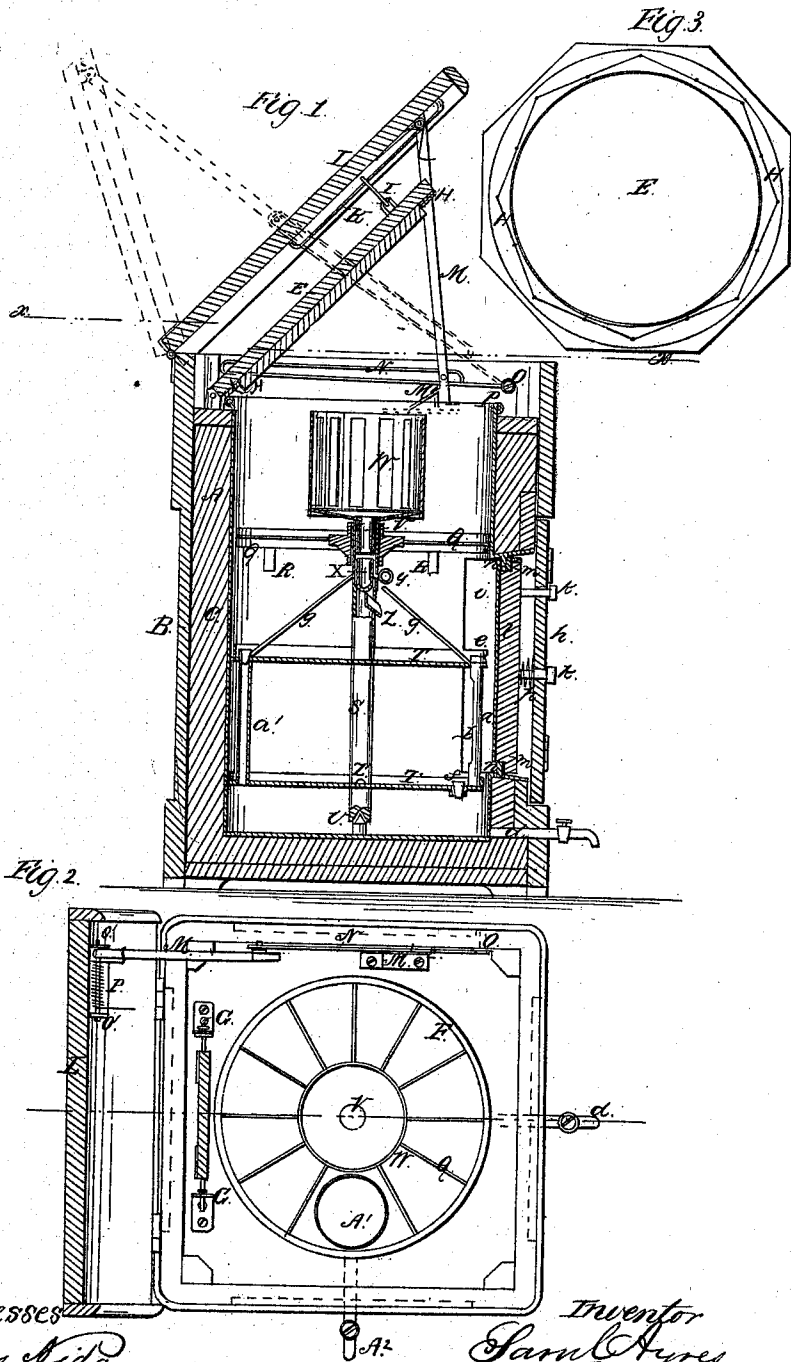


S. Ayers.
Refrigerator.

No. 98010.

Patented Dec. 21. 1869.



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SAMUEL AYRES, OF DANVILLE, KENTUCKY.

Letters Patent No. 98,010, dated December 21, 1869.

IMPROVED REFRIGERATOR.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, SAMUEL AYRES, of Danville, in the county of Boyle, and State of Kentucky, have invented a new and improved Refrigerator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in refrigerators, and consists in certain improvements in the construction and arrangement for excluding the external atmosphere, distributing the cold by means of the ice, and also the water resulting therefrom, to economizing space, and to provide convenient access to all the different parts, all as hereinafter more fully specified.

Figure 1 is a sectional elevation of a refrigerator constructed according to my improvement.

Figure 2 is a horizontal section of the same, taken on the line $x x$ of fig. 1.

Figure 3 is a detail view.

Similar letters of reference indicate corresponding parts.

A is a sheet-metal cylinder, open at the top, slightly inclined to one side at the bottom, and incased in another case, B, of wood, larger than the said cylinder, and packed in the space between the walls of the two with any preferred non-heat-conducting substance, C. The said outer case is, preferably, made square, but may be of other form.

The top of the cylinder rises slightly above the packing C, and receives the door or valve E down upon its wired upper edge, F.

This valve is hinged in slotted bearings G, designed to permit it to rest fairly on the edge F all around, to insure an air-tight joint, the said valve being provided with a circular strip of felt, H, or other suitable flexible and elastic substance, best calculated to make an air-tight joint when resting on the said wire edge.

This valve or cover is provided with a hook, I, which may or may not be engaged with the link K, on the under side of the cover L of the case B, to be raised by it.

The cover L of the case B is provided with a prop, M, pivoted to it near the swinging edge, and connected by a stud-pin with the slotted stay-rod N, pivoted to the case at O, arranged for action in conjunction for holding the cover, when swung back to the position represented in dotted lines, or for supporting the said cover in the position represented in black lines in fig. 1, by the action of the prop M alone, resting on the top of the filling C, or the cover thereof in front of

the stop M', while the slotted stay-rod is folded down in the top of the case.

The said prop-rod is pivoted to the cover by the rod O', whereon a spring, P, is coiled, and applied to the rod so as to have a constant tendency to press the end connected with the stay-rod N down, to insure the folding of the rod within the case when the cover is folded down.

Within the cylinder A, a short distance below the top, is a circular rack, Q, resting on brackets R, attached to the wall of the said cylinder. This rack serves to receive and hold the articles to be preserved, which are admitted through the top.

It has a hole in the centre, and receives and supports the upper end of the hollow shaft S of a circular rack-stand, of two or more circular shelves T.

This shaft is stepped in a suitable pivot-centre, U, at the bottom, and is arranged to revolve readily.

It receives in its hollow upper end the tubular central projection V, of a wire or other ice-basket, with slotted or perforated sides. This basket is so situated at the top and centre, that the cold given out from it is imparted to the contents of the case to the best advantage, no dead-walls intervening, and the water from the ice being conducted to the shelves below, to circulate under the vessels placed therein, in a way to cool them and the surrounding space.

This ice-water may be deflected from the hollow shaft S to the upper shelf, or allowed to pass to the lower one by the cut-off X, consisting of a cup fitting the tube S under the tube V, receiving the water therefrom and delivering it through a hole at one side of the centre of the bottom, which may either be brought by turning it on its vertical axis by the pin Y, to deliver the water to the short spout Z for delivery to the upper shelf, or behind the said spout for delivery to the shelf below through the hole Z'.

These shelves are corrugated or grooved, to insure a free circulation of the water under the vessels placed on them.

When the water is turned through the spout to the upper shelf, it is conveyed from there to the lower one through the hollow posts a , to the lower shelf. These posts serve also for rigidly connecting the shelves together for strengthening them, and considerable portions thereof, between the top and bottom, are cut away, as shown at b , to facilitate cleaning them from the sawdust or other matter adhering to the ice, and liable to clog such passages.

Some of these hollow posts, as a' , may be used to discharge the water from the upper shelf through the lower one to the bottom of the cylinder, where it is drawn off through the cock d .

In this case, the posts will only rise as high as the upper surface of the shelf, while the other hollow posts rise sufficiently above to maintain a depth of water thereon when the posts *a'* are plugged, equal to about half the height of the rim *e*.

The water may be drawn from the lower shelf through the hole *f*.

g represents inclined braces, reaching from the shaft above the shelves to the outer edges thereof, for supporting them more firmly.

h represents a door through the outer case, opening in front of a large opening, *i*, through the wall of the cylinder A, extending vertically from the lower shelf to the rack Q.

This door supports on the inside, by a central stud-pin, *k*, and one or more pins *k'*, passing loosely through it, another door or cover, *l*, for closing the said opening *i*, and provided with felt or other suitable packing-substance *m* on the margin, which bears against the flange *n*, around the said opening, to make an air-tight joint.

Between these two doors, and on the stud-pin *k*, a coiled spring, *p*, is arranged, which presses the door *l* down on its seat, when the outer door is fastened shut, by pressure at the centre, which admits it to bear fairly on all parts of its seat.

I propose to fasten these strips of felt or other soft packings to the doors or valves, by stitching with strong threads, running the stitches in a zigzag course across the line of the bearing-surfaces, so that the depressions where the stitches pass through the packing, and the boards, will not interfere with or prevent the said packings from bearing fair upon the seats.

A' represents a water-vessel which may be placed on the rack Q, and provided with a cock, *A*², passing through the side of the case, for convenience in drawing the water therefrom for use. This water-vessel may be used or not, as preferred.

By this arrangement, within the cylindrical case A, of the rack Q, accessible from the top, and the revolving rack, to which access is had through the side, the

greatest economy of space and convenience of access is obtained.

Having thus described my invention,
I claim as new, and desire to secure by Letters Patent—

1. The combination of the exterior case B, cylindrical case A, fixed rack Q, and revolving rack T, and ice-basket W, when arranged for access through the top and side, and with non-heat-conducting packing in the space between the two cases, as specified.

2. The arrangement of the hollow shaft S, shelves T, fixed rack Q, and ice-basket W, substantially as specified.

3. The arrangement, with the hollow shaft S, and shelves T, of the ice-basket W, oscillating cut-off X, spout Y, and water-passage Z', substantially as specified.

4. The arrangement, with the shelves T, of the hollow posts *a'*, in the double capacity of water-conductors and connecting supports, substantially as specified.

5. The arrangement within the cylinder A, on a revolving central tube, resting upon a centre at the bottom of an ice-basket and a series of shelves, the said shaft being arranged to convey the water from the basket to the shelves, substantially as specified.

6. The arrangement, with the upper wired edge of the cylinder, of the lid B, provided with packing, as described, and hinged in slotted bearings, substantially as specified.

7. The combination, with the case A and door *h*, of the door or lid *l*, connected to the said door *h* by the central loose stud-pin *k*, and one or more pins *k'*, and provided with the spring *p*, all substantially as specified.

8. The combination, with the door L and case B, of the prop-rod M, slotted bar N, and spring hinge-joint O' P, arranged and operating substantially as specified.

Witnesses:

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