(No Model.)

E. B. A. ZWOYER

LIQUID COOLER.

No. 338,906. Patented Mar. 30, 1886.

Fig. 1.

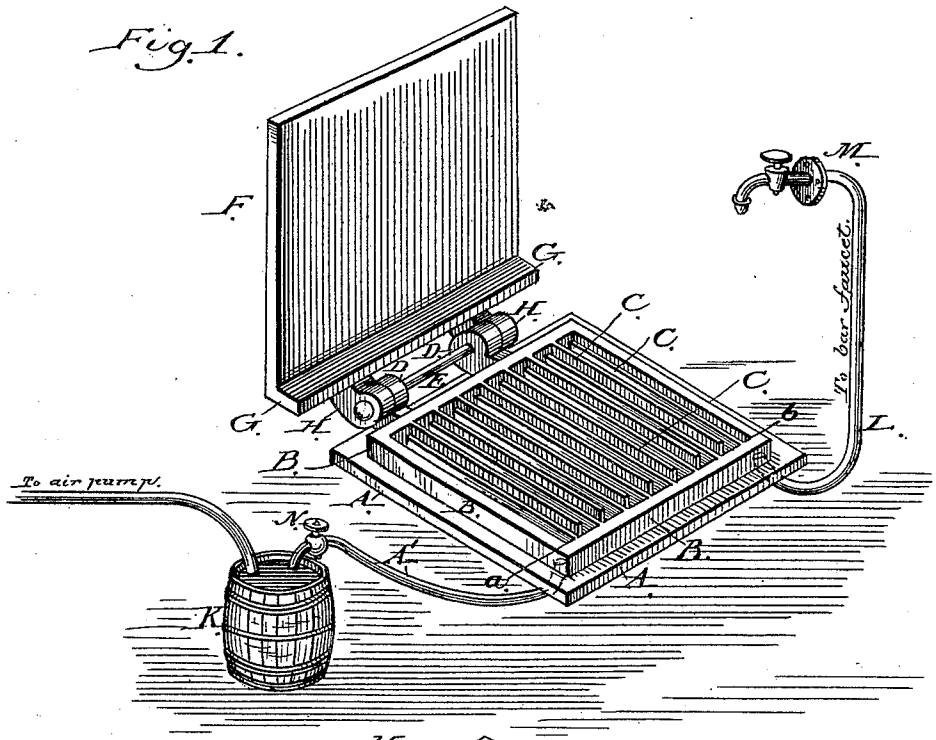


Fig. 2.

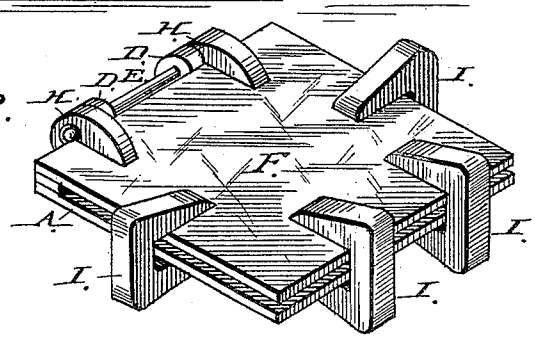
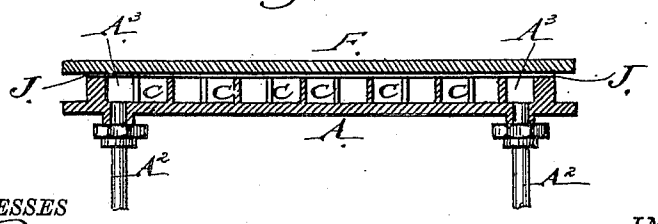


Fig. 3.



WITNESSES

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LIQUID-COOLER.

SPECIFICATION forming part of Letters Patent No. 338,906, dated March 30, 1886.

Application filed October 27, 1885. Serial No. 181,067. (No model.)

To all whom it may concern:

Be it known that I, ELLSWORTH B. A. ZWOYER, a citizen of the United States, residing at the city of Reading, county of Berks, State of Pennsylvania, have invented a new and useful Improvement in Liquid-Coolers, of which the following is a specification.

This invention is more particularly related to the class of coolers intended to cool liquids on draft, as beer, porter, ale, &c.

The object of the improvement is to supply a cooler that will occupy a comparatively small space, and yet expose a large cooling-surface to the liquid to be cooled; to economize in the consumption of ice, and yet cool the liquid to a greater extent than has been done by coolers prior to my improvement.

The accompanying drawings, forming a part of this specification, and in which like letters of reference indicate like parts, show very fully the nature of my improvement, Figure 1 being a perspective view of the cooler opened so as to expose the interior of the same, and showing the connection between the liquid-receptacle and the drawing-faucet of the bar. Fig. 2 represents the cooler as closed and locked by the clamps upon three sides of the same. Fig. 3 is a transverse cross-section upon the line *a b* of Fig. 1 upon an elongated scale.

In all coolers for liquids tapped under pressure with which I am acquainted the liquid is forced generally through a coil or series of coils of pipe, or through a flat-sided receptacle stayed to prevent rupture. In either case there was no provision for cleansing the same. In tapping beer, ale, and porter cleanliness is essential to insure the purity of the beverage. Provided with my improved cooler there is no risk of contamination, as the cooler can be cleaned thoroughly in a few minutes.

I prefer to construct the cooler as follows: A base, A, of about one foot square on plan, is provided with a raised frame, B, of about one inch in height and one-half inch in thickness, set back from the edge of the base-plate about one inch all around. The space thus inclosed is subdivided by a series of partitions, C, starting alternately from opposite sides of the frame and terminating at about one and one-fourth inch from the frame on the opposite side, thus forming a series of open channels or conduits connected and forming a continuous route for the liquid through the same. An induct-pipe, A′, forms a communication from and between the liquid-receptacle K and the cooler, and a pipe, L, between the cooler and faucet M, the means of drawing the same for the customer at the bar. Suitable thimbles and couplings, A^2, and perforations A^3 in the base A make a ready means for attaching the pipes. Stop-cocks N, at the connection of the pipes with the liquid-receptacle, enables the flow to be stopped and the cooler to be cleaned, the connection with the thimbles A^2 being broken for that purpose. I prefer to have the apertures A^3 at the front of the cooler, as shown. The partitions C all rise to the height of the frame B, and with the hinges D are cast integral with the base and frame of a metal suitable for the liquid to be passed through the same. A cover, F, having a ledge, G, and hinges H, corresponding with the hinges D of the frame, are cast in one integral piece, as shown. The pieces are put upon a planer and the entire face of the cover F and ledge G, together with the upper face of the frame B and partitions C, are planed to a uniform level face. A thickness of gum cloth or its equivalent, J, of sufficient size to cover the outer limits of the frame, is laid upon the same, and the cover F clamped upon the same. The hinges D H are then drilled and the pintel E inserted. The cooler is then provided with four or more open-jawed clamps, I, the space between the jaws of the same being somewhat wider at the free ends than at the back. These clamps are driven over the projected edges of the base and cover and detachably lock the cover liquid-tight upon the gum cloth and cooler-frame and partitions beneath the same. Screw-clamps may be used in lieu of the open-jawed clamps, as described; but I give preference to the first as being more rapidly attached and detached. The usual air or hydraulic pump is used to give the necessary pressure upon the liquid to force the same through the pipe A′, cooler A, and pipe L to the bar, where the same is drawn by the faucet M in quantity as desired. The cooler is usually laid upon the rack of the ice-box and covered with ice. I find in a practical use of the same that it is necessary to introduce a board of about

one-half inch in thickness between the cooler and the ice. Otherwise the liquid is delivered from the faucet M in too cool a conditon to suit the majority of drinkers.

It will be seen upon examination that in the cooler as improved by myself and in a cooler-frame of about the size described a continuous channel is formed of about fourteen feet in length, over which all the liquid drawn from the faucet M must pass, which accounts for its economy in the use of ice.

I am aware that coolers have been used in breweries, constructed of wood and covering large areas of flooring open to the atmosphere, and provided with disrupted partitions, forming a continuous channel for the passage of the beer, &c., through the same, (see patents to Hammer, No. 18,201, September 15, 1857, and No. 47,298, August 18, 1865; also Patent No. 294,889, March 11, 1884, Lindenberg—all beer-coolers;) but I believe myself to be the first to adapt the principle of such coolers to the wants of retailers of liquors by forming the same in one integral piece and removably closing the same to form an air-tight continuous channel adapted to pass the fluid under pressure, and at will to throw the same open for the ready cleansing thereof.

Having shown the use, construction, and advantages of my cooler, I desire to claim as follows:

1. As an improvement in coolers for liquids on draft, a shallow case having a series of division plates or partitions cast integral with the same, each alternate division-plate being disconnected from the side of the case at opposite alternate ends, thus forming a continuous open channel for the liquid, provided with induct and educt apertures at opposite ends of the case and having hinge-ears at one side of the same, with a suitably-secured cover pivoted thereto, substantially as shown, and for the purpose set forth.

2. As an improvement in coolers for liquids on draft, a receptacle or case, as described, having a lid or cover adapted thereto suitably attached to the same by hinge-ears and a pintle common to both, in combination with a suitable packing interposed between said receptacle, frame, partitions, and cover, and retained in removably liquid-tight connection therewith by open-jawed clamps or their equivalent, whereby a continuous closed channel is provided for the liquid to circulate through under pressure, and the cooler may be readily thrown open to be cleansed, substantially as shown, and for the purpose specified.

3. In a cooler for liquids on draft, the following elements in combination: a liquid receptacle, K, in communication with a pressure-pump and with the cooler by pipe and valve A′, the cooler being a hollow case or receptacle subdivided by a series of partitions, C, having a hinged and detachably connected cover, F, secured by clamps I upon a suitable packing, J, between said cooler and cover, and connected with the bar-faucet M by pipe L, substantially as shown, and for the purpose set forth.

ELLSWORTH B. A. ZWOYER.

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