

(No Model.)

2 Sheets—Sheet 1.

C. C. KING.
COOLER.

No. 477,425.

Patented June 21, 1892.

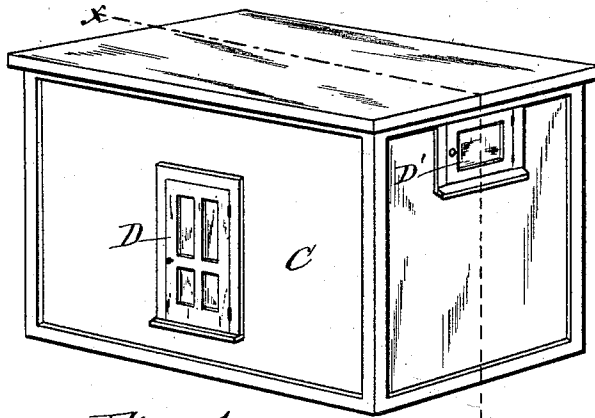


Fig. 1

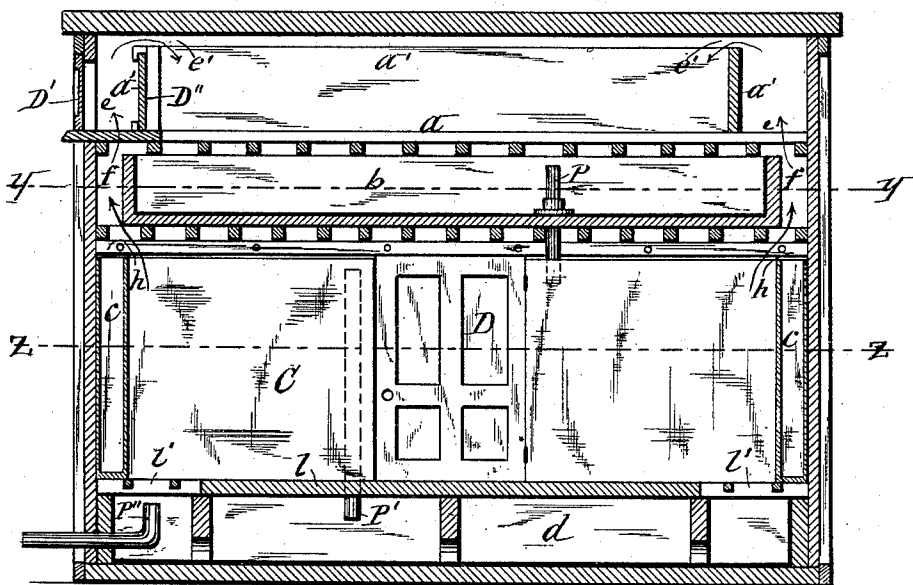


Fig. 2

WITNESSES:

C. L. Bendixson
Mark W. Dewey

INVENTOR:

Christopher C. King
By Smith, Lucas & Smith
his ATTORNEYS.

(No Model.)

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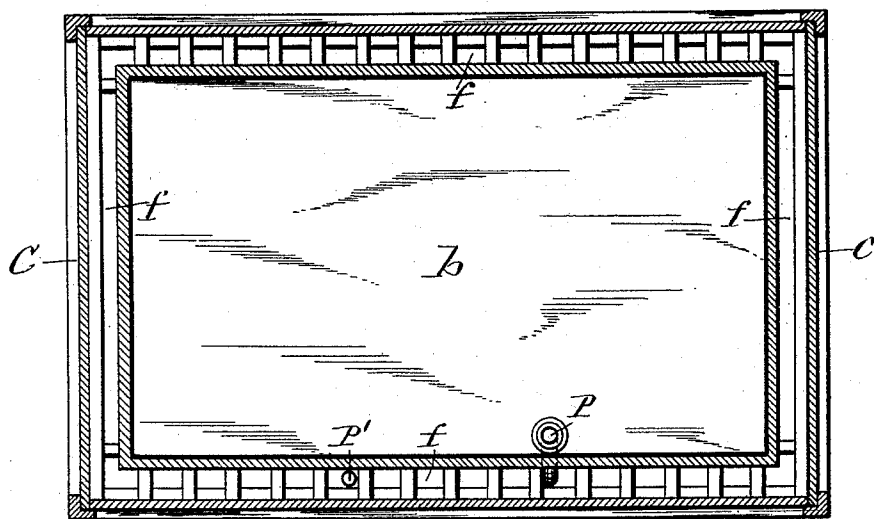


Fig. 3

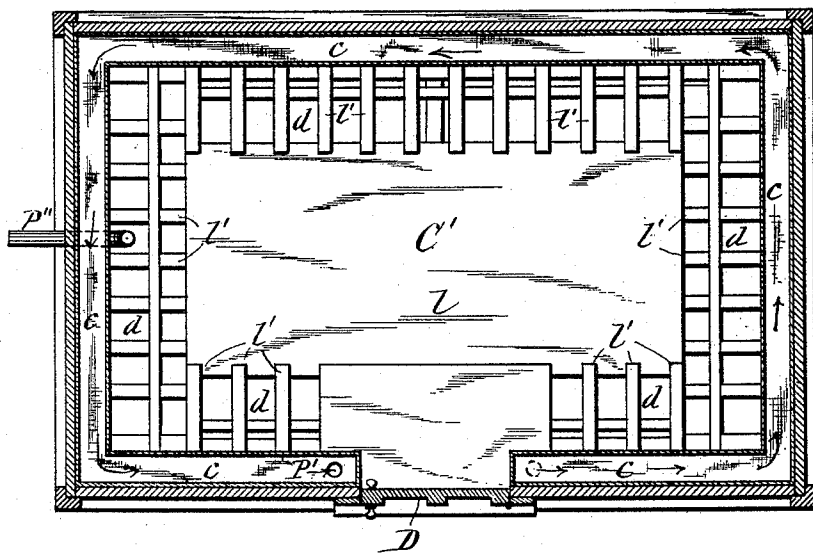


Fig. 4

WITNESSES:

E. L. Bendixon
Mark W. Dewey

INVENTOR:

Christopher C. King
By Dull, Laess & Dull
his ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHRISTOPHER C. KING, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-HALF
TO NELLIE A. HALL, OF SAME PLACE.

COOLER.

SPECIFICATION forming part of Letters Patent No. 477,425, dated June 21, 1892.

Application filed March 14, 1892. Serial No. 424,752. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER C. KING, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Coolers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in a novel, simple, and inexpensive construction of a cooler or refrigerator which possesses a great amount of refrigerating-surfaces formed of open-topped tanks surrounding the central or main portion of the interior of the cooler and charged with the water derived from the melting of the ice, said tanks being so arranged as to cause the air to circulate in the cooler and pass over the surface of the water contained in the tanks, and thereby cause the water to absorb the gases from the air, all as herein-after more fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a perspective view of the exterior of a cooler embodying my invention. Fig. 2 is a vertical transverse section on line *xx* in Fig. 1; and Figs. 3 and 4 are horizontal transverse sections, respectively, on lines *yy* and *zz* in Fig. 2.

Similar letters of reference indicate corresponding parts.

C represents the case of the cooler or refrigerator, which case is made air-tight as near as possible. Large coolers—such as are used in meat-markets—I provide with a door D, through which to obtain access to the compartment C', in which the meat or other substance to be preserved is stored. Another door D' is provided near the top of the cooler and a gate D'' in the wall of the ice-rack for the introduction of the ice.

a represents the ice-rack, which consists of an open net-work of bars or slats mounted on cleats secured to the sides of the interior of the case a proper distance from the top thereof to allow the requisite quantity of ice to be placed upon the rack. Said rack is provided with surrounding walls *a'*, which stand a sufficient distance from the sides of the case and extend only part way toward the top of the interior of the case to form vertical air-passages *e* up the exterior of the ice-rack, and transverse air-passages *e'* over the top of the rack, as indicated by arrows in Fig. 2 of the drawings.

Immediately under the ice-rack is located the horizontal water-tank *b*, which extends across the main portion of the case C, leaving spaces around the sides of the tank to form air-passages *ff* thereat. Beneath said tank is a vertical tank *c*, which extends around the sides of the interior of the case, as shown in Fig. 4 of the drawings. A sufficient space is left between the top of the tank *c* and bottom of the tank *b* to form air-passages *h h*, which communicate with the passages *e*. Below the tank *c* is another tank *d*, which extends over the entire bottom of the interior of the case C and has the floor *l* supported over a portion of it and lattice-work *l'* over the remainder of the said tank to expose the water contained therein to the air confined in the case. All of said tanks are open at the top, so as to cause the water to absorb the gases from the air in the case. Said tanks become charged with the cold water dripping from the ice by the following overflow-pipes: An overflow-pipe P extends from near the top of the tank *b* into the subjacent tank *c*, and another overflow-pipe P' extends from near the top of the tank *c* down into the bottom tank *d*, to which is attached the waste-pipe P'', having its receiving end near the top of said tank.

In the operation of the described cooler the ice is placed on the rack *a*. The air in the cooler becoming thereby chilled descends to the lower part of the cooler, and the warmer being displaced in the latter ascends along the sides of the vertical tank *c*, thence passes across the top of said tank and up along the exterior of the tank *b* and walls *a' a'* of the rack *a*, and thence passes over the ice and down through it to the interior of the tank *b*, from whence it again descends through the passages *h h* to the lower portion of the cooler. In the meantime the drippings from the ice pass successively from the tank *b* to the tank *c* and tank *d* and cause each of said tanks to be filled with ice-cold water. The air in its before-described circulation comes in contact with the walls of the tanks and with the surfaces of the water contained therein, and this causes

the air to be thoroughly chilled before it returns to the ice, and therefore reduces the consumption of ice. At the same time the water absorbs the gases from the air, and consequently the cooler is rendered very efficient and economical in its operation.

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

- 10 1. The combination, with the case C, of the ice-rack *a*, located in the upper part of said case, the tank *b* beneath the ice-rack to receive the drippings from the ice, the tank *c*, extending around the sides of the case, the
15 overflow-pipe P, extending from near the top of the tank *b* into the tank *c*, the tank *d*, extending over the bottom of the interior of the case, the overflow-pipe P', extending from
20 near the top of the tank *c* into the tank *d*, and the waste-pipe P'', having its receiving end near the top of the tank *d*, substantially as described and shown.

2. The combination of the case C, formed

air-tight, the ice-rack *a*, located in the upper part of said case and provided with surrounding walls *a'*, forming air-passages *e* and *e'*, respectively, up the exterior and over the top of the rack, the tank *b*, immediately under the aforesaid rack and having air-passages *f* extending around its exterior, the tank *c*,
25 extending around the sides of the case and having its top open and forming air-passages *h h* between its top and bottom of the tank *b*, the tank *d*, extending over the bottom of the interior of the case, overflow-pipes P and
35 P', leading successively from the upper to the lower tanks, and the waste-pipe P'', having its receiving end near the top of the tank *d*, substantially as described and shown.

In testimony whereof I have hereunto
40 signed my name this 8th day of March, 1892.

CHRISTOPHER C. KING. [L. s.]

Witnesses:

MARK W. DEWEY,
C. L. BENDIXON.