

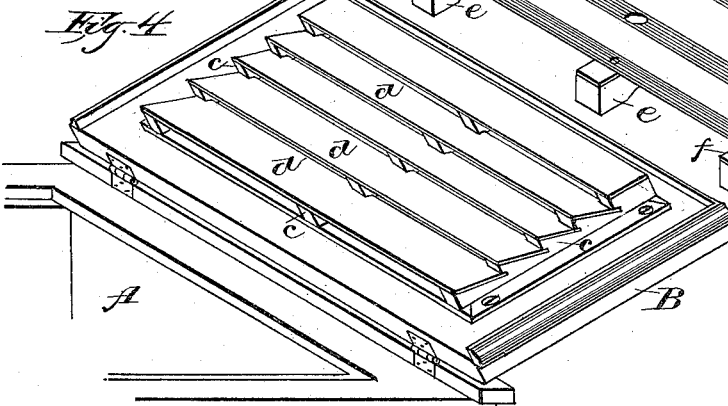
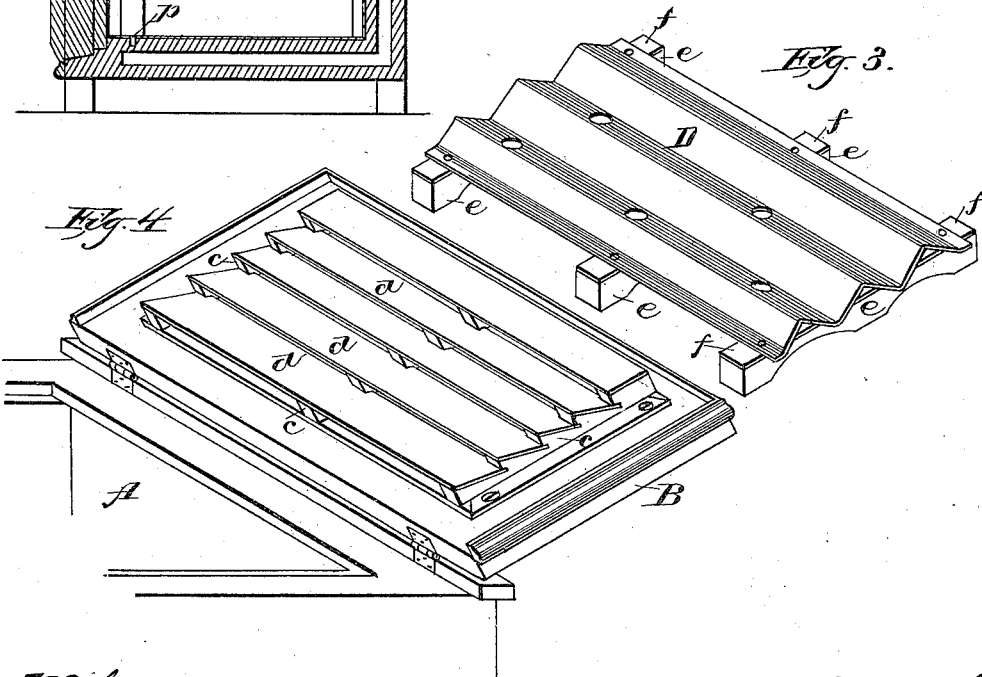
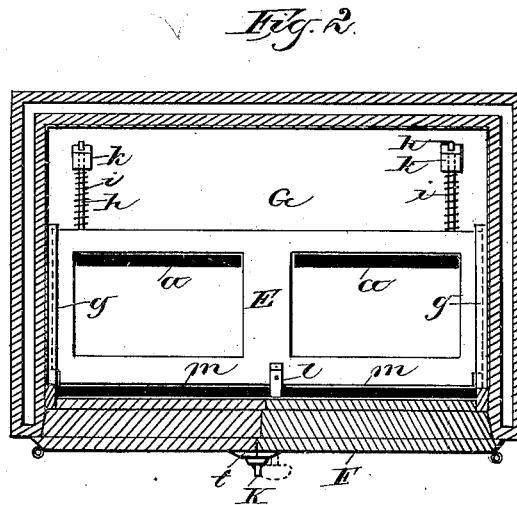
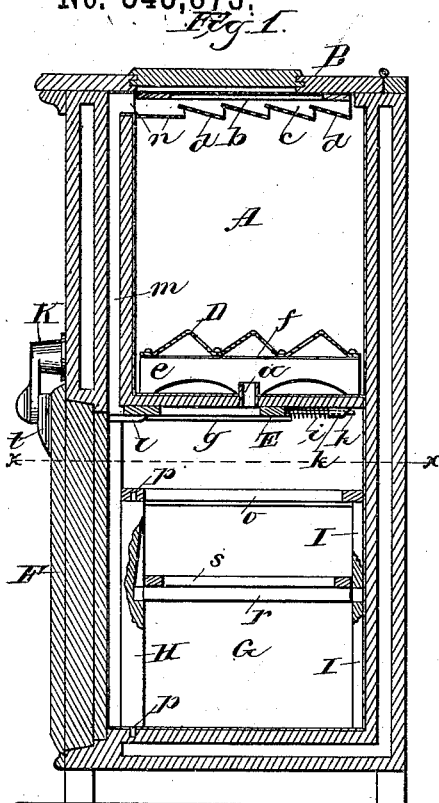
(No Model.)

2 Sheets—Sheet 1.

W. A. WALKER.
REFRIGERATOR.

No. 343,873.

Patented June 15, 1886.



Witnesses:
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Maurice J. Trear.

Inventor:
William A. Walker
By *Stout & Underwood*
Attorneys.

(No Model.)

2 Sheets—Sheet 2.

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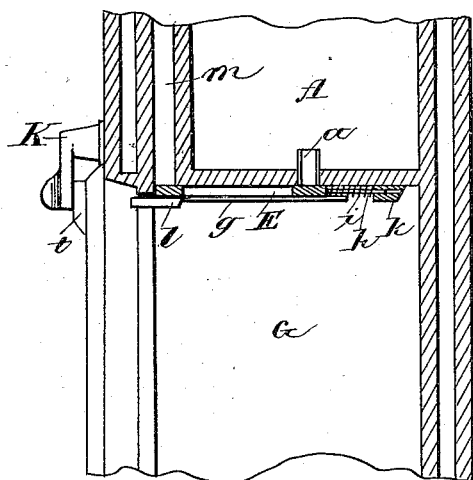
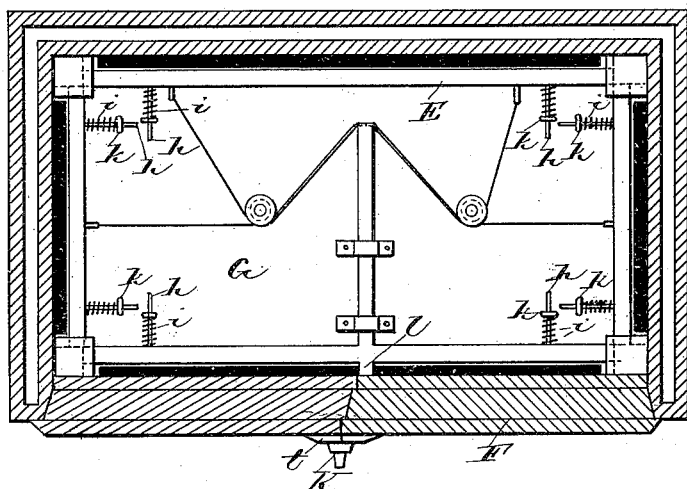


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM A. WALKER, OF RACINE, WISCONSIN.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 343,873, dated June 15, 1886.

Application filed October 16, 1885. Serial No. 180,054. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. WALKER, of Racine, in the county of Racine, and in the State of Wisconsin, have invented certain new and useful Improvements in Refrigerators; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to refrigerators; and it consists in certain peculiarities of construction, as will be hereinafter described.

In the drawings, Figure 1 represents a vertical transverse section of my refrigerator; Fig. 2, a horizontal section on line *x x*, Fig. 1, looking up and showing the closing mechanism for the air-passages; Fig. 3, a perspective view of the ice-rack; Fig. 4, a similar view of the lid and air-distributor; Fig. 5, a detail sectional view showing the air-passages closed, and Fig. 6 a detail view of a closing mechanism for a series of air-passages more than two.

A represents the zinc-lined ice-chamber of my refrigerator, provided with a hinged cover, B, the latter being also zinc-lined upon its inner face, and the bottom of this chamber is provided with openings or air-passages *a*.

To the inner face of the lid B is detachably connected a suitable frame, *b*, having secured thereto two or more cleats, *c*, said cleats being formed with a series of angular notches adapted to receive deflecting slats *d*, said slats being preferably of zinc, and so attached to the cleats as to be easily removed for the purpose of cleaning.

Adapted to fit loosely in the ice-chamber A is an ice-rack composed of an angularly-corrugated plate, D, provided with a series of perforations and secured to cleats *c*, said cleats being faced upon their upper sides with metallic strips *f*, to protect the wood from the drippings of the ice. The cleats *c* are cut out on their under sides, so as not to impede the circulation of air, the perforations in said angularly-corrugated plate also serving to allow the air to circulate freely about the ice, as well as to permit the drip from the latter to find ready passage to the bottom of the chamber. Upon the under side of this ice-chamber bottom are suitably-secured guides *g*, to retain in operative position a damper, E. This damper has projected from its rear side pins *h*, around which are placed spiral springs *i*, said

springs abutting against the rear side of the damper E, and stops *k*, secured to the under side of the ice-chamber, these stops being centrally perforated to allow the projecting pins *h* to operate therein. When the refrigerator-door F is closed, it comes in contact with a finger, *l*, secured to and projecting from the front side of the damper E, and thus the latter is forced back to open the air passage or passages *a* in the ice-chamber, and another passage, *m*, between said chamber and the outer casing of the refrigerator. These passages being opened, the warm air in the keeping-chamber G ascends the passage *m*, and is cooled by contact with the wall of the ice-chamber. As the air continues to ascend it finds an inlet, *n*, into the ice-chamber, and is met by the metallic slats *d* on the angularly-notched cleats *c*, secured to the lid B, and by contact with these metallic slats the air is further cooled, thereby effecting a saving in ice. Not only do the metallic slats aid to cool the air, but they also serve to deflect and evenly distribute the same over the entire surface of the ice, thereby effecting a more rapid condensation. The condensed air finds its way to the keeping-chamber G through the opening or openings *a* in the bottom of the ice-chamber, and as it finds its way into said keeping-chamber forces the heated air therein to ascend the passage *m*, thus keeping up an even circulation throughout the entire refrigerator. Should the door F of the refrigerator be opened, pressure will be removed from the finger *l*, and the expansion of the springs *i* will force the damper E outward to automatically close the air-passages *a m*, thus cutting off circulation and maintaining an even temperature in the ice-chamber, as well as effecting a saving of ice by preventing the outside air from rising and coming in contact therewith. This cut off or damper for the air-passages may be varied to meet the requirements of any size, shape, or number of passages.

In Fig. 6 I show four dampers arranged to operate in connection with a relative number of air-passages. These dampers have projecting pins and spiral springs similar to the one above described, and are connected to the inner end of the finger *l* by means of cords or chains extended over pulleys pivoted to the

bottom of the ice-chamber, said finger operating in suitable guides. When pressure is exerted against the finger *l* by the closing of the door *F*, the cords or chains draw the dampers toward the center of the refrigerator to open the passages, and when pressure is removed the expansion of the springs forces said dampers outward to close said passages. The keeping-chamber *G* has an upper rack-shelf, *o*, extended from side to side of said chamber, and centrally supported by posts *H I*. The rear post, *I*, is rigidly secured to the back wall of the keeping-chamber, while the front one, *H*, is made removable by means of pins *p* in its upper and lower ends adapted to engage sockets in the floor of said chamber and the frame of the upper rack-shelf, *o*. The rear post, at or near its center, is formed with a mortise adapted to engage a tenon on one end of a horizontal supporting-beam, *r*, provided at its other end with a tenon to engage an angular groove in the front post, *H*, so that said horizontal beam may be independently removed, if found desirable. The beam *r* acts to support the opposing inner ends of short rack-shelves *s*, the outer ends of said short shelves being supported by cleats on the inner end walls of the keeping-chamber. Either or both of these short shelves may be readily lifted out when necessary or desirable, and the entire shelving and front post may be entirely removed at one operation by simply lifting said front post so as to disengage its lower pin from the socket in the floor of the keeping-chamber, thus leaving said chamber clear.

To insure a tight closing of the refrigerator door or doors, I provide the same with plates *t*, having inclined outer faces adapted to come in contact with a pivoted weighted latch, *K*. This latch comes first into contact with the thinner portion of either of the plates, and as it approaches the center exerts a gradual pressure to tightly close and retain the door or doors in this closed position.

In refrigerators having two doors the one, *F*, is designed to be opened first, so as to permit the closing of the air-passages before opening the other of said doors.

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

1. In a refrigerator having a system of air-passages, the lid thereof provided with a detachable frame having angularly-notched cleats, and removable deflecting slats secured in the notches of said cleats, in combination with a damper for the air-passages automatically operated by the opening and closing of the refrigerator-door, substantially as and for the purpose set forth.

2. In a refrigerator, an ice-rack consisting of a perforated angularly-corrugated plate mounted on cleats cut out upon their under sides and faced upon their upper sides, substantially as shown and described.

3. In a refrigerator, an air-distributor for the ice-chamber, consisting of a suitable frame adapted to be detachably connected to the lid of said chamber, angularly-notched cleats secured to the frame, and deflecting slats adapted to be removably secured in the angular notches of said cleats, substantially as and for the purpose set forth.

4. In a refrigerator, a system of shelving centrally supported by a rigidly-secured rear post, a removable front post and horizontal beam, the latter having tenoned ends adapted to fit a mortise in the rear post and an angular groove in the front post, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

WILLIAM A. WALKER.

Witnesses:

S. S. STOUT,

H. G. UNDERWOOD.