

(No Model.)

2 Sheets—Sheet 1.

T. C. BUDER & G. O. CULLEY.
REFRIGERATOR.

No. 581,454.

Patented Apr. 27, 1897.

Fig. 1.

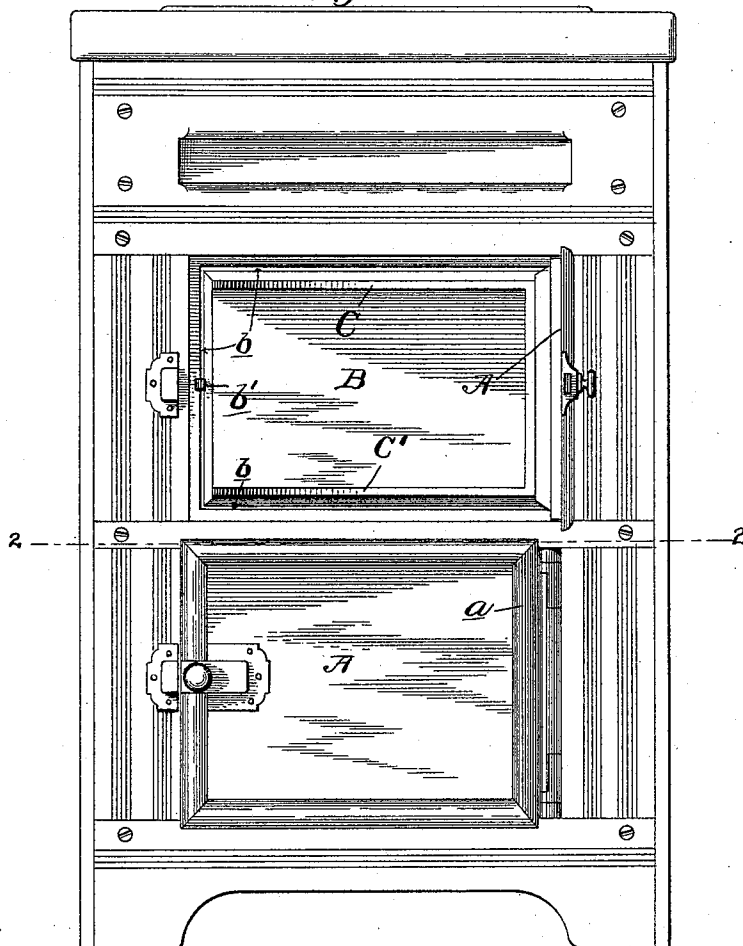
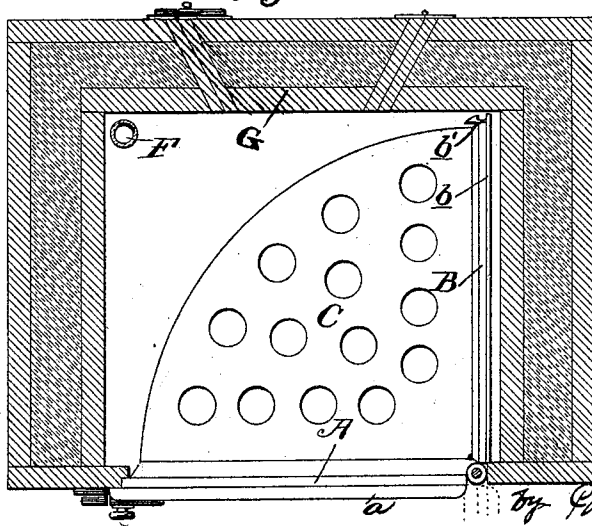


Fig. 2.



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Fig. 3.

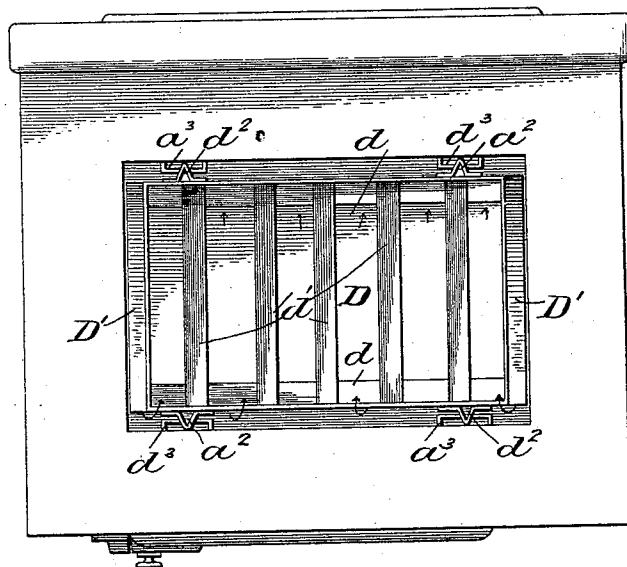


Fig. 4.

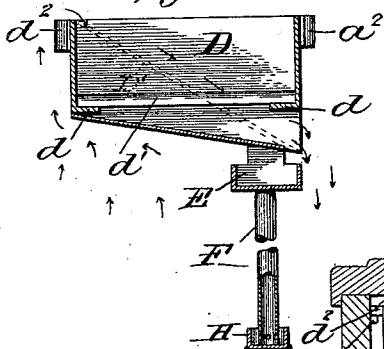


Fig. 5.

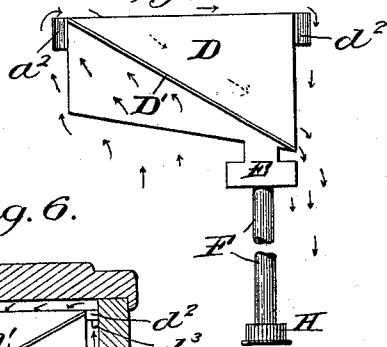
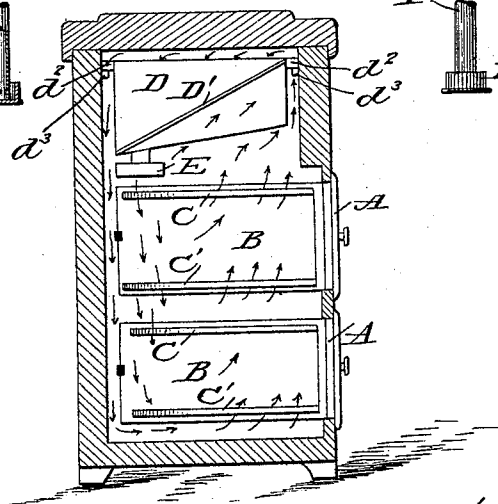


Fig. 6.



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UNITED STATES PATENT OFFICE.

THEODORE C. BUDER AND GEORGE O. CULLEY, OF ST. LOUIS, MISSOURI.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 581,454, dated April 27, 1897.

Application filed May 11, 1896. Serial No. 591,047. (No model.)

To all whom it may concern:

Be it known that we, THEODORE C. BUDER and GEORGE O. CULLEY, citizens of the United States, residing at the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Refrigerators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a front elevational view of a refrigerator embodying our invention, one of the doors being shown in an opened position. Fig. 2 is a cross-sectional view through the line 2 2, Fig. 1. Fig. 3 is a top plan view of our improved refrigerator, the lid being raised to show the position of the ice-tray. Fig. 4 is a sectional view illustrating our improved ice-tray, and Fig. 5 is an end elevational view of the tray. Fig. 6 is a vertical sectional view through the refrigerator.

This invention relates to new and useful improvements in refrigerators of that class wherein means are provided for sealing the doorways when the doors are opened to prevent outside air entering into or escape of cold air from the interior of the refrigerator.

An important feature of our present invention resides in the peculiar construction and arrangement of the ice-tray; and, further, the invention consists in the construction, arrangement, and combination of the several parts, all as will be more fully hereinafter described, and afterward pointed out in the claims.

In the drawings, A designates a door, and B a plate, which plate extends at right angles to the door and is secured thereto at its hinged end. Secured between the door and plate near their upper and lower edges are shelves C and C', the former serving as a brace while the latter is adapted to carry the articles to be placed within the refrigerator. On the upper, lower, and outer edges of plate B are formed flanges or rabbets *b*, the objects of which are to seal the doorway when the shelves are in their outer position.

When a door is opened, the shelf, being secured thereto, is moved outwardly, carrying its contents to the outside of the refrigerator within convenient reach. While the door is in this position the flanges or rabbets

b on the plate B contact with the door-casing and seal the doorway, as shown in Fig. 1. The door is held open by a catch *b'* on plate B, which catch engages with the door-casing. 55

When the door is closed, the hinged end of plate B contacts with the inside of the door-casing to seal the doorway at the hinged side, and when the door is opened the beading *a* near the hinged edge of the door contacts with the outside of the casing, as shown in dotted lines in Fig. 2, sealing the hinged side of plate B when said plate closes the doorway. 60

D indicates an ice-tray located in the upper part of the refrigerator and having turned flanges *d* for supporting the slats *d'*, upon which the block of ice is adapted to rest. The bottom of this tray is inclined and cut away at its rear edge, as shown, so that the drip-water will run into a trough E, depending beneath the tray, whence it is conducted off through the pipe F, the bottom of said pipe being provided with a suitable water-seal H, as shown, to prevent escape of the cold air. 70

The tray D is provided with lugs *d''* at its sides, which are adapted to rest upon suitable projections *d'''* on the inner walls of the refrigerator and form air-spaces between the walls of the tray and the walls of the refrigerator for circulating the air throughout the refrigerator. This circulation of the air is materially aided by flanges D', secured at each end of the ice-tray and extending from the lower rear edge to the upper front edge. (Clearly shown in Fig. 5.) 85

It is obvious that warm air will rise, while cold air will fall. The warm air rising will encounter the cold air issuing through the opening at the lower rear edge of the ice-tray and be deflected beneath the bottom of the tray and under the flanges D' to the front of the tray, whence it rises through the space between the wall of the refrigerator and front of the tray and, contacting with the ice, becomes chilled. The air having become cold will pass over and down through the air-space at the rear and the opening in the tray, where it has practically an unobstructed passage to the bottom of the refrigerator at the rear, owing to the peculiar construction of the shelves, as clearly shown in Fig. 2. In Figs. 3, 4, and 5 we have illustrated, by arrows, the direction of the current of circulating air. 100

It will thus be seen that by our present invention we have produced a simple and efficient means for maintaining a constant circulation of the air within the refrigerator.

- 5 For the purpose of gaining access to the interior of the refrigerator to clean the same we provide a door in the rear wall, as shown at G in Fig. 2.

10 In the drawings we have shown a practical embodiment of our invention; but it is to be understood that many minor changes and alterations in the construction, arrangement, and combination of the several parts of our refrigerator can be made and substituted for
15 those herein shown and described without departing from the nature and principle of the invention.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

- 20 1. In a refrigerator, the combination of an ice-tray located within the upper portion thereof, said tray having an opening at its lower rear edge, inclined flanges at each end
25 of the tray, whereby the rising warm air is deflected to the front and the cold air allowed

to descend at the rear, thereby creating a constant circulation of air throughout the refrigerator; substantially as described.

2. In a refrigerator, the combination with 30 the doors, carrying perforated shelves, said shelves being so constructed that an unobstructed passage is formed at the rear of the refrigerator, of an ice-tray located in the upper part of the refrigerator, having an open- 35 ing at its lower rear edge, and deflecting-flanges at each end of the tray, whereby, rising warm air is caused to pass to the front and over the tray, and becoming chilled by contact with the refrigerating agent, passes 40 through the opening in rear of the tray, where it has an unobstructed passage to the bottom of the refrigerator; substantially as described.

In testimony whereof we hereunto affix our signatures, in presence of two witnesses, this 45 8th day of May, 1896.

THEODORE C. BUDER.
GEORGE O. CULLEY.

Witnesses:

HUGH K. WAGNER,
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