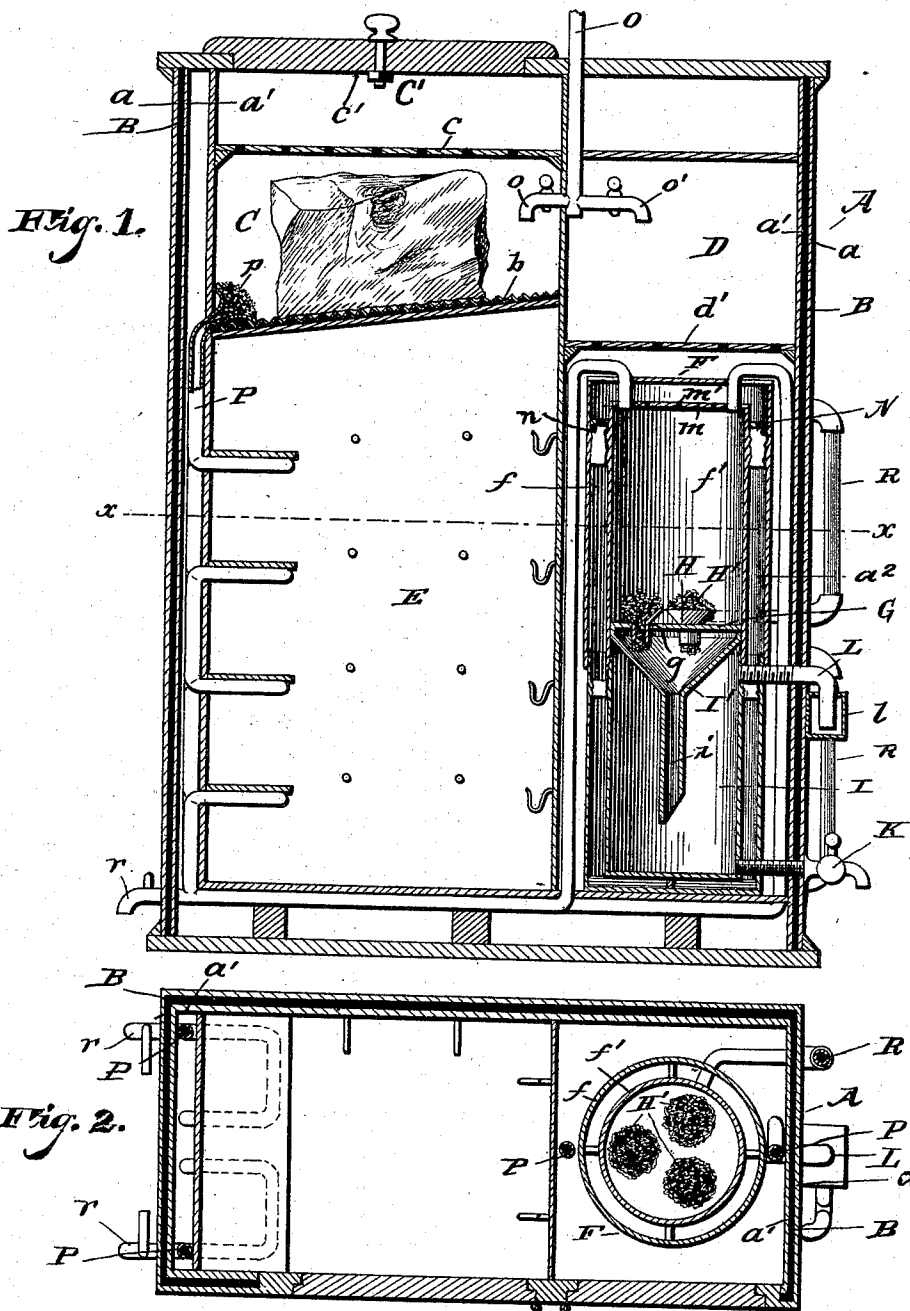


(No Model.)

W. HILTON.
FILTER.

No. 470,620.

Patented Mar. 8, 1892.



Witnesses
Samuel Ker.
Philip M. Masi.

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William Hilton
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UNITED STATES PATENT OFFICE.

WILLIAM HILTON, OF REYNOLDSVILLE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JACOB BOOTH, OF SAME PLACE.

FILTER.

SPECIFICATION forming part of Letters Patent No. 470,620, dated March 8, 1892.

Application filed July 31, 1891. Serial No. 401,313. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HILTON, a citizen of the United States, and a resident of Reynoldsville, in the county of Jefferson and State of Pennsylvania, have invented certain new and useful Improvements in Ice-Coolers and Filters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical section, and Fig. 2 is a horizontal section on line $x x$.

This invention has relation to certain new and useful improvements in combined water-coolers and filters designed for use either alone or in connection with a refrigerator or ice-box; and it consists in the novel construction and combination of parts, as hereinafter described, and pointed out in the claims.

In the accompanying drawings, illustrating the invention, the letter A designates the refrigerator box or casing, which may be of any suitable dimensions, according to the purpose for which it is desired, either for home use or for cold-storage on a large scale. This box has the outer and inner walls $a a'$, having the chamber or space B between them, which may be provided with any suitable packing or may be left open.

C represents the ice-chamber, which is in the upper portion, at one side. This chamber has an inclined corrugated floor b , of aluminum or other suitable material, upon which the ice rests. Above this ice-chamber is a removable shelf c , above which, at the upper portion of the box, is a storage-chamber C' , having a lid c' . To one side of the ice-chamber is a provision-chamber D, having a door d and a removable bottom d' . Underneath the ice-chamber is the main provision or storage chamber E, provided with suitable shelves and hooks.

Although I do not claim any special construction of the refrigerator, except in so far as relates to the operation of the filter, I have thought it proper to describe a convenient interior arrangement of the same, inasmuch as

the application of the filter necessarily involves some change in the construction.

Below the provision-chamber D is the cooler and filter F. This cooler and filter comprises the outer and inner receptacles $f f'$, respectively, each formed in an upper and a lower section and connected by a suitable air and water tight joint. Between the two receptacles f and f' is a space or chamber a^2 , which allows the circulation of cold air around the inner receptacles.

G is a transverse partition or diaphragm in the inner receptacle f' , provided with one or more apertures g , (three being shown,) in which are placed funnel-shaped filter-holders H. Any suitable filtering material for the purpose may be placed in these holders, such as the sponges H' illustrated. The lower contracted ends of these funnel-shaped holders extend down through the partition G into the upper portion of the cold-water chamber I, in the lower portion of the inner receptacle, or into a funnel-shaped receiver I', connected to and placed underneath said portion, said receiver having the discharge-tube i at its lower end; or the water may fall directly from the filters into the chamber I. If the receiver I' is used, filtering material may be employed therein, if desired.

K is the discharge or draw-off faucet from chamber I.

L is the waste or overflow pipe communicating with the upper portion of the water-chamber to carry off the surplus water when said chamber becomes filled. This pipe is provided with the hydraulic seal l to prevent the entrance of air from the outside. If desired, the space or chamber between the inner and outer receptacles may be provided with a suitable packing. These receptacles are provided with covers, which may be reached through a door of the casing. The cover m of the inner receptacle is provided with one or more small apertures m' to permit a circulation of air into the surrounding chamber. An annular perforated ring N may be provided over this surrounding chamber, at the upper portion resting on the lugs or supports n .

O is a feed-pipe entering the box or casing A at the top and provided with two faucets o and o' . The faucet o is arranged to discharge

into the ice-chamber and the faucet *o'* into the chamber D, and thence into the upper portion of the filter and cooler through apertures in its bottom *d'* or by the removal of said bottom.

P P are pipes communicating with the lower portion of the ice-chamber and provided at their mouths with filters *p*. These pipes lead down alongside the main provision-chamber on either side, across the bottom of the box, up along opposite sides of the cooler and filter, and discharge in the upper portion of the inner receptacle *f'*. These pipes carry the water from the ice-chamber to the filter and serve to cool the chambers along which they pass. They are also provided with suitable draw-offs *r*. They may also be provided with branches or coils extending underneath the provision-shelving.

The filter being made in sections, it may be taken out through doors in the casing and cleaned. Gages R may be connected to the filter to indicate the amount of water in the chambers, so that the supply may be regulated. Glass-covered openings may be provided in the various doors, through which the contents of the respective chambers may be inspected.

I also design to use the filter and cooler herein described by itself. When so used, ice is placed in the upper part of the inner receptacle and water supplied by a suitable feed-pipe or by the removal of the covers. A shelf may also be arranged in the upper portion of the inner receptacle above the ice, on which provisions may be placed. This filter may be of any shape and size desired.

It will be understood that slight changes may be made in the construction and arrangement of the parts as above described without departing from the spirit of the invention.

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

1. The combination, with the refrigerator-box having the ice and the provision chambers, of the filter arranged therein, said filter

comprising an outer and an inner receptacle, each formed in two sections, and pipes leading from the ice-chamber to the upper portion of the inner receptacle, substantially as specified.

2. The water-filter and cooler comprising the outer and inner receptacle having the intermediate space or chamber, said receptacles each formed in an upper and a lower section, a partition in said inner receptacle having one or more apertures therein, a funnel-shaped holder in each aperture, and filtering material in said holders, substantially as specified.

3. The water-filter and cooler comprising the outer and inner receptacles having the intermediate space or chamber, said receptacles each formed in an upper and a lower section, a partition in said inner receptacle having one or more apertures therein, funnel-shaped holders in said apertures projecting below said partition, filtering material in said holders, and an overflow-pipe provided with a hydraulic seal, communicating with said inner receptacle below said partition, substantially as specified.

4. The filter and cooler comprising the outer and inner receptacles having the intermediate space or chamber and each formed in an upper and a lower section, a partition in said inner receptacle, funnel-shaped holders held in said partition and projecting therethrough, filtering material in said holders, a funnel-shaped receiver below the discharge end of said filter-holder, and a waste-pipe or overflow provided with a hydraulic seal, communicating with the upper portion of the lower section of the inner receptacle, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM ^{his} × HILTON.
mark

Witnesses:

J. L. BAILEY,
E. NEFF.