

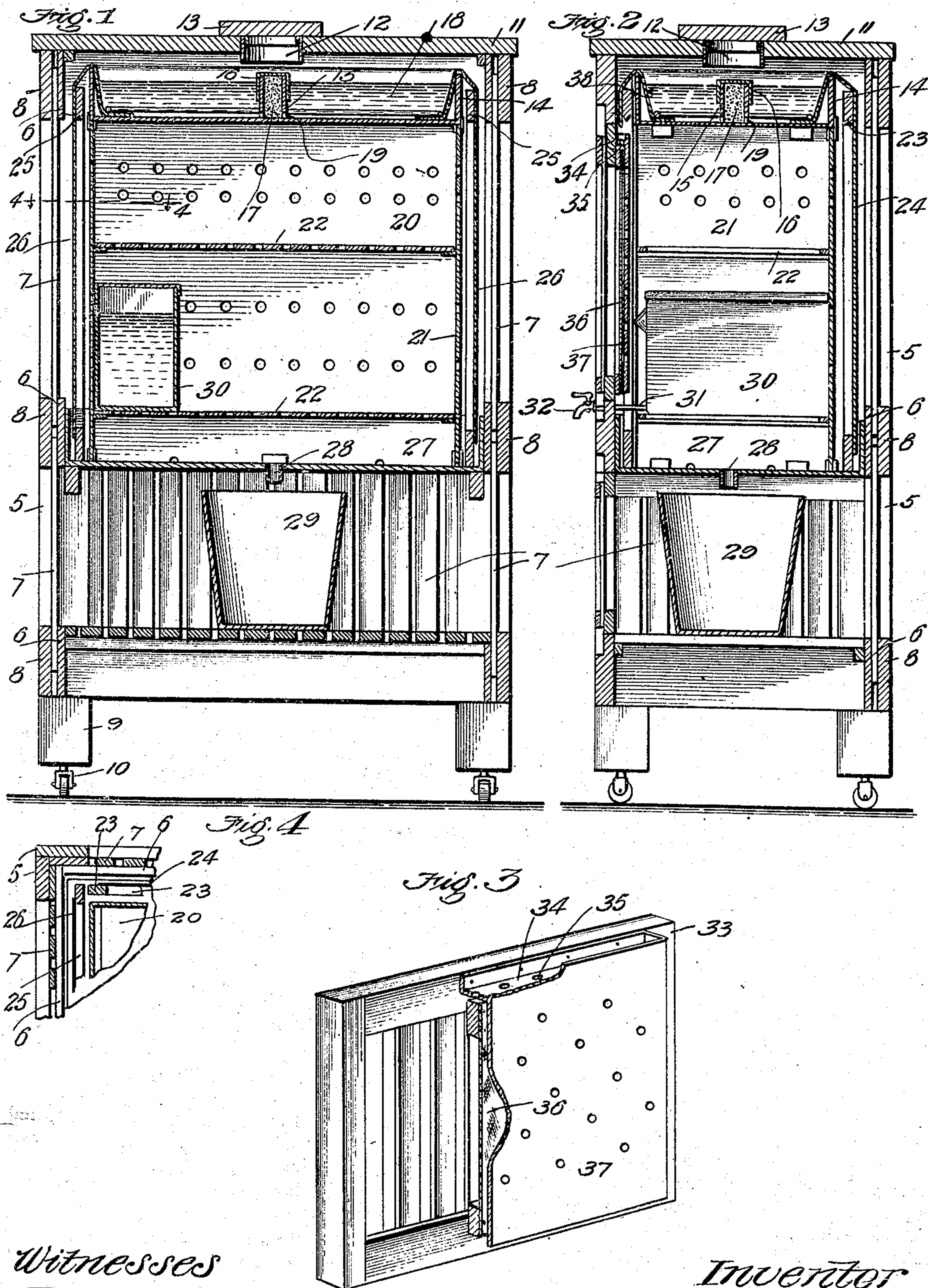
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A. R. CLARKE.

MEANS FOR COOLING THE INTERIORS OF RECEPTACLES.

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Witnesses  
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# UNITED STATES PATENT OFFICE.

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## MEANS FOR COOLING THE INTERIORS OF RECEPTACLES.

No. 858,704.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed December 7, 1905. Serial No. 290,828.

*To all whom it may concern:*

Be it known that I, ALVA R. CLARKE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Means for Cooling the Interiors of Receptacles, of which the following is a specification.

My invention relates to any receptacle room or building in which it is desired to lower the temperature of the air contained therein below the temperature of the outside air when such temperature is above 50 degrees Fahrenheit; and the object thereof is to provide simple means without the use of ice or other artificial refrigerants to accomplish this purpose.

In the accompanying drawings forming a part of this application I have illustrated my invention as applied to a cooling box for use in a kitchen to hold such domestic eatables as are usually kept in the refrigerator, but the principles thereof may be applied for cooling the interior of any receptacle such as the interior of cars used in transporting fruits that require refrigeration, or it may be applied to the room or building or it may be used for cooling and ventilating passenger coaches.

In the drawings: Figure 1 is a vertical longitudinal central section. Fig. 2 is a vertical central cross section. Fig. 3 is a detail of the door partly in section, and partly broken away. Fig. 4 is a cross section of one corner on the line 4-4 of Fig. 1.

In the drawings at each corner are the vertical corner boards 5 which are secured at the top and bottom and near the center by the cross or horizontal frame boards 6. To these frame boards are fastened the vertical slats 7, forming an outside or slatted shell finishing boards 8 are secured to the horizontal frame boards. Blocks 9 are secured to the corner boards at the bottom thereof thereby providing legs for the reception of casters 10, which provide means for conveniently moving the same when desired. A top 11 covers the shell and is provided in the center thereof with a filling port 12 which port is provided with a removable cover 13. Just below the cover is a liquid pan 14 in the center of which is a chemical receptacle 15 having a cover 16. Within this receptacle are the chemicals 17. Water 18 fills the pan to nearly the top of the chemical receptacle and access to the chemical by the water is had through small ports 19 at the bottom of the chemical receptacle. That portion of the interior in the upper portion of the shell and below the liquid pan may be termed the food chamber which is provided with perforated sides 20 and ends 21 which are preferably made of sheet iron, either galvanized or nickel plated or they may be covered with porcelain paint.

Slatted shelves 22 are provided upon which the articles to be placed in the chamber rest. At the back side of the food chamber is a frame 23 which is covered with a coarse cloth, preferably burlap 24 the upper end of which extends over and into the bottom of a liquid pan. Like frames 25 are provided at the ends of the food chamber also covered with burlap 26. The bottoms of these frames are received within and rest upon the drain pan 27 which is provided with a central port 28 therein so that whatever liquid may drip into the drain pan may pass into bucket 29 which when full can be taken out and the liquid poured back into the pan 14 for reuse. Within the food chamber is a small tank 30 for holding drinking water. This tank is provided with an outlet pipe 31 which has a cock 32 to control the flow of water therefrom. The door 33 is also a slatted structure and is provided at the top with a small trough 34 having ports 35 in the bottom thereof through which the liquid passes to burlap 36 which is intermediate the lining 37 and the outside slats. A short piece of burlap 38 has one end extending into the liquid pan and the other rests above the trough in the door to which it carries the liquid for distribution upon the burlap of the door.

The chemical receptacle is preferably first filled with those chemicals which are required to keep the water in a pure state, so that it may not deposit slime upon the burlap as it passes down the same. I have found in practice that for hard water a combination of fifteen parts of soda and fifty parts of sea-salt or chlorid of sodium gives very satisfactory results. Where the water is soft 10 parts of lime should be added to these chemicals, and I have also found that 20 parts of borax and 5 parts of ammonia are desirable with water like the water used in the city of Los Angeles in addition to the salt and soda.

Where there is a greater distance between liquid pan and the drain pan than in a receptacle for holding food such as a cooling room or a car for transporting fruit I provide a plurality of screens covered with burlap. The number depending upon the distance between the liquid pan and the drain pan and the temperature of the outside air and the movement of the air, more frames being needed for a moving structure like a railroad car than for a stationary structure.

By this construction it will be seen that the sides and ends of the receptacle are always kept damp and the open slat work permits of a circulation of air around moist burlap thereby reducing the temperature in the food chamber as long as there is heat enough on the outside thereof to produce evaporation.

I have found in actual practice that when the temperature was 100 degrees in the shade on the outside of



the food chamber that the temperature within the food chamber would be 60 degrees. If water as it comes from the well or other source of supply is used it will soon deposit slime upon the burlap and thus render the use of the device very objectionable, but by the use of chemicals as before mentioned a food chamber can be used the whole year round in the city of Los Angeles where I have had my device in practical use for more than a year last past, and the food will be kept purer than it is possible to keep it in the ordinary refrigerators using ice owing to the fact that in my device there is a circulation of fresh air through the food chamber, which is not the case where ice is used.

Having described my invention what I claim as new and desire to secure by Letters Patent is:—

1. Means for cooling the interior of receptacles comprising a liquid pan secured in the top of the receptacle; a chemical receptacle in said pan in communication therewith through ports at the bottom of chemical receptacle; a drain pan at the bottom of the receptacle; fibrous cloth extending from the bottom of the liquid pan up over the top thereof and downwardly therefrom; and slatted sides surrounding said cloth.

2. A cooling chamber comprised of slatted sides; a liquid pan in the top of said chamber; a chemical receptacle in said pan in communication therewith through ports at the bottom of the chemical receptacle; a drain pan at the bottom of said chamber; a perforated lining around said chamber; fibrous cloth projecting into the liquid pan and extending downwardly between the lining and slatted exterior.

3. A cooling chamber comprised of slatted sides; a liquid pan in the top of said chamber; a chemical receptacle in said liquid pan; a drain pan at the bottom of said chamber, said drain pan having a port in the bottom thereof, a receptacle below said port; a perforated lining around said chamber; and fibrous cloth projecting into the liquid

pan and extending downwardly between the lining and slatted exterior.

4. Means for cooling the interior of receptacles, comprising outer and inner perforate walls; a liquid pan secured in the top of said receptacle; a drain pan at the bottom of the receptacle; fibrous cloth extending from the bottom of the liquid pan up and over the top thereof and downwardly therefrom; a door secured to the front side thereof having an outer and inner perforate wall; liquid distributing means secured to the upper end of said door; and a frame having a fibrous cloth secured between the walls of said door.

5. Means for cooling the interior of receptacles, comprising outer and removable inner perforate walls; a liquid pan secured in the top of said receptacle; a drain pan at the bottom of the receptacle; fibrous cloth extending from the bottom of the liquid pan up and over the top thereof and downwardly therefrom; a door secured to the front side thereof having an outer and inner perforate wall; a liquid distributing trough secured to the upper end of said door having outlets in the bottom thereof; and fibrous cloth secured between the outer and inner walls of said door.

6. Means for cooling the interior of receptacles, comprising outer and inner perforate walls; a liquid pan secured in the top of said receptacle; a drain pan at the bottom of the receptacle; a fibrous cloth extending from the bottom of the liquid pan up and over the top thereof and downwardly therefrom between the outer and inner walls; a door secured to the front side thereof having an outer and inner perforate wall; liquid distributing means secured to the upper end of said door; fibrous cloth extending downwardly from the liquid pan and terminating above and over the said liquid distributing means; and fibrous cloth secured to said door intermediate the perforated walls thereof.

In witness that I claim the foregoing I have hereunto subscribed my name this 29th day of November, 1905.

ALVA R. CLARKE.

Witnesses:

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