2 Sheets—Sheet 1.

L. B. WOOLFOLK.

Refrigerator.

No. 214,225. **Patented April 8, 1879.**

Fig. 2.

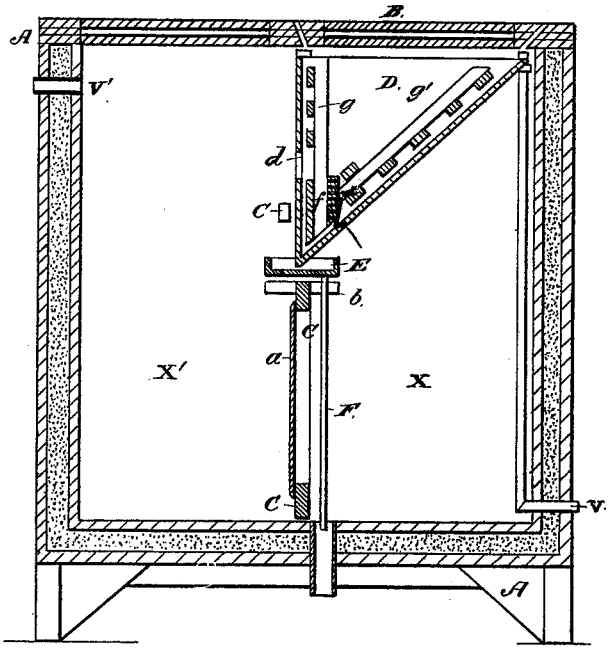


Fig. 3.

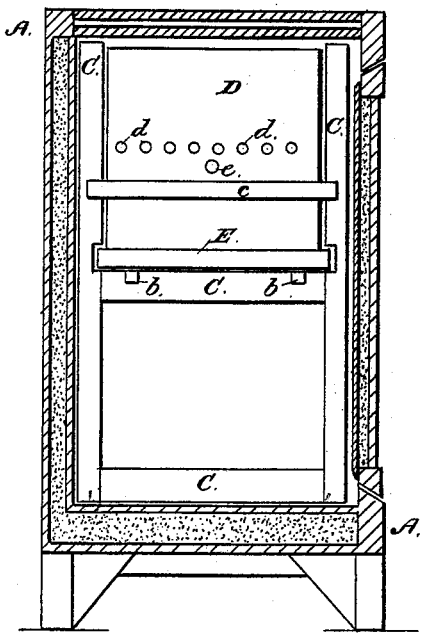


Fig. 1.

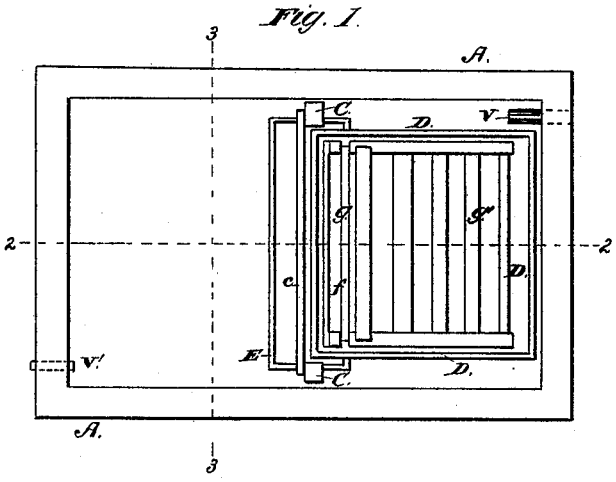
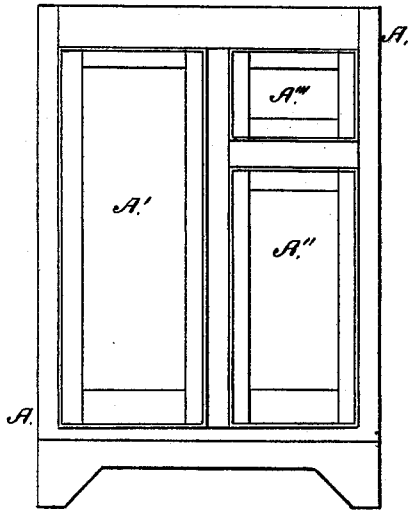


Fig. 4.



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L. B. WOOLFOLK.

Refrigerator.

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Fig. 5.

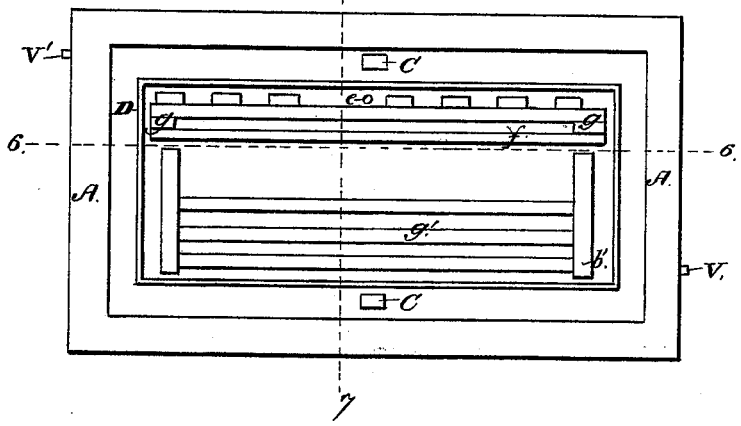


Fig. 6.

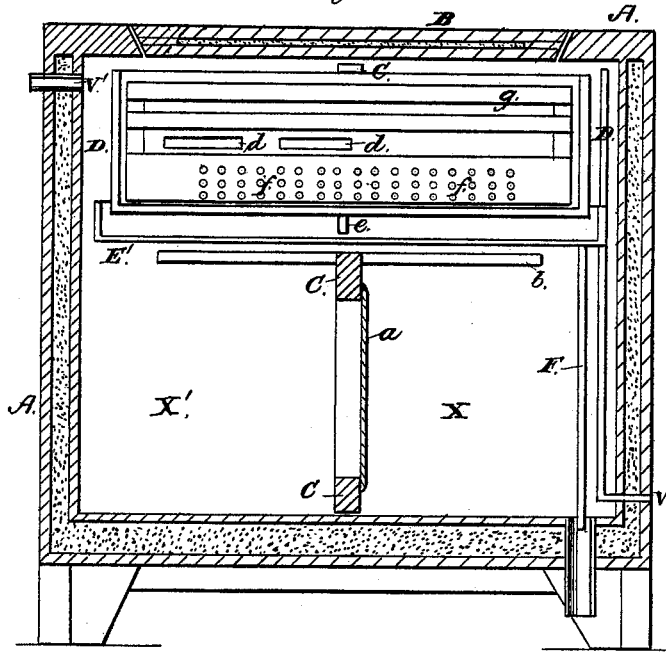
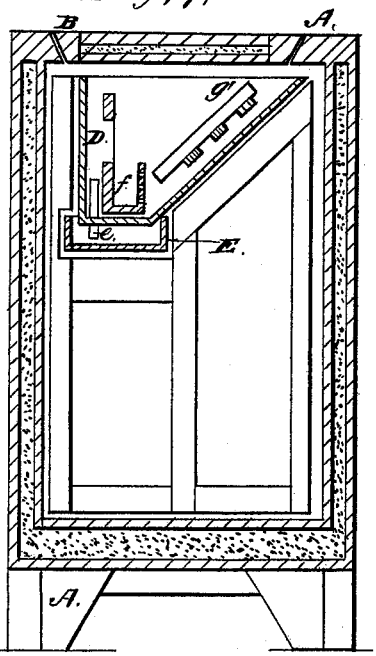


Fig. 7.



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UNITED STATES PATENT OFFICE.

LUCIEN B. WOOLFOLK, OF LEXINGTON, KENTUCKY.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **214,225**, dated April 8, 1879; application filed July 17, 1878.

To all whom it may concern:

Be it known that I, LUCIEN B. WOOLFOLK, of Lexington, in the county of Fayette and State of Kentucky, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification.

My invention consists, first, in a removable partition for dividing the refrigerator into two compartments and supporting the refrigerating-vessel; second, in constructing the refrigerating-vessel in such a manner that the lower part thereof contains the liquid that flows from the refrigerating materials contained in the upper portion until the chill has been extracted from said liquid; third, in an arrangement of air aperture or apertures in the refrigerating-vessel, by which the air shall pass from one compartment through the ice, and thence through said aperture into the other compartment, thus maintaining a circulation of air in the refrigerator; fourth, in constructing and arranging slatted frames in such a manner as to keep the refrigerating materials from the side of the refrigerating-vessel; fifth, in an arrangement for ventilating the apparatus and automatically drawing off impure gases or vapors, consisting of an orifice or pipe arranged at or near the top of one side and a tube or length of pipe at the opposite side, this latter pipe being at its lower end in communication with the outer air and acting to convey the noxious vapors from the top of the vessel to and out at the bottom.

In the drawings, Figures 1, 2, 3, and 4 represent a small refrigerator for family use. Fig. 1 is a plan with the covers removed. Fig. 2 is a vertical section of the same, taken through the line 2 2 of Fig. 1. Fig. 3 is a vertical section through the line 3 3 of Fig. 1. Fig. 4 is a front elevation of the apparatus. Figs. 5, 6, and 7 represent my invention as adapted to a refrigerator of large size.

In these figures the same elements of construction are employed as in the apparatus shown by Figs. 1 to 4, the only difference being that the configuration of the various parts is changed to adapt them to the increased size.

In these figures, Fig. 5 represents a plan with the covers removed. Fig. 6 is a vertical section through the line 6 6 of Fig. 5. Fig. 7 is a cross vertical section through the line 7 7 of Fig. 5.

A is a refrigerator with double walls filled in with suitable non-conducting materials. A′ and A″ represent side doors. B represents a door or lid at the top, and A‴ represents a window in front of the refrigerator. C is a frame adapted to support the refrigerating-vessel and its contents. This frame has in its center a flat sheet of metal or other suitable material, which, together, constitute a partition for dividing the refrigerator into two parts or compartments, X X′. Additional support to the refrigerating-vessel is afforded by the cross-pieces *b* and the back piece *c*, carried by the partition C *a*. The refrigerating-vessel and the partition are constructed so as to be readily removed from the refrigerator when any of the parts require to be cleansed, or for other purposes.

D is the refrigerating-vessel, having the aperture or apertures *d*, through which air flows out of the refrigerating-vessel. *e* is the pipe or aperture for the escape of the liquid that flows from the refrigerating materials. The salt-box *f* is perforated on the inner side to permit communication between same and the refrigerating-vessel and the formation of brine. *g g′* represent lattice-work or slats for the purpose of keeping the ice from contact with the sides of the refrigerating-vessel. E is the drip-pan, in which the refrigerating-vessel rests. The bottom of the vessel may either rest directly upon the bottom of the drip-pan, or it may rest upon planks or pieces of wood, or other suitable material, on the bottom of the drip-pan, and be thus raised from contact with said drip-pan. This drip-pan is supported upon the cross-bars *b* of the removable partition C *a*. F is the offlet-pipe for conveying away the drip-water as it accumulates in the pan E.

The ventilating-pipes V V′, through which air enters at one side of the apparatus, traverses the same, and departs at the other side, are arranged within the refrigerator in two parts, one of which extends from near the top of the refrigerator to near the bottom, where it communicates with the exterior. The other is preferably applied to the opposite side of the refrigerator, and may consist of a short length

just sufficient to merely traverse the lining and case.

In the adaptation of my invention to refrigerators of enlarged area, (shown in Figs. 5, 6, and 7,) the refrigerating-vessel D extends longitudinally in the refrigerator; but the air-apertures *d* being formed in the compartment X′, the same circulation of air is maintained as in the former illustration.

The slat-work *g′* may have upon or attached to it a partition for the purpose of separating the ice in the refrigerating-vessel into two portions, so that the ice between the slats *g* and partition will constantly feed down into the brine at the bottom.

The brine escapes from the refrigerating-vessel through the liquid-outlet *e*. The slats upon the back of the salt-box permit of the flow of the brine to the outlet *e* in regular streams, so as to cause it to lose its chill before flowing off.

The apparatus may be used either with or without salt in the salt-box. When the slat-work *g′* is used it will prevent the ice floating in the liquid. This slat-work may, however, be removed if desired, in which case the ice will rest directly in the brine and against the sides of the refrigerating-vessel.

The air in the compartment X rising to the top of the refrigerator will pass through the ice in the refrigerating-vessel D, and will flow out of it, through the air-aperture *d*, into the compartment X′, and will pass from X′ back into X around the removable partition C *a*. There is thus a constant circulation of air from compartment X, through the refrigerating-vessel D, into compartment X′, and from X′ around the removable partition C *a* into X.

The salt-box *f* is placed in the lower part of the refrigerating-vessel; and as the liquid overflows through outlets *e*, and passes around or over the rear portion of the salt-box, it absorbs heat from the back of the refrigerating-vessel.

By the interposition of the slat-work *g g′* between the ice and the refrigerating vessel a considerable economy of refrigerating materials is effected by reason of confining the ice to a certain space, lessening the area of contact, and causing the whole of the refrigerating qualities to be utilized, as set forth.

By the construction of the removable partition C *a* all the internal parts of the refrigerator may be readily removed for cleansing or other purposes, the refrigerating-vessel D, drip-pan E, and removable partition C *a* being easily removed in succession through the top door, B.

The action of the ventilating device is automatic. As the air within the refrigerator is colder than that surrounding it, the air within the portion of the pipe marked V will descend by its greater specific gravity, and pass out at the bottom into the surrounding air. It will, as is well understood, displace the air from the top of the refrigerator, and withdraw such as has become vitiated, and cause pure air of an equal amount to the bad air withdrawn to enter through the part of the pipe or opening V′ at the top.

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

1. The refrigerator A, provided with removable partition C *a*, having cross-bar *b*, drip-pan E, offlet-pipe F, connecting with said drip-pan, slatted refrigerating-vessel D, having air-aperture *d*, water-outlet *e*, and back-piece *c*, and perforated salt-box *f*, substantially as and for the purpose set forth.

2. In combination with the refrigerator A, the removable partition C *a*, refrigerating-vessel D, and drip-pan E, said partition serving as a direct support to the drip-pan, substantially as set forth.

3. In combination with the refrigerator A and removable partition C *a*, forming the compartments X X′, the refrigerating-vessel D, having air-aperture *d*, for insuring circulation of air in the refrigerator, and the drip-pan E, directly supported upon the partition C *a*, and having at one end the drip-pipe F, substantially as set forth.

4. The combination of the refrigerator A, having removable partition C *a*, refrigerating-vessel D, having slat-work *g g′*, and outlets *d* and *e*, salt-box *f*, perforated on its front face, its rear face being solid and having an upward extension of slat-work, and drip-pan E, supported by the partition C *a*, all substantially as set forth.

5. The combination, with the refrigerator A, refrigerating-vessel D, drip-pan E, and removable partition C *a*, of the ventilator-pipe V, communicating at its top, on one side of the refrigerator, with the air in the upper part of the refrigerator, and at its bottom with the exterior air, and the pipe or orifice V′ passing through the top of the refrigerator on the side opposite to the ventilator-pipe, as and for the purpose set forth.

LUCIEN B. WOOLFOLK.

Witnesses:
GEORGE J. MILLER,
CHAS. GIBSON.