. In combination in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and having communication with the base, a tank supported by and having communication with the members, said tank having a source of supply of cooling fluid, a knock-down provision receptacle within the casing including a top and separate sides, means for removably suspending the top from the tank, and means for detachably securing the sides to the top.

10. In combination in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and having communication with the base, a tank supported by and having communication with the members, said tank having a source of supply of cooling fluid, a knock-down provision receptacle within the casing including a top, and separate sides, means for removably suspending the top from the tank, means for detachably securing the sides to the top and additional means for holding the sides in position.

11. In combination in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and having communication with the base, a tank supported by and having communication with the members, said tank having a source of supply of cooling fluid, a knock-down provision receptacle within the casing including a top, separate sides and a bottom, means for removably suspending the top from the tank, means for detachably securing the sides to the bottom and means supported by the sides and detachably engaging the said tubular members for holding the sides in position.

12. In combination in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and having communication with the base, a tank supported by and having communication with the members, said members extending partially around the periphery of the tank and said receptacle having a source of supply of cooling fluid, a knock-down provision receptacle within the casing and an air circulation pipe within each of the tubular members and spaced therefrom whereby said pipes will be surrounded with the cooling fluid, said pipes extending beyond the tubular members and having communication with the interior of the said provision receptacle.

13. In combination in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and having communication with the base, a tank

supported by and having communication with the members, said members extending partially around the periphery of the tank and said tank having a source of supply of cooling fluid, a knock-down provision receptacle within the casing, and an air circulation pipe within each of the tubular members and spaced therefrom whereby the cooling fluid will surround the pipes, said pipes extending beyond the tubular members, one end of the pipes having communication with the interior of the said provision receptacle.

14. In combination in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and having communication with the base, a tank supported by and having communication with the members, said members extending partially around the periphery of the tank and said tank having a source of supply of cooling fluid, a knock-down provision receptacle within the casing, and an air circulation pipe within each of the tubular members and spaced therefrom whereby the pipes will be surrounded by the cooling fluid, said pipes extending beyond the tubular members and having communication with the interior of the provision receptacle, and an overflow for the said casing.

15. In a refrigerator, the combination of an outside casing, a hollow casing within the first said casing and having a source of supply of cooling fluid, a drip pan having a discharge outlet, an overflow pipe leading from the hollow casing and discharging into the pan, a removable knock-down provision receptacle within the hollow casing, air circulation pipes within the hollow casing, said pipes being spaced from the walls of the casing and surrounded by the cooling fluid and extending beyond the said casing, one end of the pipes having communication with the inside of the outside casing and the other ends discharging into the said provision receptacle, and means for holding said receptacle against accidental displacement.

16. In a refrigerator, the combination of an outside casing, a hollow casing within and spaced from the outside casing, said hollow casing including a tank having a source of supply of cooling fluid and being provided with apertures in the walls thereof through which the air is adapted to circulate, an overflow for the hollow casing, a knock-down provision receptacle within the hollow casing, said receptacle having apertures in the walls thereof and air circulation pipes within and spaced from the walls of said hollow casing, one end of said pipes terminating adjacent the apertures in the wall of the provision receptacle and the other end of the pipes extending through and beyond the bottom of said tank.

17. In a refrigerator, the combination of

an outside casing, a hollow casing within the outside casing, said hollow casing including a tank having a source of supply of cooling fluid and being provided with apertures in the walls thereof through which the air is adapted to circulate, an overflow for the hollow casing, a knock-down provision receptacle within the hollow casing, said provision receptacle having apertures in the walls thereof, air circulation pipes within and spaced from the walls of said hollow casing, one end of said pipes terminating adjacent the apertures in the wall of the provision receptacle and the other end of the pipes extending through and beyond the bottom of the said tank, and means for holding said provision receptacle in position and for spacing the same from the walls of the hollow casing.

18. A refrigerator, including in combination an outside casing, a hollow casing within the outside casing and having a source of supply of cooling fluid, a knock-down provision receptacle within the hollow casing, said receptacle comprising separate sides and a detachable top and bottom, said bottom being provided with a laterally projecting circumferential flange provided with a projecting portion extending beyond the face thereof, and each of said sides being provided with a laterally projecting flange adjacent one extremity thereof, and said flanges being adapted to rest upon the flange on the bottom and being provided with a portion adapted to receive the projecting portion of the flange on the bottom, and means for detachably securing the top to the sides.

19. A refrigerator, including in combination an outside casing, a hollow casing within the outside casing and having a source of supply of cooling fluid, a knock-down provision receptacle within the hollow casing, said receptacle comprising separate sides and a detachable top and bottom, said bottom being provided with a raised circumferential and laterally projecting flange, and each of said sides being also provided with a laterally projecting flange adjacent one extremity and adapted to rest upon the flange on the base, interengaging means on the flanges for detachably securing the sides and bottom together, and means for removably securing the top to the other extremities of the sides.

20. A refrigerator including in combination an outside casing, a hollow casing within the outside casing and having a source of supply of cooling fluid, a knock-down provision receptacle within the hollow casing, said receptacle comprising separate sides and a detachable top and bottom, said bottom being provided with a raised circumferential and laterally projecting flange, and each of said sides being also provided with a

laterally projecting flange adjacent one extremity and adapted to rest upon the flange on the base, interengaging means on the flanges for detachably securing the sides and bottom together, means for removably securing the top to the other extremities of the sides, and additional means for supporting the top in position.

21. A refrigerator including in combination an outside casing, a hollow casing within the outside casing and having a source of supply of cooling fluid, a knock-down provision receptacle within the hollow casing, said receptacle comprising separate sides and a detachable top and bottom, said bottom being provided with a raised circumferential and laterally projecting flange, and each of said sides being also provided with a laterally projecting flange adjacent one extremity and adapted to rest upon the flange on the base, interengaging means on the flanges for detachably securing the sides and bottom together, and means for removably securing the top to the other extremities of the sides, said hollow casing being provided with a shoulder upon which the flanges are adapted to rest to support the chamber.

22. A refrigerator including in combination an outside casing, a hollow casing within the outside casing and having a source of supply of cooling fluid, a knock-down provision receptacle within the hollow casing, said receptacle comprising separate sides and a detachable top and bottom, said bottom being provided with a raised circumferential and laterally projecting flange, and each of said sides being also provided with a laterally projecting flange adjacent one extremity and adapted to rest upon the flange on the base, interengaging means on the flanges for detachably securing the sides and bottom together, means for removably securing the top to the other extremities of the sides, said hollow casing being provided with a shoulder upon which the flanges are adapted to rest to support the receptacle, and additional means for supporting the top of the said receptacle.

23. A refrigerator comprising an outer casing, a hollow casing within the outer casing and comprising a tank, a series of downwardly depending tubular members communicating with and partially surrounding the periphery of the tank, a tubular member connecting the lower ends of and communicating with the first said tubular members and being of a diameter to project beyond the face of said members and into the casing, and a removable provision receptacle within the hollow casing, said receptacle being provided with a peripheral projecting flange adapted to engage and rest upon the said projecting portion for supporting the said receptacle.

24. A refrigerator comprising an outer casing, a hollow casing within the outer casing and comprising a tank, a series of downwardly depending tubular members communicating with and partially surrounding the periphery of the tank, a tubular member connecting the lower ends of and communicating with the first said tubular members and being of a diameter to project beyond the face of said members and into the casing, a removable provision receptacle within the hollow casing, said receptacle being provided with a peripheral projecting flange adapted to engage and rest upon the said projecting portion for supporting the said receptacle, and means for holding said receptacle against displacement.

25. A refrigerator comprising an outer casing, a hollow casing within the outer casing and comprising a tank, a series of downwardly depending tubular members communicating with and partially surrounding the periphery of the tank, a tubular member connecting the lower ends of and communicating with the first said tubular members and being of a diameter to project beyond the face of said members and into the casing, and a knock-down receptacle within the hollow casing, said receptacle being provided with a peripheral projecting flange adapted to engage and rest upon the said projecting portion for supporting the said receptacle.

26. A refrigerator, including in combination an outside casing, a hollow inner casing having a source of supply of cooling fluid and including hollow sides, air circulation pipes within and spaced from the walls of the sides, one end of the pipes extending beyond the top wall of the inner casing, the other end passing through the bottom wall of the inner casing and being deflected toward the inside of the hollow casing, said deflected portion being provided with an aperture in the base thereof, and a removable casing within the hollow casing, the walls of said casing being provided with openings adjacent the extremity of the deflected portion of the air pipes.

27. In a refrigerator, the combination of a cooling casing, a food receptacle inclosed therein, independent of the casing and free from the walls thereof, said receptacle having sides independent from its top and bottom and detachably connected with both, and means supporting said receptacle within the casing, said receptacle being adapted to be knocked down before removal from the casing and without dismembering the casing.

28. In a refrigerator, the combination of a hollow cooling casing having a source of supply of cooling fluid, a food receptacle inclosed therein independent of the casing

and free from the walls thereof, said receptacle having sides independent from the bottom and top and detachably connected with both, and means for supporting the receptacle within the casing, said receptacle being adapted to be knocked down without dismembering the casing and before removal from the casing.

29. In a refrigerator, the combination of a cooling casing, a food receptacle inclosed therein and having sides independent from its bottom and top and detachably connected with both, means for supporting said receptacle within the casing and means for holding the receptacle spaced from the walls of the casing.

30. In a refrigerator, the combination of an inclosing casing and a knock-down food receptacle within the casing and free from the walls thereof, said receptacle comprising a top, bottom and sides all separate from each other and detachably connected together and adapted to be knocked down before removal from the casing and without dismembering the casing.

31. In a refrigerator, the combination of an inclosing casing, a knock-down food receptacle inclosed within the casing and free from the walls thereof, said receptacle comprising a top, bottom and sides all separate from each other and detachably connected together, and means for positioning the food receptacle within the casing and with respect to the walls of the casing, said receptacle being adapted to be knocked down before removal from the casing and without dismembering the said casing.

32. In a refrigerator, the combination of an inclosing casing, and a collapsible, removable food receptacle within and independent of the casing, said receptacle substantially filling the casing and having each of its walls adjacent one of the walls of the inclosing casing.

33. In combination in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and extending partially around the periphery of the base, said members having communication with the base, a tank supported by and having communication with the members, and said tank having a source of supply of cooling fluid, an air circulation pipe located within each of said members and being of a diameter somewhat smaller than the diameter of said members whereby said circulation pipes will be surrounded with the cooling fluid, one extremity of said pipes projecting through the said tubular base, the upper ends of said pipes projecting through and terminating beyond the

bottom of the tank, and a provision receptacle within the casing.

34. In combination, in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by and extending partially around the periphery of the base, said members having communication with the base, a tank supported by and having communication with the members, said tank having a source of supply of cooling fluid, air circulation pipes located within each of said members and being of a diameter somewhat smaller than the diameter of said members whereby said circulation pipes will be surrounded with the cooling fluid, one extremity of said pipes projecting through the said tubular base, the upper ends of the pipes projecting through and terminating beyond the bottom of the tank, and a provision receptacle within and entirely independent of the casing, said casing being provided with apertures adjacent one end of the pipes and an additional series of apertures remote from the said ends of the pipes.

35. In combination in a refrigerator, a casing comprising a hollow base, a plurality of tubular members supported by the base and having communication therewith, a tank supported by and having communication with the members, said members extending partially around the periphery of the tank and said tank having a source of supply of cooling fluid, a provision receptacle within the casing and means removably engaging said tubular members for holding the sides in position and spaced from the tubular members.

36. In combination in a refrigerator, a casing having a hollow base, and hollow side walls communicating with the base and adapted to receive a cooling liquid, air circulation pipes within the hollow walls of the casing out of engagement therewith and extending throughout the height of the walls, said pipes being spaced from each other and surrounded by the cooling liquid, one end of each of the pipes having communication with the air outside of the casing directly through the hollow base, and the other end extending to a point above the top of the casing.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 26th day of February A. D. 1908.

FOREST V. DETWILER

Witnesses:

J. H. JOCHUM, Jr.,
M. W. CANTWELL.