(No Model.)

E. TRUXALL.

BOTTLE COOLER.

No. 308,217. Patented Nov. 18, 1884.

FIG. 1.

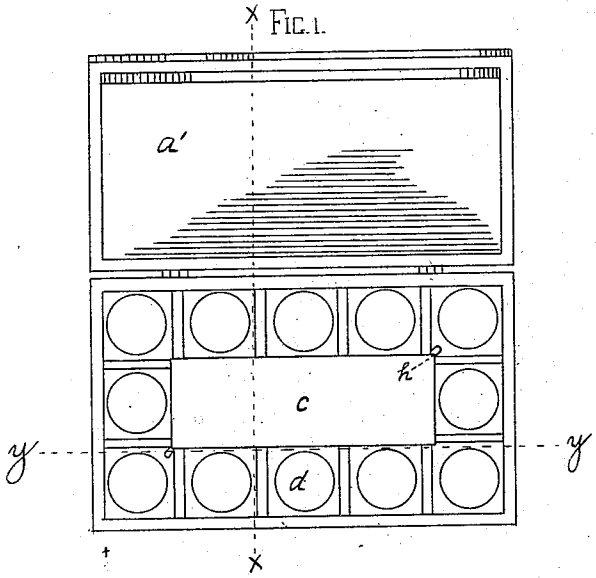


FIG. 2.

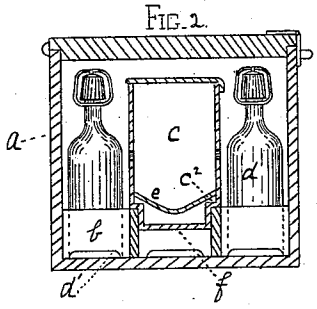


FIG. 3.

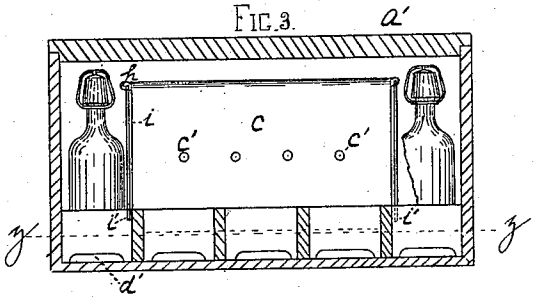


FIG. 4.

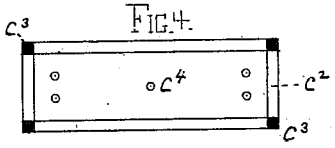
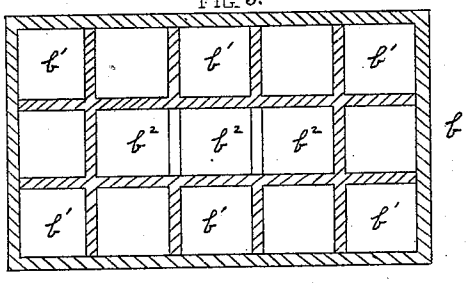


FIG. 5.



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UNITED STATES PATENT OFFICE.

EPHRAIM TRUXALL, OF PITTSBURG, PENNSYLVANIA.

BOTTLE-COOLER.

SPECIFICATION forming part of Letters Patent No. 308,217, dated November 18, 1884.

Application filed August 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM TRUXALL, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Bottle-Coolers; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of my improved bottle-cooler, the lid of the outer box being shown open and the lid of the inner or ice box closed. Fig. 2 is a vertical cross-section on the line *x x* of Fig. 1, the lids of both boxes being shown closed. Fig. 3 is a similar longitudinal section on the line *y y* of the same figure. Fig. 4 is a plan view of the bottom of the inner ice-box. Fig. 5 is a plan view of the rack used in supporting the bottles and the ice-box within the cooler, and is a horizontal section on the line *z z* of Fig. 3.

Like letters of reference indicate like parts in each of the several figures.

It is the object of my invention to provide means whereby bottles containing beer or other beverages may be stored in a convenient refrigerator or cooling-box which will be easy of access and effective in its cooling properties. I accomplish this by placing an ice-box within an outer box or case, somewhat above the bottom thereof, and arranging the bottles on the bottom of the case around the ice-box, which is provided with lateral openings and water-exits to secure perfect draining of the ice and circulation of cold-air therefrom around the bottles. It is in such an arrangement, together with several modifications and accessories, that my invention consists.

Referring now to the drawings, *a* represents the outer box or case of my improved bottle-cooler. It may be made of any desirable shape or size, with the sides single or packed with a non-conductor of heat, and is provided with a lid or cover, *a'*, to exclude air from the contents. The ice-box and the bottles are supported within the case *a* by means of a rack or frame, *b*, situate on the bottom of the case, and having sockets or nests *b'* around its outer periphery to receive the bottles *d*. I prefer to make this rack, as shown in Fig. 5 of the drawings, of strips of wood or metal intersecting at right angles, so that there may be a series of outer rectangular bottle-nests, *b'*, and a row of inner nests, b^2, the partitions of which inner nests support the ice-box *c*. To this end I prefer to make the distance between the longitudinal partitions of the inner spaces, b^2, the same as the width of the lower part of the ice-box, and to make the transverse partitions of the same somewhat lower. By constructing the bottom of the ice-box of less width and length than a cross-section of the upper part of the same it will have a flanged seat, c^2, which seats upon the outer partitions of the nests b^2, while its bottom rests upon the lower cross-partitions, thereby holding the box firmly in position on the rack somewhat above the bottom of the case *a*. In the sides of the ice-box *c* are perforations or air-holes *c'*, preferably situate somewhat below the median line of the sides, and the corners of the flanged seat c^2 are also perforated, as at c^3, so that the air may flow into the holes c^3 through the ice in the box *c*, and thence out of the passages *c'* around the bottles. In this way the cooling properties of the ice are thoroughly utilized and the space in the case *a* outside of the ice-box kept constantly supplied with cold air. The water from the melting ice in the ice-box is drained off through perforations c^4 in the bottom thereof onto the bottom of the outer case, *a*, or into a pan situate thereon.

By a series of experiments I have found that if the ice be allowed to rest upon the bottom of the box *c* directly over the water-outlets c^4 there will be a considerable waste caused by direct contact of the ice with the warmer air outside of and beneath the box. To obviate this I separate the ice from the water-outlets by means of an inner false bottom, *e*, which inclines, preferably, in a V form from the seat c^2 on each side of the box toward its middle part, and is provided with a longitudinal gutter, *f*, at the base of the incline. This gutter may also slope from each end toward an intermediate point where a single water outlet or hole is made, or there may be a number of such holes along the groove, as preferred. The inclined sides of the false bottom *e* may be corrugated, so as the more readily to carry off the water from the melting ice. The re-

sult of this construction is that the water flows through the exit or exits in the gutter *f* onto the bottom of the ice-box, and thence through the holes c^4 upon the bottom of the case *a*, while the warm air which rises through the holes c^4 will circulate through the space between the bottom *e* and the lower bottom of the ice-box, and will become somewhat chilled before it reaches the water-outlet *f*.

In the manner above described I secure a thorough circulation of air through the ice in the box *c* and around the bottles, the cold air continually descending from the holes *c* and the warmer air ascending into the ice through the holes c^3 and through the water-outlets c^4 in the bottom of the ice-box. The inclined bottom *e* should be cut away over the holes c^3 in the flanged seat so as not to interfere with the flow of air therethrough.

As before mentioned, the beer-bottles are set in the rack *b* on the bottom of the case *a*. The object of this is to allow the water from the melting ice to settle on the bottom of the case around the bottles, and thereby to utilize the cooling properties of all the waste material. The chilled water is permited to come into contact with all the bottles by cutting away passages on the bottom of the partitions of the rack. (Shown at *d'* in Figs. 2 and 3.) The rack *b* keeps the bottles and the ice-box in a constantly upright position and prevents their displacement if the case *a* should be tilted or upset, and to hold the ice-box more securely I provide two or more of its upper corners with loops or rings *h*, into which fit hooks *i*, the shanks of which extend to the loops from pivotal points *i'* on the rack *b*. The rack is secured to the case *a* in any desirable manner. The special advantage of setting the ice-box *c* upon the rack *b* is that its bottom is lifted above the surface of the water in the case *a*. This is a very desirable feature of my improvement, since it prevents contact with the water from melting the ice and from stopping circulation of air through the passages c^4. The water in the case *a* may be drawn off from time to time through a suitable faucet.

I prefer to make the ice-box *c* of sheet metal and the case *a* of wood, though other suitable materials may be used. The box *c* may be provided with handles by which it may readily be removed and cleaned as occasion may require.

By use of my improvement the ice in the ice-box may be kept for a longer time than in any other form of refrigerator of this class which is known to me. This is due to the perfect means it possesses for keeping the ice dry and securing circulation of air.

Having thus described my improvement so that others skilled in the art to which it appertains may manufacture and use it, what I claim as my invention, and desire to secure by Letters Patent, is—

1. A bottle-cooler having an ice-box situate within an outer box or case, *a*, said case *a* provided at the bottom with a suitable frame or rack for supporting bottles placed within partitions thereof, on the bottom of said case, and around said ice-box, said ice-box having lateral passages and openings on the bottom for circulation of air and discharge of melted ice therefrom onto the bottom of said case, substantially as and for the purposes described.

2. A bottle-cooler having an ice-box situate within an outer box or case, *a*, said case *a* provided at the bottom with a suitable frame or rack for supporting bottles placed within partitions thereof, on the bottom of said case and around said ice-box, said ice-box having lateral passages and openings on the bottom for circulation of air and discharge of melted ice therefrom onto the bottom of said case, the partitions of said rack being provided with inferior passages *d'* to permit circulation of water around the bottles, substantially as and for the purposes described.

3. The combination, in a bottle-cooler having an inner ice-box situate within an outer case or box, of the rack *b*, with the flanged seat c^2, and hooks *i* for holding said ice-box in position upon said rack, substantially as and for the purposes described.

4. The combination, in a bottle-cooler, with the inclined interior bottom of the ice-box *c*, of an inferior perforated bottom, said inclined bottom provided with a longitudinal gutter at the base of the incline, and a water-exit situate therein, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 25th day of July, A. D. 1884.

EPHRAIM TRUXALL.

Witnesses:

THOMAS W. BAKEWELL,

JAMES H. PORTE.