(No Model.)

J. C. AYERS.

REFRIGERATOR.

No. 589,922. Patented Sept. 14, 1897.

Fig. I.

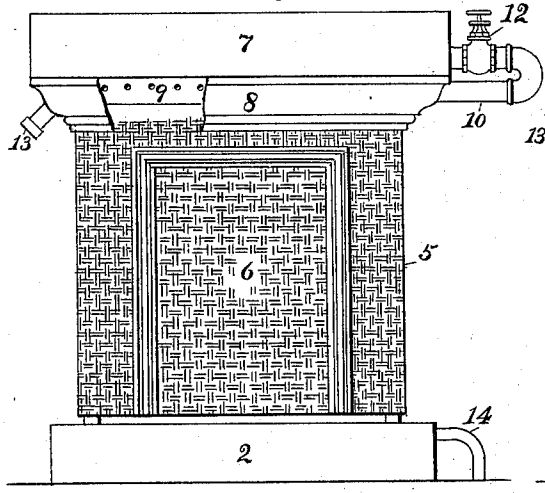


Fig. II.

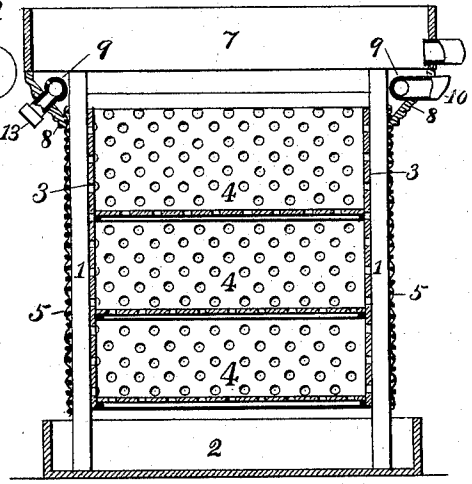


Fig. III.

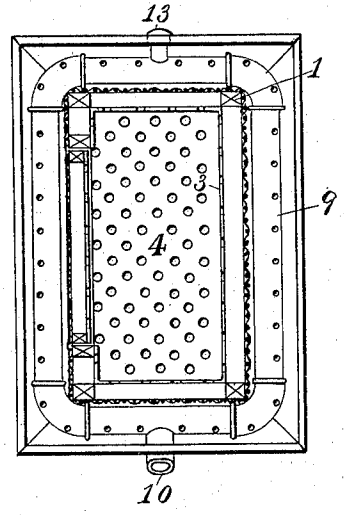
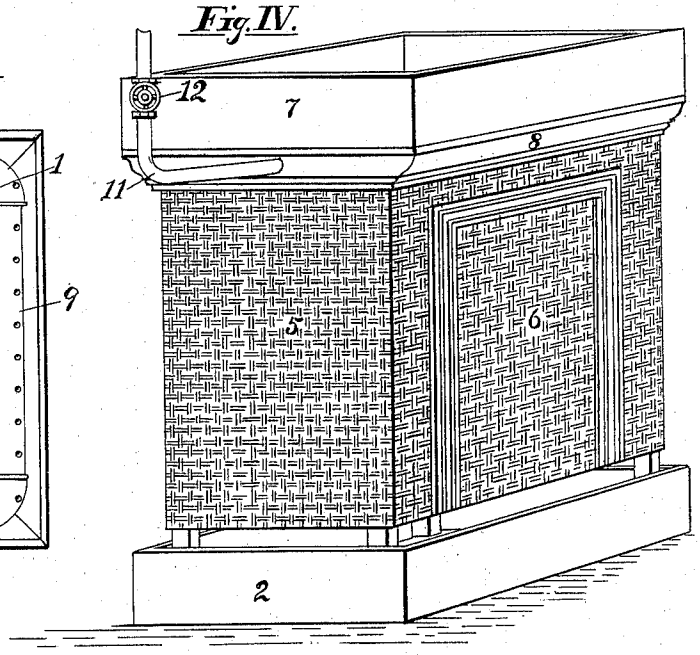


Fig. IV.



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UNITED STATES PATENT OFFICE.

JAMES C. AYERS, OF SAN FRANCISCO, CALIFORNIA.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 589,922, dated September 14, 1897.

Application filed December 2, 1896. Serial No. 614,158. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. AYERS, a citizen of the United States, residing at San Francisco, county of San Francisco, and State of California, have invented certain new and useful Improvements in Refrigerating Apparatus; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to refrigerating apparatus for the purpose of cooling and preserving food and like substances at a lower temperature than the surrounding atmosphere and to a particular manner of arranging and constructing such apparatus.

The object of my invention is to improve and render more efficient refrigerating appliances of the class which dispense with ice by affording free circulation of air around the contents of the receptacle and at the same time keeping the said contents at a low temperature by providing inclosing walls of permeable textile fabric kept constantly saturated with water, the evaporation of which under the free circulation of air carries off the surplus heat to an extent sufficient to prevent fermentation and decomposition in the food products contained within.

My improvements consist in certain specific details of construction described below and embodied in the several claims.

Referring to the drawings, Figure I is a front elevation of a refrigerator made according to my invention. Fig. II is a vertical section through the same. Fig. III is a plan view with the covering-pan removed, and Fig. IV a perspective view of the complete refrigerator.

The main frame 1 is a rectangular structure having corner-posts that extend down into a pan 2, containing water to prevent access of crawling vermin.

Within the main frame 1 is a lining 3, preferably of perforated metal plates, but which can be of lattice or wire work, such as will permit free circulation of air to and around food placed on the shelves 4, which are also perforated or made of bars, as shown in Fig. III. This forms an interior chamber or safe, the office of which is to sustain, segregate, and expose the food to the circulation of air through and around it, also out over the top of the sides 3, which, as seen in Fig. II, do not extend up to the pan 7, covering the main frame. The air which passes freely through the sides of the inner receptacle is diffused by the perforations and is also dried by deposition of the moisture on the metal plates 3.

Around the outside of the frame 1 I provide a complete covering 5 of burlap cloth, preferably three to five thicknesses of the common web, providing a door 6 at one side, also covered in like manner.

The top of the refrigerator is covered and inclosed by a water-pan 7, having a thin metallic bottom, against which will impinge and be cooled the air that ascends around and through the food on the shelves 4, thus recooling the air at the top.

Around the top of the main frame 1 and underneath the edge of the top pan 7, preferably within a cornice 8, I place a pipe 9, which extends wholly around, as seen in Fig. III, and is perforated at intervals to permit the escape of water.

The cornice 8 is made to cover and hold the top edges of the textile covering 5, as seen in Fig. II, not too firmly, but loose enough to permit the passage into this covering 5 of water dripping from the pipe 9. The water thus escaping from the pipe 9 is evenly distributed over the textile cover 5 and descends by gravity through the web, a portion being evaporated and the surplus, if any, falling into the pan 2, provided with a waste-pipe 14.

The pipe 9 can be supplied with water by a branch 10, communicating with the pan 7, as seen in Fig. I, or, where water under pressure is available, by a pipe 11, as shown in Fig. IV, in either case a stop-valve 12 being provided to regulate the amount of water supplied or required to maintain the outer covering 5 in a saturated condition. When water is scarce, it can be returned from the pan 2 to the pan 7 by a pump or by hand and circulated instead of providing a continual fresh supply. A wasteway 13 is provided for drawing off the water in the pipe 9 when the refrigerator is not in use or for other purpose. In this manner it will be seen that the evaporating-surface 5, being exposed to the external air, causes a rapid evaporation and consequent

fall in the temperature within, and that the contained food is not only maintained at this lower temperature, but its preservation is further promoted by the free circulation of the cooled air through and around it.

Having thus explained the nature and objects of my invention and the manner of constructing and applying the same in practice, what I claim as new, and desire to secure by Letters Patent, is—

1. In a refrigerator, a main frame, an inner food-containing chamber having perforated sides and open at the top, and an outer inclosing chamber or case out of contact with said inner chamber, having walls composed of permeable textile material, in combination with a water-pan surmounting and overhanging the said main frame and outer walls, a perforated pipe arranged beneath the overhanging edge of the said water-pan and beyond the said outer walls, and a pipe connection with suitable stop-cock for supplying water to the said perforated pipe, substantially as specified.

2. In a refrigerator, a main frame, an inner food-containing chamber having perforated sides and open at the top, and an outer inclosing chamber or case out of contact with said inner chamber, having walls composed of permeable textile material, in combination with a water-pan surmounting and overhanging the said main frame and outer walls, a perforated pipe arranged beneath the overhanging edge of the said water-pan and beyond the said outer walls, a wasteway for the said perforated pipe, and a pipe connection with suitable stop-cock between said perforated pipe and said water-pan, substantially as specified.

3. In a refrigerator, a main frame, an inner food-containing chamber having perforated sides and open at the top, and an outer inclosing chamber or case out of contact with said inner chamber, having walls composed of permeable textile material, in combination with a water-pan surmounting and overhanging the said main frame and outer walls, a perforated pipe arranged beneath the overhanging edge of the said water-pan and beyond the said outer walls, a wasteway for the said perforated pipe, a pipe connection with suitable stop-cock for supplying water to the said perforated pipe, a drip-pan 2, and a waste-pipe 14, substantially as specified.

4. In a refrigerator, a main frame, an inner food-containing chamber having perforated sides and open at the top, and an outer inclosing chamber or case out of contact with said inner chamber, having walls composed of permeable textile material, in combination with a water-pan surmounting and overhanging the said main frame and outer walls, a perforated pipe arranged beneath the overhanging edge of the said water-pan and beyond the said outer walls, a cornice extending from the outer edge of the said water-pan to and in contact with the textile covering of the outer wall, and a pipe connection with suitable stop-cock for supplying water to the said perforated pipe, substantially as specified.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

JAMES C. AYERS.

Witnesses:
K. LOCKWOOD-NEVINS,
H. SANDERSON.