C. FALCK.

Refrigerator.

No. 54,475. Patented May 1, 1866.

Fig. 1.

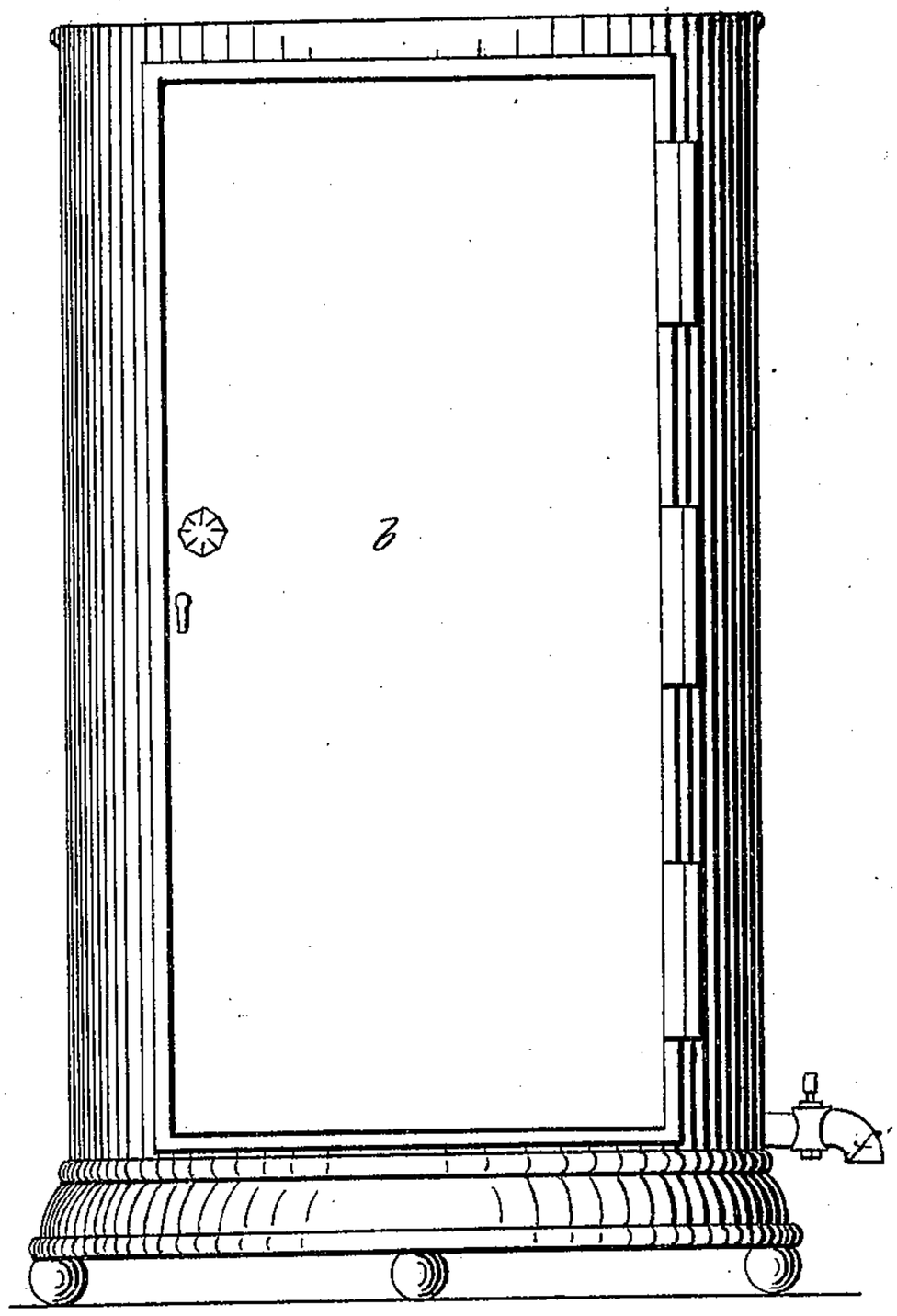


Fig. 2.

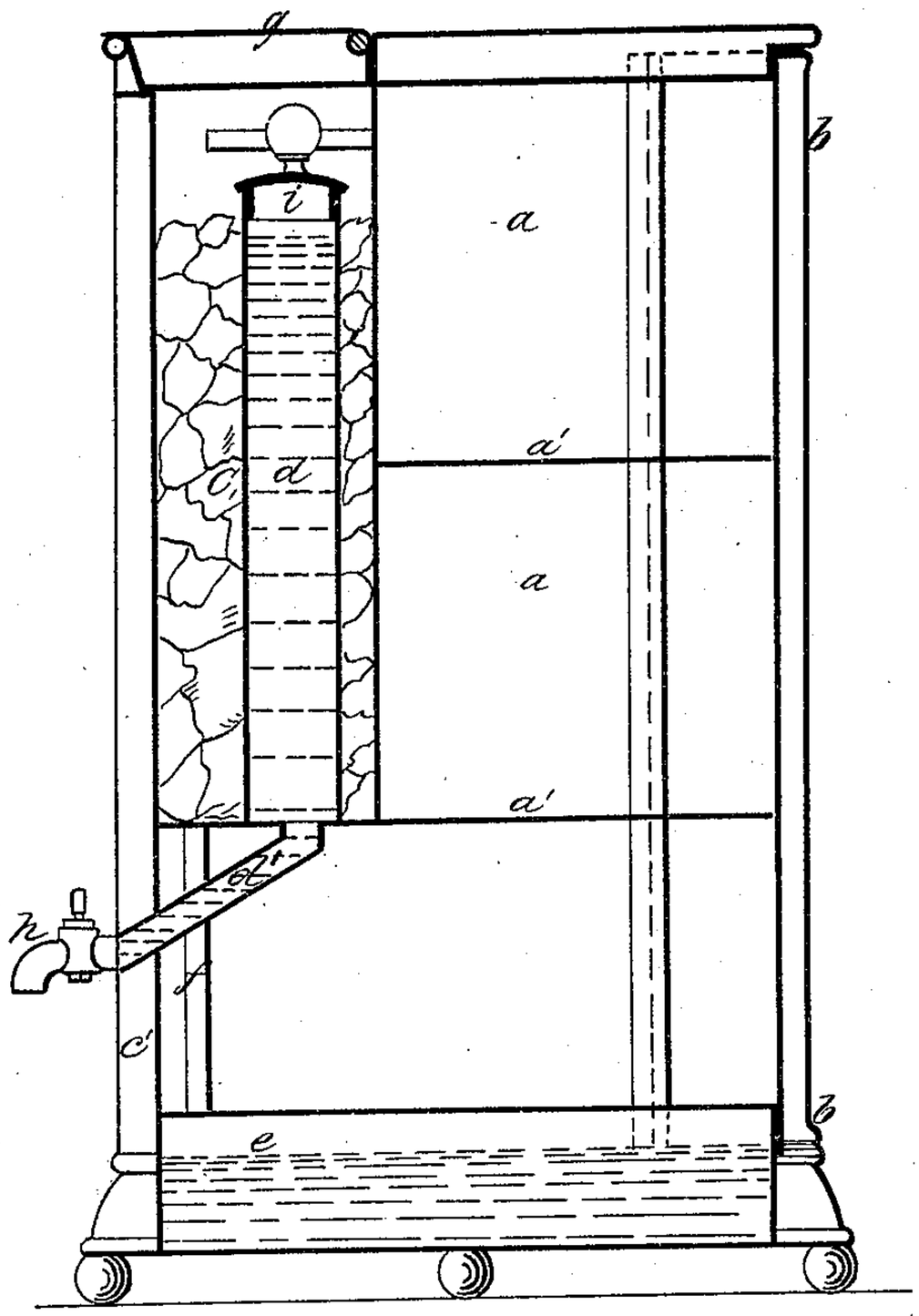
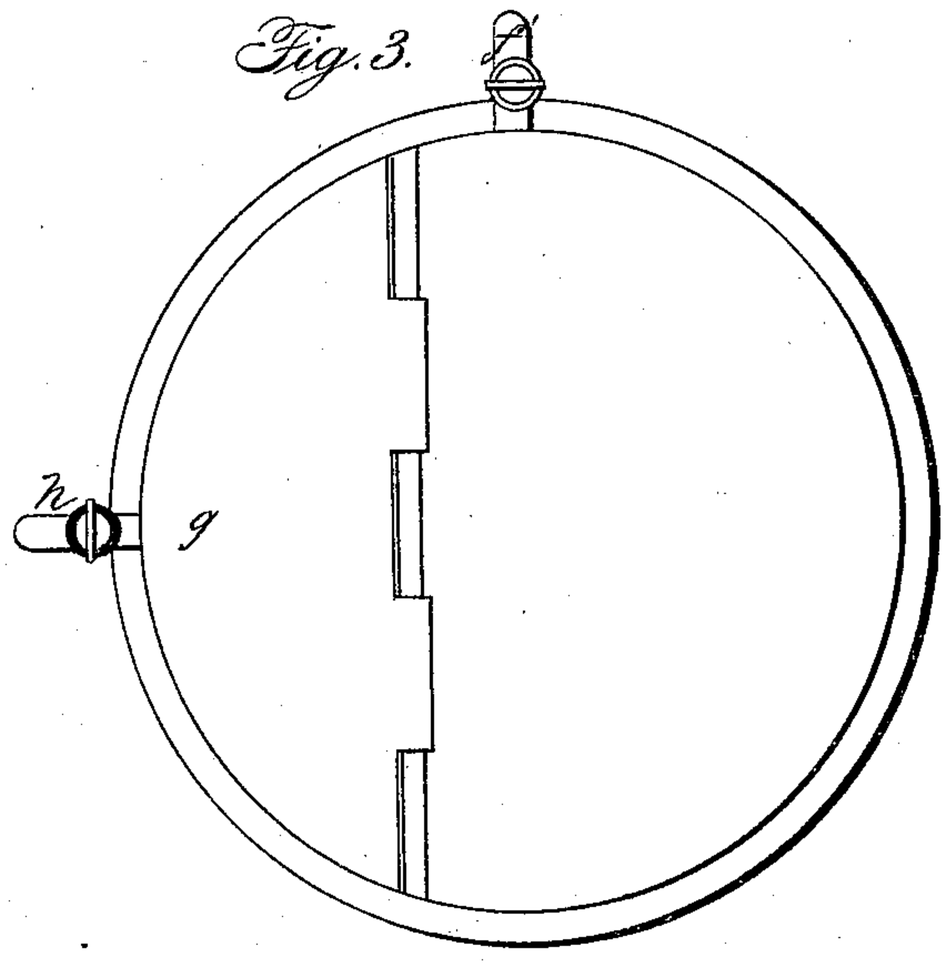


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES FALCK, OF NO. 19 UNION STREET, CLARENDON SQUARE, COUNTY OF MIDDLESEX, ENGLAND.

IMPROVED REFRIGERATOR.

Specification forming part of Letters Patent No. **54,475**, dated May 1, 1866.

To all whom it may concern:

Be it known that I, CHARLES FALCK, of No. 19 Union street, Clarendon Square, in the county of Middlesex, England, a subject of the Queen of Great Britain, have invented or discovered certain new and useful improvements in Apparatus called "Ice-Safes;" and I, the said CHARLES FALCK, do hereby declare the nature of the said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof, reference being had to the accompanying drawings, of which—

Figure 1 is a front elevation of an ice-safe or refrigerator constructed in accordance with my invention. Fig. 2 is a vertical section, and Fig. 3 a top view, of the same.

The nature of the said invention consists in the combination as well as in the arrangement of a cooling or refrigerating chamber with a chamber to receive waste water and with a chamber to hold ice, the water-receiving and ice chambers being so connected by a pipe or conduit that the water resulting from melting of the ice when in the ice-holding chamber may be discharged into the waste-water chamber, and, in consequence of the situation of the latter with respect to the refrigerating-chamber, be utilized in maintaining its air in a cool state; and the nature of my invention further consists in the combination as well as the arrangement of a vessel (for holding water or a liquid to be cooled) and an eduction-pipe, or its equivalent, with the chamber for holding the ice and with the refrigerating-chamber, or the same and the waste-water-receiving chamber.

In constructing an ice-safe or refrigerator according to the said invention it may have any desirable and proper external form; but by preference I usually make it cylindrical, or approximately so, and with its body or main part composed of two concentric cases, provided with a space between them for the reception of charcoal, plaster-of-paris, or some other suitable non-conductor of heat.

I provide such a safe with a doorway leading through its side and into the chamber for the reception of articles to be maintained at a cool temperature. The door to such doorway may have a suitable lining which is a poor conductor of heat, or it may be made with an internal lining or case and a space between it and the door, such space being for holding charcoal or other non-conductor of heat. The lid or cover of the receptacle or chamber for receiving the ice may be made like the door of the cooling-chamber.

At the lower part of the ice-safe is a waste-water receiver or chamber, which extends across the safe and directly underneath and against the bottom of the refrigerating or cooling chamber, and is connected with the ice-chamber by means of a conduit leading down from the bottom of the latter, the said ice-chamber being situated alongside of the refrigerating-chamber and separated from it by a thin partition.

The refrigerating-chamber may be furnished with one or more shelves or other contrivances or devices for supporting articles to be kept therein in a cool state.

The ice-chamber may extend from the top to the bottom of the refrigerating-chamber; but I prefer that the latter should project underneath the former in manner as represented in Fig. 2 of the drawings—in other words, that the ice-chamber should extend down to the lower shelf of the refrigerating or cooling chamber.

There should be a stop-cock or other suitable means to the waste-water chamber to enable water to be drawn therefrom as occasion may require.

I prefer to construct the safe of sheet metal, such as iron covered with either zinc or tin; but there are various other materials which will equally answer the purpose.

Within the ice-chamber is a long cylindrical or other proper-shaped vessel for holding water or a liquid to be cooled, such vessel at its bottom being provided with a discharge-pipe, to extend therefrom through the side of the safe, and to terminate in a stop-cock. The top of the water-vessel or cistern may be open, and provided with a cover, and be directly under the cover of the ice-chamber, in order to be in a convenient position for water to be poured into it as frequently as may be necessary.

Among the advantages of my arrangement of the ice-chamber and the waste-water chamber with respect to the refrigerating-chamber and the complete separation of each from the

other, except in their being connected as hereinbefore mentioned, is that of enabling snow or dirty ice to be used in the ice-chamber and about the liquid-cooling vessel thereof. Another advantage is the application of the waste water of the ice to aid in cooling the air of the refrigerating-chamber. Another advantage is that, by reason of the ice and waste water being in chambers separate from the cooling-chamber, the air of the latter will be kept dry and not subjected to being charged with vapor from the ice or water.

In the drawings, *a* is the cooling-chamber or front compartment of the safe, its shelves being represented at *a' a'* and its door at *b*.

The ice receptacle or chamber is shown at *c* as containing the fluid or water cooling vessel *d*, whose discharge-pipe is shown at *d'*, and as terminating in a stop-cock, *h*, if desirable to have one applied to it.

A tube, *f*, leads from the bottom of the chamber *c* to the top of the waste-water receptacle *e*, which extends underneath the refrigerating-chamber *a*, the same being so that the water discharged from the ice or snow when in the compartment *c* may flow freely therefrom into the chamber *e*.

The lid or cover of the ice-chamber is seen at *g*, and that of the water-vessel *d* is represented at *i*. (See Fig. 2.)

A discharge-pipe or stop-cock, *f'*, inserted in the side of the waste-water chamber, serves to enable water to be drawn therefrom.

The bottom of the compartment *c* may be lined with sheet-lead, to protect it from bruising when lumps of ice are thrown in.

I am well aware that an ice-safe or refrigerator constructed with an ice-receptacle and also with a chamber to hold articles to be kept cool is not new or was in existence before my invention. Therefore I make no claim to such in the abstract. Nor do I claim an ice-safe or refrigerator as made of two cases, having charcoal or other non-conductor of heat arranged in one or more spaces between such cases.

What I claim as my invention is as follows:

1. The combination as well as the arrangement of the cooling-chamber *a*, the chamber *c* for holding ice, the waste-water receptacle *e*, and the pipe or conduit *f*, connecting the chambers *c* and *e*, as set forth.

2. The combination as well as the arrangement of the vessel *d* (for holding water or a liquid) and its eduction-pipe *d'* with the ice-chamber *c* and the cooling-chamber *a*, as explained.

3. The combination as well as the arrangement of the vessel *d* (for holding water or a liquid) and its eduction-pipe *d'* with the ice-chamber *c* and the cooling-chamber *a* and the waste-water chamber *e*, the whole being substantially as set forth and represented.

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