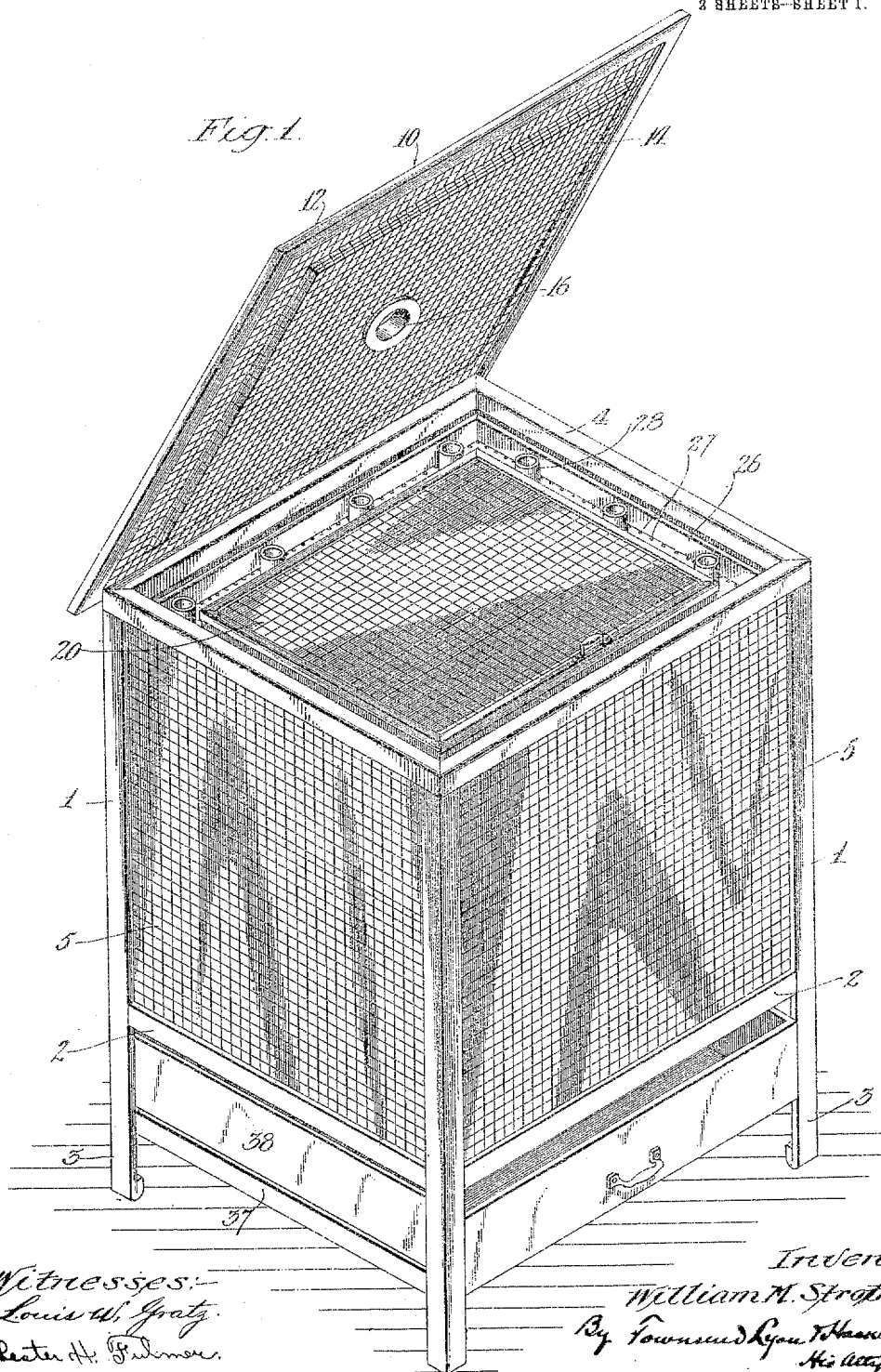


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REFRIGERATOR.
APPLICATION FILED JUNE 20, 1910.

984,714.

Patented Feb. 21, 1911.

2 SHEETS-SHEET 1.

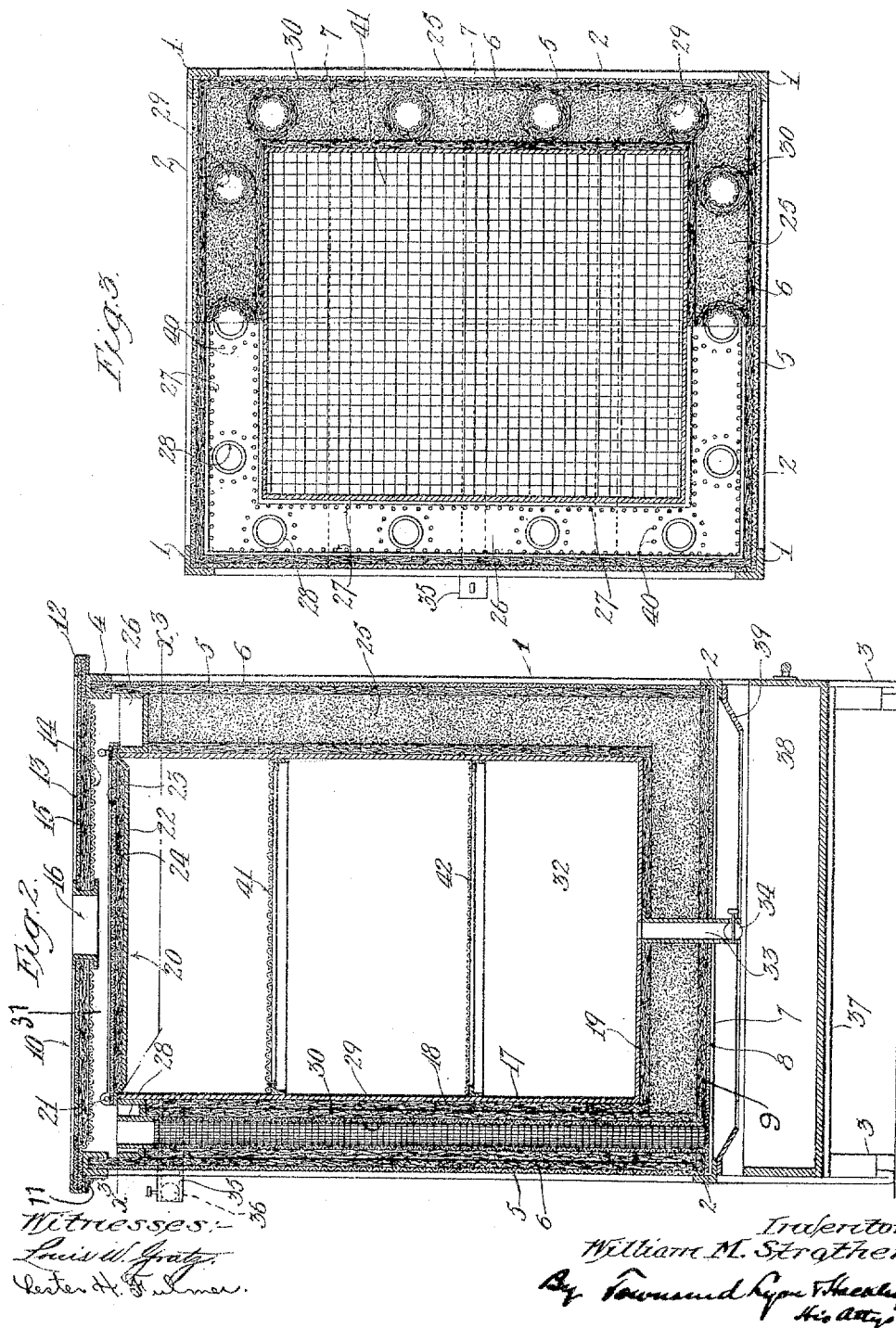


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UNITED STATES PATENT OFFICE.

WILLIAM M. STROTHER, OF LOS ANGELES, CALIFORNIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO AIR COOLING REFRIGERATING COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

REFRIGERATOR.

984,714.

Specification of Letters Patent.

Patented Feb. 21, 1911.

Application filed June 20, 1910. Serial No. 567,989.

To all whom it may concern:

Be it known that I, WILLIAM M. STROTHER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Refrigerator, of which the following is a specification.

My invention relates to improvements in refrigerators adapted to receive provisions and eatables, and one of the main objects of the invention is to so construct a refrigerator of the character described that the interior thereof may be kept at a sufficiently low temperature by the action of evaporation and the contents kept therein, without the use of ice.

Another object of the invention is to so construct the refrigerator that a large surface is exposed upon which the evaporating action may take place.

Other objects and advantages will appear as hereinafter described.

Referring to the drawings:—Figure 1 is a perspective view of one form of refrigerator embodying my invention, the top of the refrigerator being raised. Fig. 2 is a vertical sectional view of the refrigerator. Fig. 3 is a horizontal sectional view on line x^3-x^3 Fig. 2.

The refrigerator comprises an outer casing having an open metallic frame formed of vertical corner posts 1 and cross bars 2. In the form shown in the drawings angle bars are used, the corner posts 1 extending below the cross bars 2 and having their lower ends turned back upon themselves forming legs 3 for supporting the refrigerator. The corner posts 1 are joined at their upper ends by means of U-shaped bars 4 secured thereto in any suitable manner. The sides of the outer casing consist of wire screen 5 or other foraminous material secured to the frame in any suitable manner. On the inner side of each screen 5 is a sheet or layer of asbestos 6, the upper end of each screen 5 and sheet of asbestos 6 extending within the open end of the U-shaped bars 4, thereby securely holding the screen and asbestos together and furnishing the upper edge of the outer casing of the refrigerator. The bottom of the outer casing consists of a plurality of strips of metal 7 secured at their ends to the cross bars 2 and which support a wire screen 8 and sheet of asbestos 9. The outer

casing is provided with a lid 10 hinged at 11 to one of the U-shaped bars.

The top or lid 10 consists of a metal frame 12 U-shaped in cross section, the open side of which engages two wire screens 13 and 14. The central portion of screen 14 is spaced apart from the screen 13 a sufficient distance to permit a sheet 15 of asbestos to be interposed therebetween. The top 10 is provided with a central opening 16 for the purpose hereinafter specified.

The refrigerator is provided with an inner casing 17 of sheet metal spaced apart from the outer casing and having its sides and bottom covered with sheets or layers of asbestos 18 and 19, respectively, and provided with a top or lid 20 hinged at 21 to the inner casing 17. The lid 20 consists of an inner sheet of metal 22 and an outer sheet of wire screen 23, the central portion of the sheet of metal 22 being spaced apart a sufficient distance from the screen 23 to receive a sheet of asbestos 24. The space 25 between the inner and outer casings of the refrigerator is filled with charcoal or similar substance of a porous nature and is closed at its upper end by means of a reservoir or trough 26 which extends entirely around the upper portion of the inner casing 17. The reservoir 26 is provided with perforations 27 extending along each side of the bottom and arranged in such a manner that the contents of the reservoir will be delivered through the perforations 27 to the upper portion of the asbestos sheets 6 and 18.

The reservoir 26 is provided with a plurality of nipples 28 which are arranged with their upper ends flush with the top of the trough or reservoir 26 and having their lower ends extending a short distance below the reservoir and abutting against the upper end of a hollow tube or column 29 formed of screen circular in cross section and extending through the space 25 from the nipples 28 to the screen 8. Each tube 29 is surrounded with a layer or sheet of asbestos 30.

With the construction above described a space 31 is left between the lid 10 of the outer casing and the lid 20 of the inner casing. This space 31 is open to the outer air through opening 16 in the lid 10, also through nipples 28 and tubes 29 to the space below the refrigerator so that air may circulate freely through the tubes 29.

For the purpose of ventilating the chamber 32 in which produce is stored, an air inlet pipe 33 is provided which extends downwardly through the space 25, thence
5 through the screen 8 to the outer air, a suitable valve 34 being provided for the regulation of air, and an outlet pipe 35 is also provided in the upper portion of the casing 17 which extends outwardly through the
10 outer casing to the outer air and being provided with a regulating valve 36.

Supported on cross bars 37 is a drawer or receptacle 38 to receive any moisture that may drop from the refrigerator. A deflector 39 of sheet metal is secured to the
15 underside of the cross bars 2 and extends downwardly and inwardly therefrom, so that the moisture from the walls of the refrigerator will be directed into the receptacle 38.
20

The refrigerator is used in the following manner: Water is poured into the reservoir or trough 26 which flows out through the perforations 27 onto the asbestos sheets 6
25 and 18 also through perforations 40 in the bottom of reservoir 26 onto the asbestos 30 surrounding the tubes 29. The asbestos readily absorbs the water and soon becomes moist throughout. The sheets of asbestos 6
30 and 9, also the asbestos 30 surrounding the tubes, are all in contact with the outer air and form evaporating surfaces from which the moisture is taken up by the surrounding air. As the moisture is taken up from the
35 sheets 6, 9 and 30, moisture is drawn from the sheet 18 through the medium of the charcoal or other similar filler to the exposed surfaces of the asbestos into contact with the air, which action is accompanied
40 with a consequent lowering of the temperature of the inner casing and chamber 32. Suitable shelves 41, 42 are provided in the chamber 32.

The refrigerator as above described has a
45 very large evaporating surface and produces a degree of coldness sufficient to retain the produce therein in proper condition for a reasonable length of time.

What I claim is:—

50 1. A refrigerator comprising an imperforate inner casing having a layer of absorbent material on the outer side thereof, an outer casing spaced apart from the inner casing consisting of a foraminous outer wall and a
55 layer of absorbent material on the inner side thereof, a porous filler between the sides and bottom of said outer and inner casing, and a reservoir surrounding said inner casing at the top thereof and within the outer casing,
60 said reservoir having perforations in the bottom thereof arranged to deliver the con-

tents of said reservoir to the layers of absorbent material on the outer and inner casing.

2. A refrigerator comprising an inner 65 casing having a layer of absorbent material on the outer side thereof, an outer casing spaced apart from the inner casing consisting of a foraminous outer wall and a layer of absorbent material on the inner side there- 70 of, a reservoir surrounding said inner casing at the top thereof, said reservoir having outlets in the bottom thereof arranged to deliver the contents of said reservoir to the said layers of absorbent material, tubes of 75 foraminous material between said outer and inner casing extending from said reservoir to the bottom of said outer casing, a layer of absorbent material around said tubes, and a filler of porous material between said outer 80 and inner casings below said reservoir in the space between said tubes.

3. A refrigerator comprising an imperforate inner casing having a lid hinged to the top thereof, a layer of absorbent material on the 85 exterior of said inner casing, a foraminous outer casing spaced apart from the inner casing having a lid hinged to the top thereof, a layer of porous material on the inner side of said outer casing, a reservoir 90 surrounding said inner casing at the top thereof within the outer casing and having a plurality of outlet openings arranged in rows to deliver water to the top of the layers of porous material on the inner and outer 95 casing, and a filler of porous material between said inner and outer casing.

4. A refrigerator comprising an inner casing having a lid hinged to the top thereof, a layer of absorbent material on the exterior 100 of said inner casing, a foraminous outer casing spaced apart from the inner casing having a lid hinged to the top thereof, a layer of porous material on the inner side of said outer casing, a reservoir surrounding said 105 inner casing at the top thereof having a plurality of outlet openings, a plurality of nipples extending through the bottom of said reservoir, foraminous tubes extending from the lower end of said nipples to the forami- 110 nous bottom wall of the outer casing, a layer of porous material around each of said tubes, and a filler of porous material between said tubes.

In testimony whereof, I have hereunto set 115 my hand at Los Angeles, California, this 13th day of June 1910.

WILLIAM M. STROTHER.

In presence of—

FRANK L. A. GRAHAM,
P. H. SHELTON.