

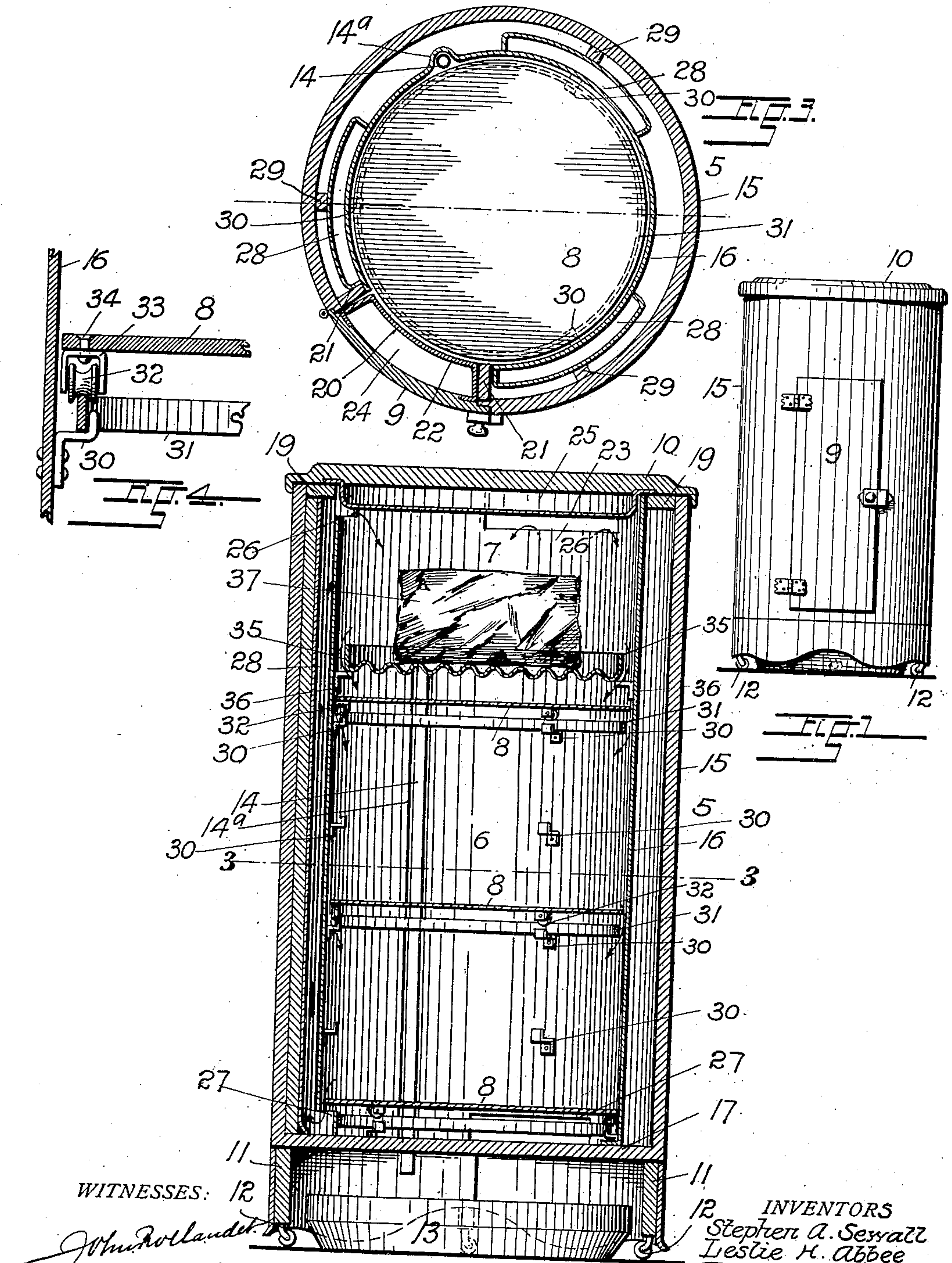
No. 824,387.

PATENTED JUNE 26, 1906.

S. A. SEWALL & L. H. ABBEE.
REFRIGERATOR.

APPLICATION FILED FEB. 18, 1905.

2 SHEETS—SHEET 1.



WITNESSES: 12

John Hollandet
A. M. Stimp

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Stephen A. Sewall
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THEIR ATTORNEY.

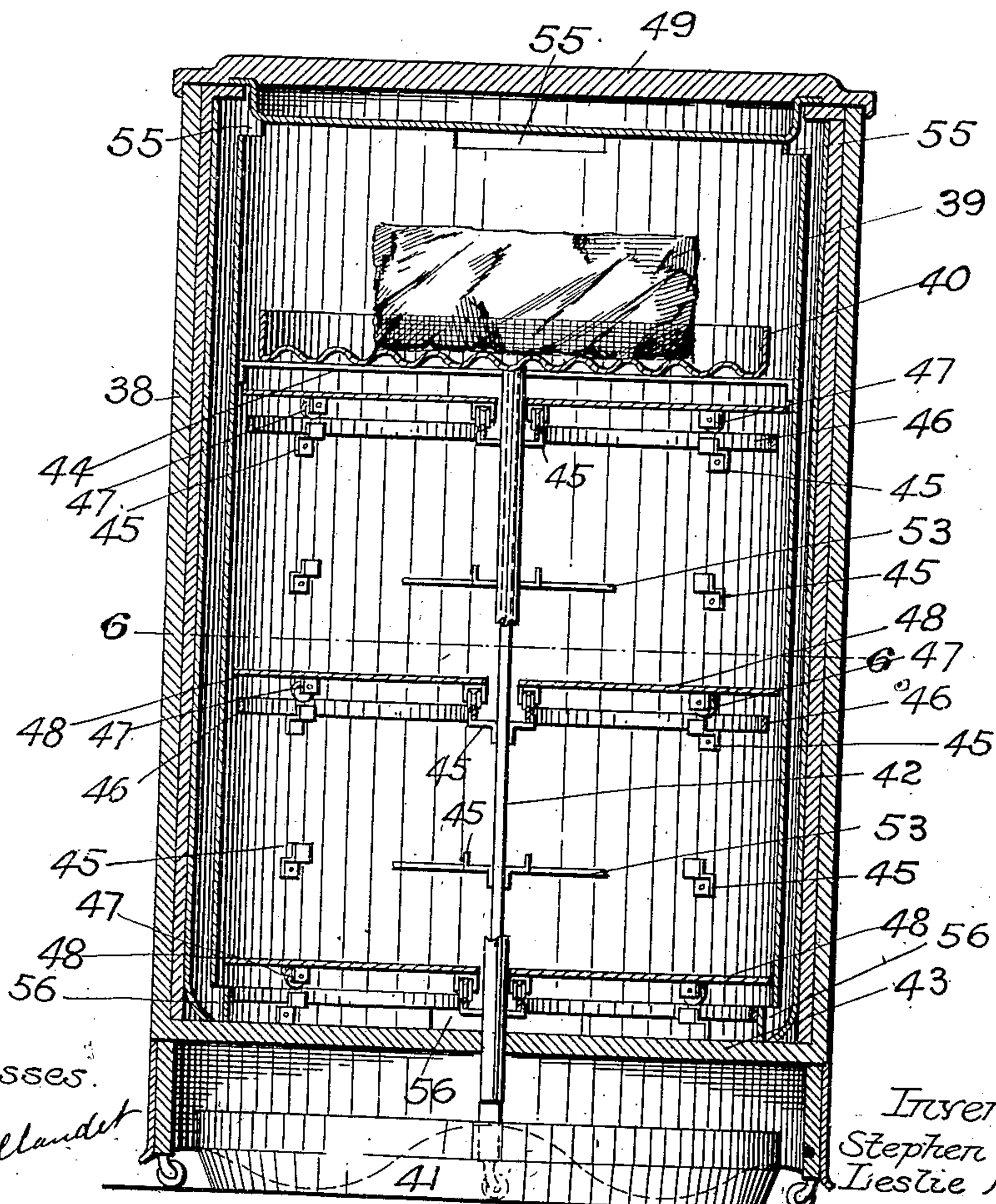
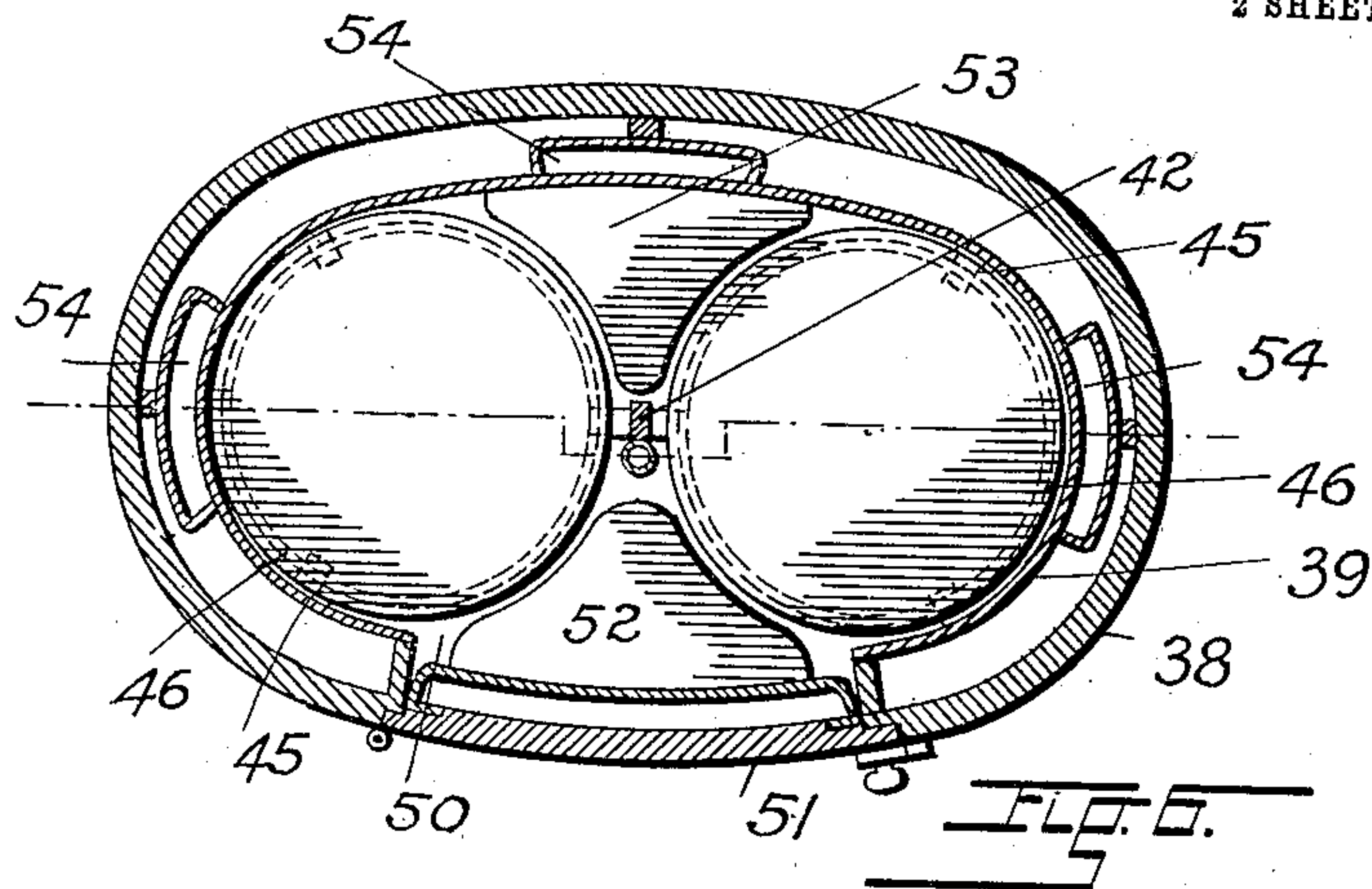
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by

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UNITED STATES PATENT OFFICE.

STEPHEN A. SEWALL AND LESLIE H. ABBEE, OF DENVER, COLORADO.

REFRIGERATOR.

No. 824,387.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed February 18, 1905. Serial No. 246,315.

To all whom it may concern:

Be it known that we, STEPHEN A. SEWALL and LESLIE H. ABBEE, citizens of the United States of America, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification.

Our invention relates to the class of devices used for the preservation of perishable food and commonly known as "refrigerators." Its objects are to produce a device of the class named, which being most simple in construction may be manufactured at low cost, which, having revoluble shelves, permits any article deposited thereon to be brought within easy reach of the hand, which, being cylindrical in form, and thus devoid of angles and corners, prevents the accumulation of dirt and facilitates cleaning, and which, having removable and vertically-adjustable shelves, may readily be adapted for the accommodation of varied-sized vessels and merchandise.

Our construction, furthermore, insures perfect insulation of the ice and provision chambers from atmospheric influences, thus rendering the device, in addition to the above-mentioned sanitary and labor-saving advantages, most economical in use.

We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents the device in elevation; Fig. 2, an enlarged vertical section there-through; Fig. 3, a cross-section taken along the line 3 3, Fig. 2; Fig. 4, an enlarged view of the track and wheels used for revolving the shelves; Fig. 5, a vertical section showing a modified form of our device; and Fig. 6, a cross-section taken along line the 6 6, Fig. 5.

Similar reference characters refer to similar parts throughout the various views.

The device consists of a double-walled cylindrical box or casing 5, the interior of which is divided into the provision-chamber 6 and a superposed ice-chamber 7. The former is provided with a series of revoluble vertically-adjustable shelves 8, access to which may be had by means of a door 9. The casing being open on top is surmounted by a lid or cover 10 and is supported on suitably-constructed legs 11, having casters 12. A pan 13, placed beneath the casing, collects the water constantly supplied by the melting ice and conducted thereto from the ice-

chamber by a downwardly-extending drain-pipe 14. Box 5 consists of two concentrically-located cylindrical casings 15 and 16, spaced from each other, the outer one 15 being provided with a preferably integral bottom 17 and composed of fiber or other non-conductive material, while the inner casing 16, resting on said bottom, may be made of galvanized iron or other suitable substance. The annular chamber 18, formed between the walls of the two casings, is closed on top by a ring 19, thus providing a dead-air space around the ice and provision chambers, which effectively insulates them from the influences of the surrounding atmosphere. An opening 20 in the inner casing affords access to the provision-chamber and may be closed by the above-mentioned door 9, which forms part of casing 15. The annular chamber 18 at this point is sealed by partitions 21, extending vertically between the bottom 17 and the annular ring 19 at both sides of the door-opening 20. Both door 19 and the before-mentioned cover 10 are provided with recessed linings 22 and 23, the flanged edges of which are secured, respectively, to the inside of the door and of the cover, thus providing the insulating dead-air spaces 24 and 25.

Extending vertically through the annular chamber 18 and communicating with the ice and provision chambers by means of openings 26 and 27, cut, respectively, in the upper and lower edges of casing 16, are the air-flues 28; which conduct the warm air from chamber 6 into the ice-chamber in the direction of the arrows.

To insure stability of the inner casing, as well as to strengthen the entire structure, vertically-extending cleats 29 are placed between and secured to the flues 28 and the outer casing 15. As mentioned heretofore, the shelves 8 are revolubly mounted inside the inner casing 16, which to this end has been provided with a number of preferably equidistant horizontally-disposed series of brackets 30, adapted to support the circular rails 31. Shelves 8 are provided at their lower surface with three or more grooved wheels 32, rotatably mounted in appropriately constructed hangers 33, which are secured to the shelves by rivets 34 or other suitable means. Shelves 8 are diametrically smaller than the inside of the casing in which they are mounted, leaving an annular space between the two for the free passage of the

cooled air from the ice-chamber to the lower part of the casing.

It is preferable that the number of series of brackets should exceed the number of rails and shelves, so that for the accommodation of unusually tall articles, such as vases of cut flowers, the distance between two shelves may readily be increased by lifting the rail and the thereby-supported shelf out of one set of brackets and depositing same in the set above it or, should still more room be required, by removing one or more of the rails and shelves through opening 20 in the casing. The division between ice-chamber 7 and the thereunder-located provision-chamber 6 is effected by a shallow circular transversely-disposed pan 35, spaced from casing 16 and supported by a set of brackets 36, secured thereto. The bottom surface of pan 35 is preferably corrugated, as shown in the drawings, for the purpose of keeping the bottom of the thereon resting ice 37 out of contact with the water, which as the ice melts accumulates in the bottom of the pan. This water is, as mentioned heretofore, drained from pan 35 and conducted to the pan 13 by a pipe 14, which communicates with the ice-pan by an opening cut in its lower surface. Pipe 14 is preferably placed in a correspondingly-shaped recess 14^a in the inner casing 16, which arrangement not only prevents interference with the revolving shelves, but renders the pipe accessible in case of leaks or other repairs.

As the majority of articles deposited in a refrigerator are round, the circular shelves have the advantage of affording better accommodation for the storage of dishes, &c., than a square shelf of equal dimensions, while their rotary movement greatly facilitates the deposition and removal of articles in and from the box.

In keeping with the law of nature that warm air rises and cold air falls a constant current of cooled air is created around the articles deposited in chamber 6 by means of the flues 28, which, drawing the heated air from the provision-chamber through openings 27, conducts it through openings 26 into the ice-chamber. Here the air is cooled by contact with the ice 37 to subsequently reënter chamber 6 through the annular space between pan 35 and the casing.

The form of our device illustrated in Figs. 5 and 6 is more especially adapted for use in hotels, boarding-houses, and other large establishments.

The general construction of the refrigerator is practically the same as the one heretofore described, with the exception that the capacity of the box has been doubled by providing two adjoining sets of shelves, to which end the outer and the inner casings 38 and 39, as

well as the ice and drip pans 40 and 41, have been made elliptical in form. A support 42 extends vertically in the center of the casing from the bottom 43 to a point in suitable proximity to the ice-pan 40, where it is secured to one or more transversely-disposed braces 44, which being secured to the sides of the casing support the ice-pan 40. One of each set of the rail-supporting brackets 45 is secured to the upright 42, the others being equidistantly disposed along the inner wall of the casing, as in the single form illustrated in Figs. 1 and 2. The rails 46, located on either side of the upright, support the grooved rollers 47 of shelves 48, as heretofore described. The cover or lid 49 is formed to correspond with the elliptical casing. The opening 50 in the inner casing has been made sufficiently large to afford access to both sets of shelves, and the door 51 has been provided with a series of stationary shelves 52, thus increasing the storing capacity of the box. Similar shelves 53 may be disposed along the inner wall of the provision-chamber opposite opening 50, as shown in the drawings.

54 represents the air-flues, 55 the openings in the ice-chamber, and 56 those in the provision-chamber.

We wish it understood that variations in the form and arrangement of the various parts comprised in our device, as well as in the manner of supporting the revolving shelves, may be availed of within the principle of our invention.

Having thus described our invention, what we claim is—

1. A refrigerator comprising a cylindrical casing having an ice and a provision compartment, the latter being provided with superposed series of lugs, circular rails removably supported on said lugs and circular shelves having wheels adapted to be presented in operative relation to said rails.

2. A refrigerator comprising a cylindrical casing having an ice and a provision compartment, circular rails mounted to be vertically adjustable within the latter and shelves having wheels adapted to be presented in operative relation to said rails.

3. A refrigerator comprising a casing having an ice and a provision compartment, rails mounted to be vertically adjustable within the latter and shelves having wheels adapted to be presented in operative relation to said rails.

In testimony whereof we have affixed our signatures in presence of two witnesses.

STEPHEN A. SEWALL.
LESLIE H. ABBEE.

Witnesses:

G. J. ROLLANDET.
K. M. STUMF