2 Sheets—Sheet 1.

H. E. FULLER.

REFRIGERATOR.

No. 188,509.

Patented March 20, 1877.

Fig. 1.

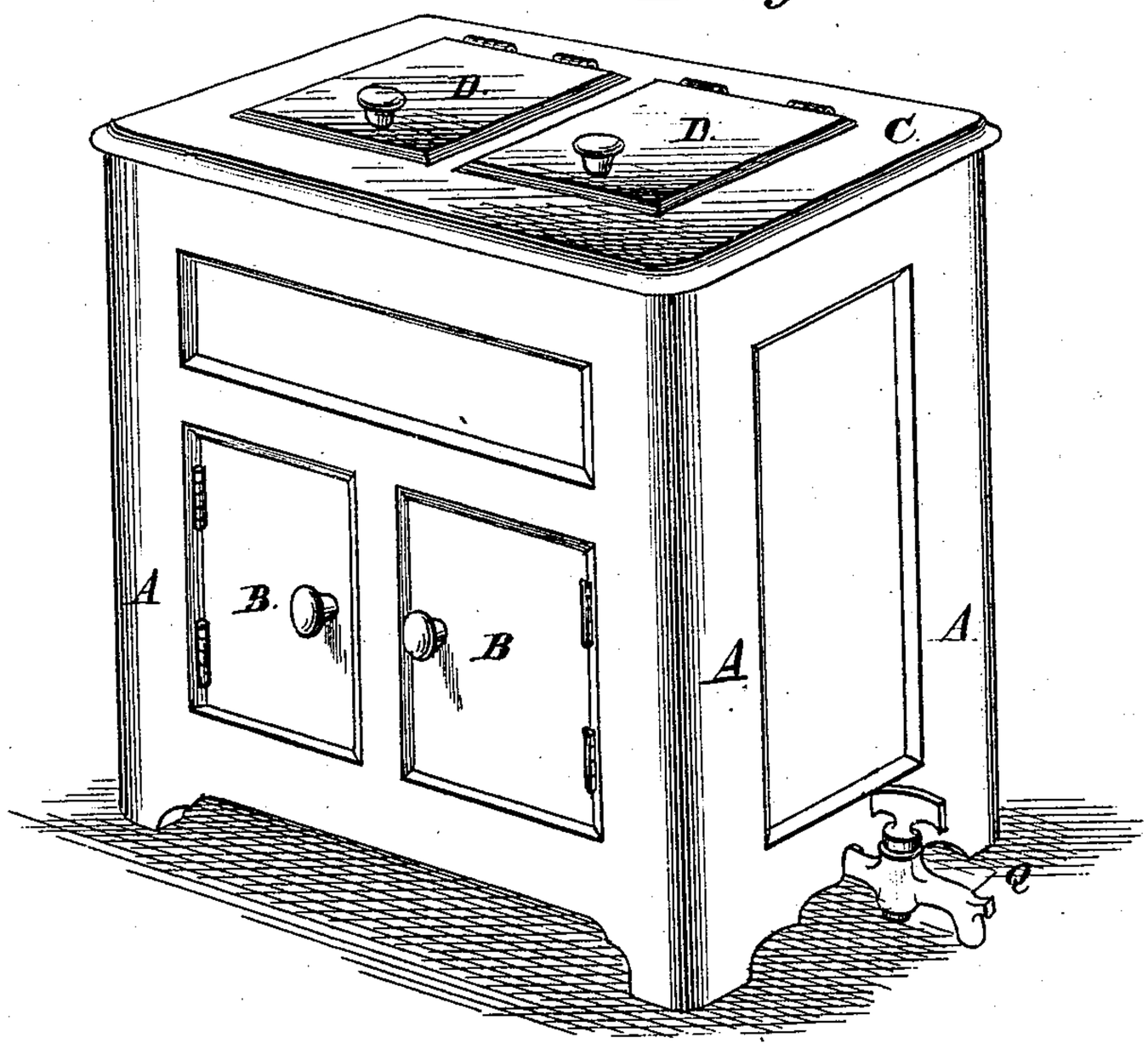
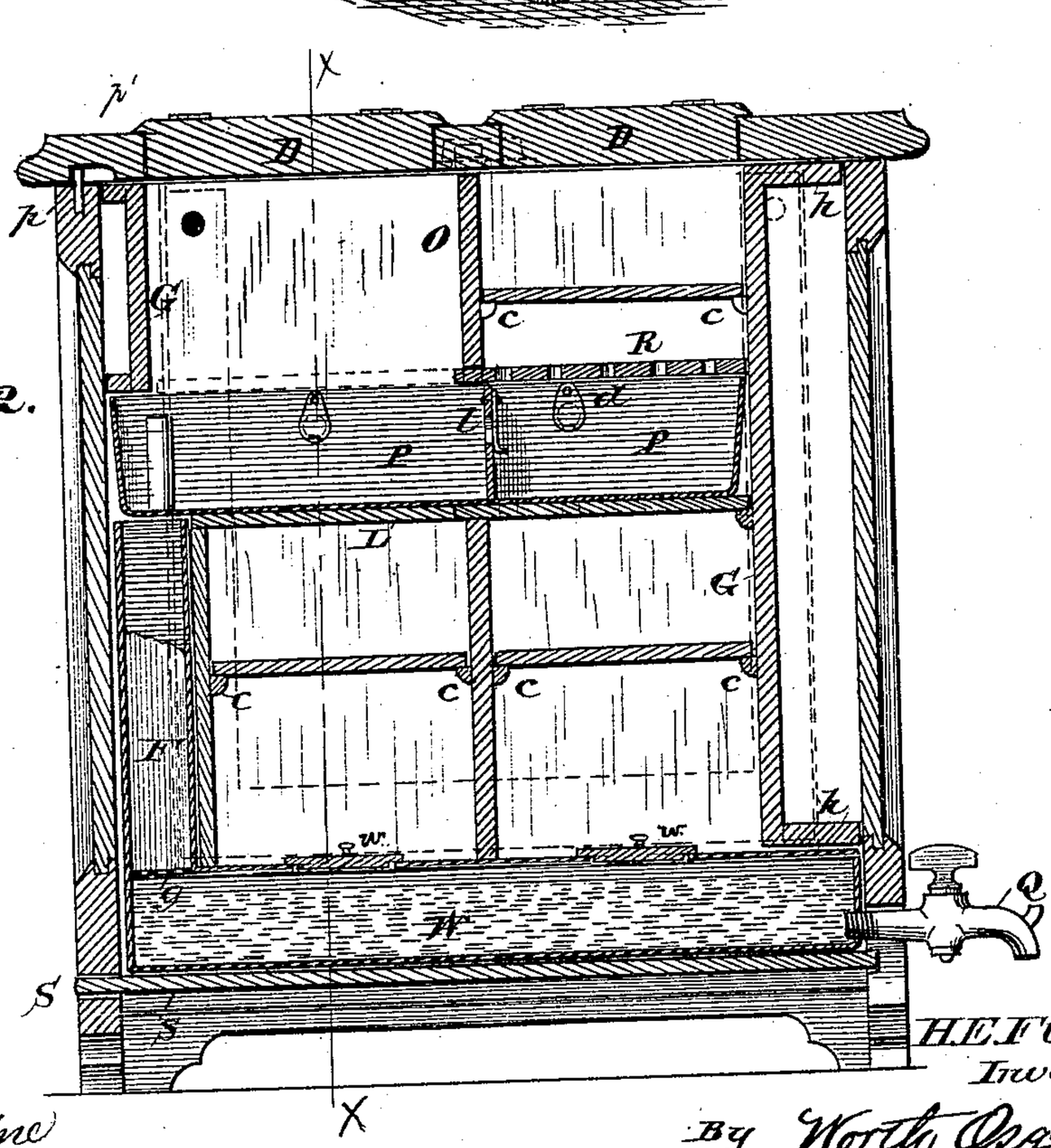


Fig. 2.



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2 Sheets—Sheet 2.

H. E. FULLER.

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No. 188,509. Patented March 20, 1877.

Fig. 3.

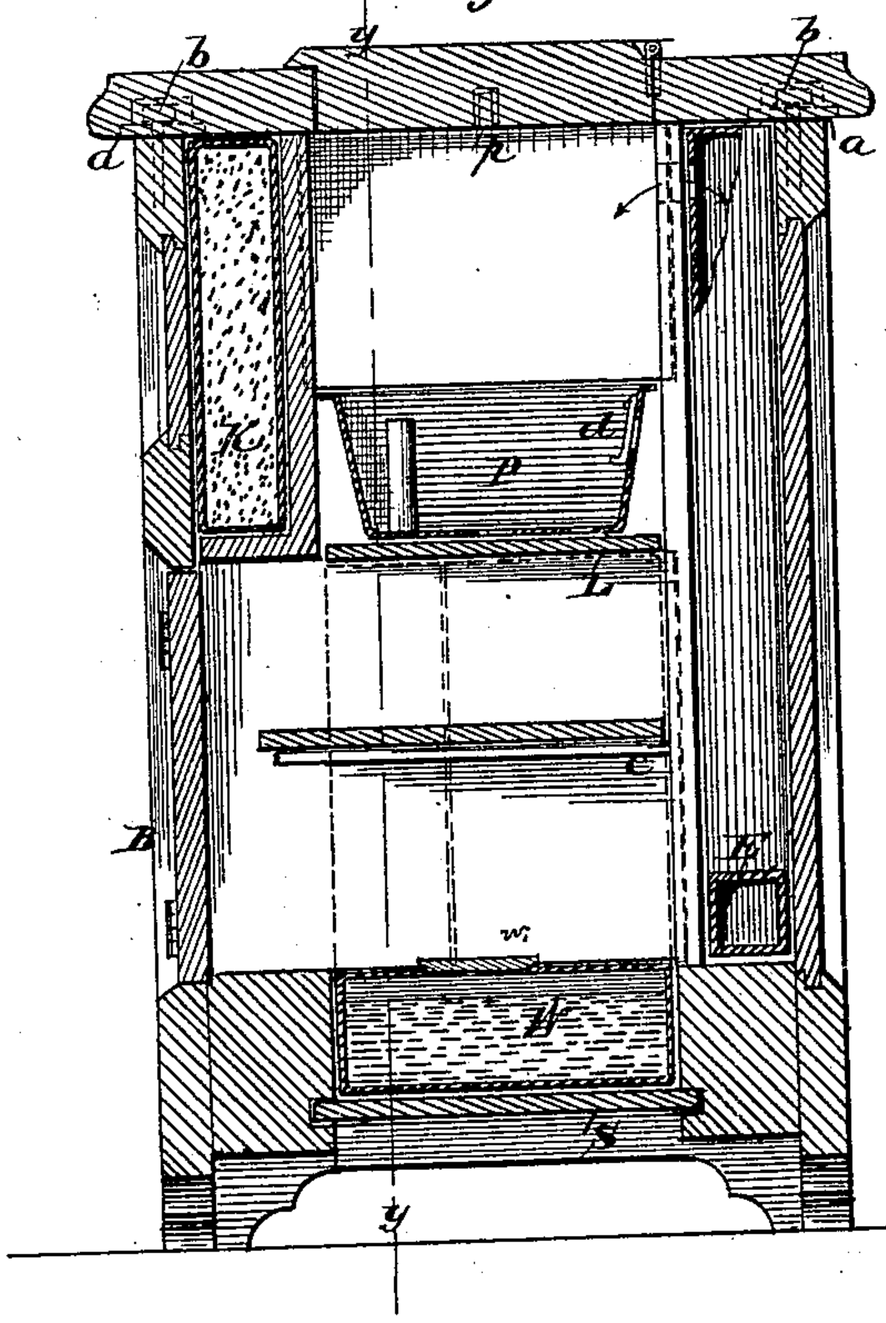


Fig. 4.

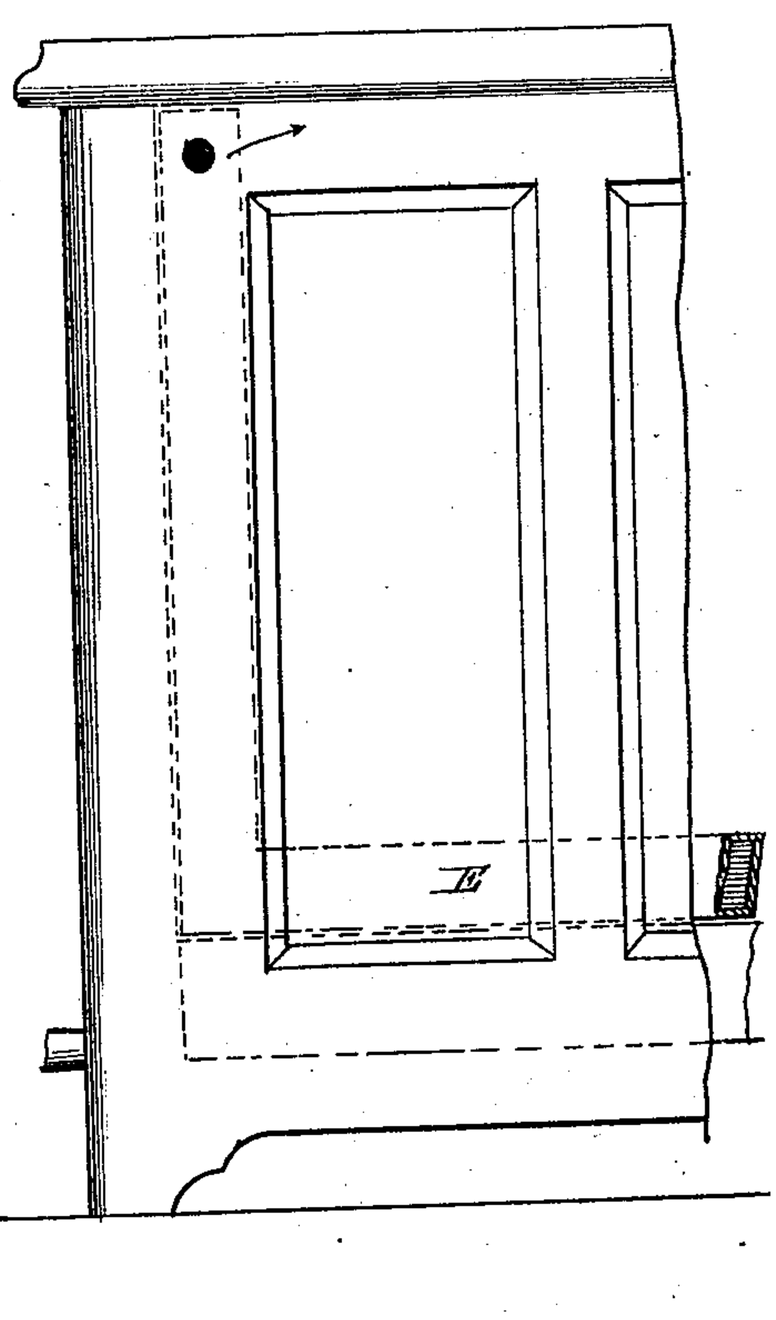
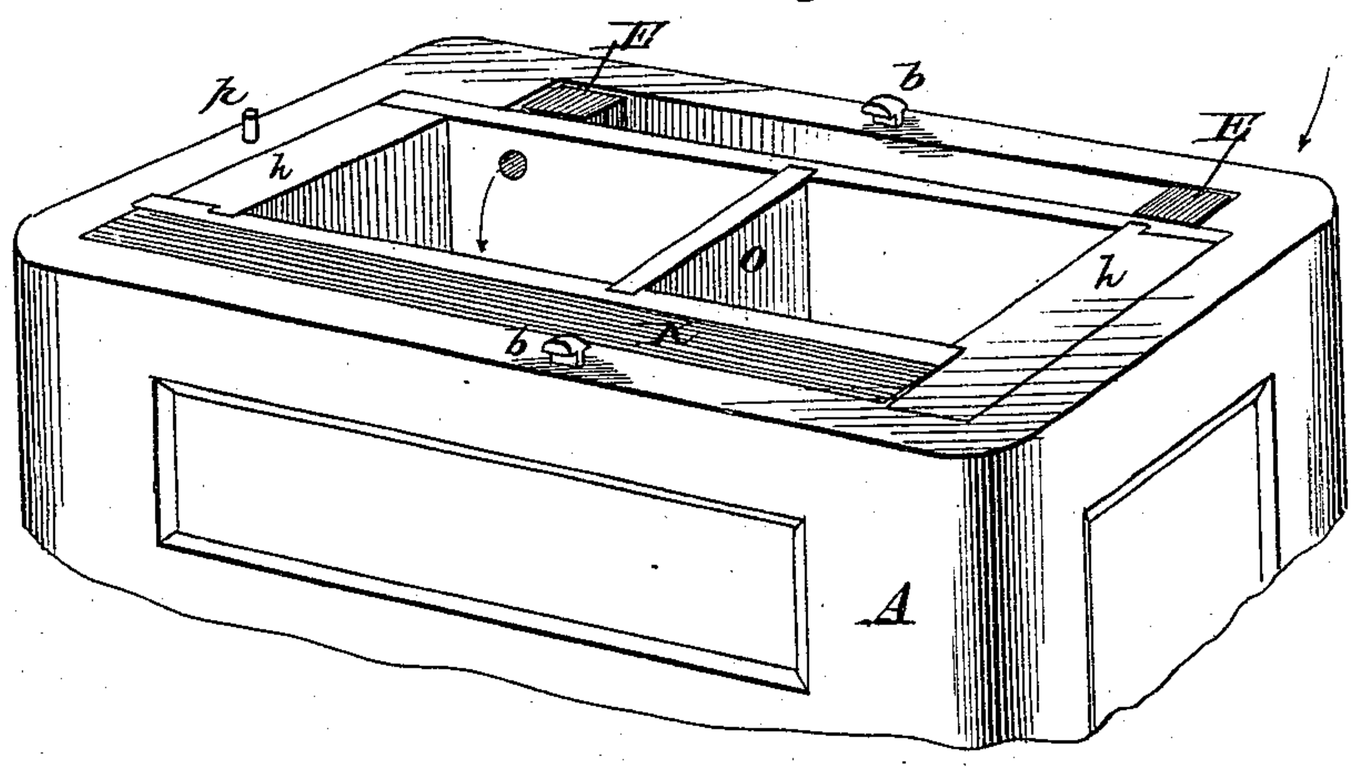


Fig. 5.



H. E. Fuller,
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Attest:
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UNITED STATES PATENT OFFICE.

HIRAM E. FULLER, OF LANSINGBURG, NEW YORK.

IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **188,509**, dated March 20, 1877; application filed February 6, 1877.

To all whom it may concern:

Be it known that I, HIRAM E. FULLER, M. D., of Lansingburg, county of Rensselaer and State of New York, 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 and to the letters of reference marked thereon.

Figure 1 is a perspective view of my improved refrigerator, showing the doors and lids closed. Fig. 2 is a vertical section on the line *y y* of Fig. 3; and Fig. 3, a similar view or section on line *x x* of Fig. 2. Fig. 4 is an elevation of a portion of the rear of the refrigerator, showing the location of the vent-pipe; and Fig. 5 is a perspective view of the upper portion, as it appears with the cover removed.

Like letters in all the figures refer to corresponding parts.

This refrigerator is intended for general domestic use, and the several details of construction hereinafter enumerated are adopted for the purpose of rendering the device more convenient, and more effective in its operation, than are the devices of similar nature heretofore in general use.

The invention consists in affording a convenient and easy means of removing the cover bodily, whereby access may be had to the interior for the purpose of cleaning, or for storing any articles desired to be preserved; in the location of the water-tank at the bottom of the refrigerator, from whence it may be easily removed; in connecting with said tank a filtering-chamber, which receives the drip from the ice, and discharges into said tank; in the provision of a removable vent-pipe; in the application of removable partitions and non-conducting blocks; and in certain other details of construction and arrangements of parts, all of which will first be fully described, and then pointed out in the claims.

A A is the refrigerator-box, having hinged doors B B, through which access is had to the lower compartments. The top C is also provided with a couple of hinged doors, D D, through which, under ordinary circumstances, the upper compartments may be reached in order to charge the refrigerator with ice, or to place or remove provisions. This cover C, instead of being hinged to the box, as is usually done, is so constructed as to be bodily removed therefrom. For this purpose it is provided on its under side with T-shaped sockets *a*, which receive correspondingly-shaped lugs or projections *b*, firmly attached to the frame of the box.

To secure the cover in its place its only necessary to place it so that the enlarged portions of the sockets shall receive the lugs, and then push it along horizontally, the necessary adjustment being facilitated by a pin, *p*, at one end of the box operating in a corresponding socket, *p'*, in the cover. The lugs *b b* are so formed as to hold the cover down in a firm and air-tight manner, and at the same time permit its easy removal by simply sliding it a trifle, and then lifting it up. The several interior fittings being removable from the frame of the box for repairs, cleaning or changing the relative size, and arrangements of the several compartments, this complete detachable feature of the cover is found very advantageous.

The ice-pan P occupies a nearly central position with respect to the box or refrigerator. It is intended to be made of enameled iron, earthenware, or other like non-corrodible material. It is provided with a stationary partition, *l*, and has numerous vents or air-openings covered by suitable dampers *d*, by use of which cold air may be confined to any particular compartment, or allowed to pass from one to another, as occasion may require. The ice for cooling is placed in either or both divisions of the ice-box, a suitable provision being made for carrying the drip from either into the filtering-box, to be hereinafter described.

The water-tank W is placed within and at the bottom of the box, occupying nearly the whole of the available space thereat. It is supported in position by the movable slide S, which is easily withdrawn from the grooves provided for it in the frame-work of the box. To remove said water-tank the slide S is withdrawn, thus permitting the tank to drop down upon the floor, when the box may be lifted

from over it. The slide may then be returned, if desirable, and the refrigerator used as before, a suitable vessel being first provided to catch the drip from the ice-box. Suitable openings may be made in the tank to facilitate cleaning, and these should be provided with covers, as at *w w*.

At one end of the tank is an upright case, F, fitting neatly into the end or ends and sides of the refrigerator-box, and intended to receive any ordinary filtering medium. To adapt it for the reception of pebbles, charcoal, and the like, it should be provided with a grated bottom, as *g*, to prevent the entrance of such material into the water-tank. The open upper end of the case or box F receives at all times the drip from the ice-pan, and may, if necessary, be supplied with fresh water, by simply pouring the same into said pan or directly through the perforations therein. Water for use is drawn from the tank through the ordinary faucet Q. This location of the water-tank and its filter subjects it at all times to the cooling influence of the ice within the box, and thus affords an economical supply of pure, fresh, and cold water for drinking purposes. The tank and its filter, like the ice-pan, may be made of enameled iron, earthenware, or other non-corrodible material.

For the ventilation of the interior of the refrigerator I provide a pipe, E, located inside the box, which carries air from the exterior and upper portion thereof downwardly through the depth of the box, thence across and up at the opposite end, where it discharges into the compartment over the ice-box. This insures a thorough cooling of the air before its entrance into any portion of the refrigerator, and also affords an escape for the pent-up gases, providing any such should arise from the provisions within. The pipe is made square in cross-section, that it may fit snugly against the walls of the box, and against the partitions in the same, and it is bent angularly in order to receive between its branches one of the removable non-conducting blocks with which it is intended to supply the refrigerator.

The several partitions which divide the interior of the box into compartments slide in grooves formed on the interior of the removable walls, and are so arranged as to be easily removed, to vary the size of said compartments at pleasure. These interior walls G are sustained at a slight distance from the exterior frame of the box, and are provided with horizontal projections *h h*, affording a dead-air space between the two. This space may be made more effectual in confining the cold, or rather excluding warmth, by being filled with such non-conducting material as charcoal, marble-dust, saw-dust, and the like. In instances where such filling is desirable I propose to place it in a tin box, made to fit the space, and, after placing said box upon the wall between the projections *h h*, said wall may be readily adjusted in its proper position. This renders the non-conducting material convenient to handle and remove, if desired. One of these boxes is shown at K, Fig. 3. The interior wall adjacent thereto is provided with only one projection, *h*, which in that particular location is only necessary to sustain the box.

Cleats *c c*, &c., are provided at suitable intervals for sustaining the removable shelves.

The ice-pan rests upon a central horizontal imperforate partition, L, which may be removed or introduced at pleasure, and which, when in place, affords a means of cutting off communication between the upper and lower series of compartments.

A perforated plate, R, moves back and forth upon the top of the ice-pan and under the central partition O, serving as a convenient shelf for ice or for food.

From the construction and arrangement indicated it will be observed that the several compartments may be completely isolated from each other, which is very desirable, in order that one kind of food or provision may not taint another.

The central location of the ice-pan enables me to combine in one box all the advantages of that class of refrigerators wherein the ice is located above the preserving-chambers, and all the conveniences with respect to the upper compartments, which are afforded by that class wherein the ice is simply placed upon the bottom of the box.

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

1. In a refrigerator having removable partitions, locking-studs *b b*, and pin *p*, as specified, the combination therewith, of the cover C, carrying hinged lids D D, and having upon its under side T-shaped sockets *a a* and slot *p'*, substantially as shown.

2. In combination with the frame A A, provided with the removable slide S, the water-tank W, located and arranged substantially as shown and described.

3. A refrigerator provided with a lower water-tank, an upright filter-case attached thereto, an upper removable ice-pan, from which the drip passes to the filter-case, and a series of storage-compartments located with reference to the ice and water tanks, and separated by removable partitions, substantially as and for the purposes set forth.

4. In combination with the removable tank W, which occupies the entire bottom of the refrigerator, the upright case F, provided with grated bottom *g* and slide S, the whole being located and arranged substantially as shown.

5. In combination with the removable interior walls of a refrigerator, a removable box, containing non-conducting material, the whole arranged and operating substantially as shown and described.

6. In a refrigerator of the character herein shown, the combination, with the removable water-tank and its attached filter-case, occupying the entire bottom and a portion of one end of the refrigerator-box, and the removable ice-pan discharging the drip from the ice into said filter-case, substantially in the manner shown and described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

HIRAM E. FULLER, M. D.

Witnesses:
J. A. STOVER,
EDWIN ADAMS.