(No Model.)

T. SCOTT & L. BOVARD.

REFRIGERATING TROUGH.

No. 337,446. Patented Mar. 9, 1886.

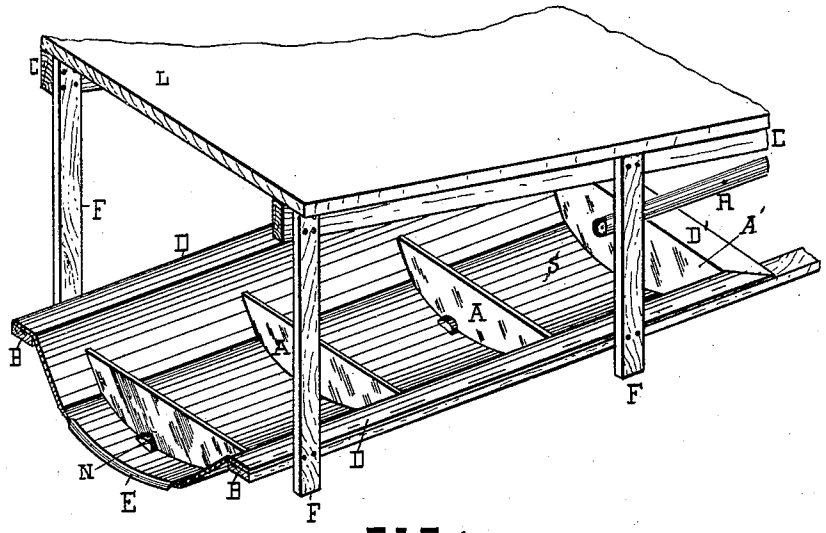


FIG 1.

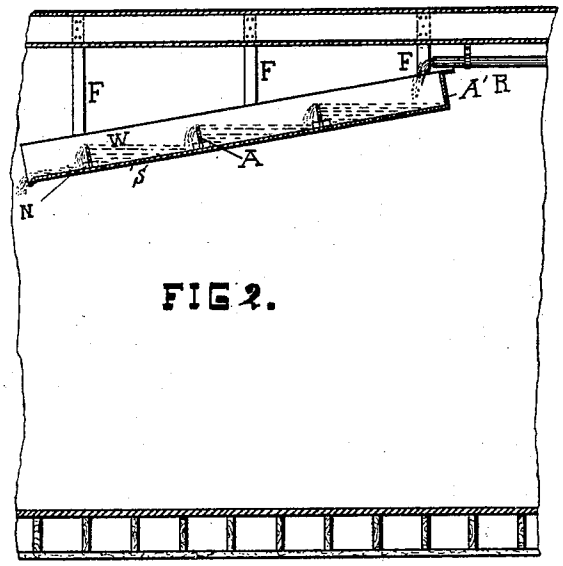


FIG 2.

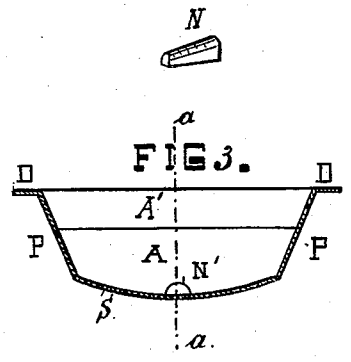


FIG 3.

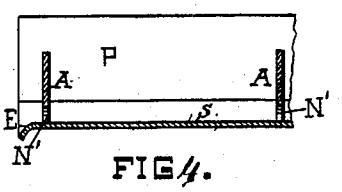


FIG 4.

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UNITED STATES PATENT OFFICE.

THOMAS SCOTT AND LAFAYETTE BOVARD, OF KANSAS CITY, MISSOURI.

REFRIGERATING-TROUGH.

SPECIFICATION forming part of Letters Patent No. 337,446, dated March 9, 1886.

Application filed August 15, 1885. Serial No. 174,454. (No model.)

To all whom it may concern:

Be it known that we, THOMAS SCOTT and LAFAYETTE BOVARD, of Kansas City, Jackson county, Missouri, have invented a new and Improved Refrigerating-Trough, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part hereof.

This invention relates to troughs for conveying liquids for cooling purposes in artificial refrigeration; and it consists, substantially, of the devices and combinations of devices hereinafter set forth, and pointed out in the claims.

The objects which we seek to accomplish by our invention may be briefly recited as follows: to provide a trough with large cooling-surfaces and improved devices for controlling the refrigerant or cooling-liquid while it is passing through the trough, and to prevent as far as possible all loss or waste of the cooling-liquid.

In the drawings, Figure 1 is a perspective view of our trough supported from the ceiling as in practice. Fig. 2 is a longitudinal section through two floors of a building and through our trough, which is properly placed therein. Fig. 3 is a transverse section through the trough; and Fig. 4 is a longitudinal section through the trough near its open end and on line *a a*, Fig. 3.

The trough proper is composed of a bottom, S, sloping sides P, and flanges or lips D, all of which are preferably formed by manipulating one single sheet of metal. The side flanges, D, are used mainly for supporting the trough, which they do by resting upon wood strips B, extending the entire length of the trough. Hangers F, attached at their upper end to the joists C and to the strips B near their lower extremity, support the trough in an inclined position, as shown. An end piece, A′, having a flange, D′, securely closes one end of the trough, and weirs or partition-pieces A divide the interior of the trough into a series of small tanks or reservoirs, from the uppermost of which the cooling-liquid overflows into those below it. The trough should be hung as close to the ceiling of the room to be cooled as is practicable, and the amount of inclination or fall which is given to it should be just sufficient to allow the reservoirs to overflow as soon as the upper portion of their bottom is covered with cooling-liquid, as shown more clearly in Fig. 2. The bottom S of the trough is made slightly cylindrical as regards its length, so that in draining it the liquid will flow down to the center. The partition-pieces A are made to fit the bottom of the trough water-tight, and a small portion of their under edge is cut out midway of their length to form an opening, N′, by means of which each reservoir may be drained of all liquid. Corks or plugs N are removably located in these openings, to be removed in draining and cleaning the reservoirs. The lower end of the trough terminates in a rounded portion, E, which acts as a drip-spout, and also tends to strengthen that end of the trough, and to hold the same in shape.

In the operation of our trough the cooling-liquid is fed to the upper end thereof by a pipe, R, (which projects over the end piece, A′,) thence it flows along down the trough, filling and overflowing each reservoir, until it is discharged at the drip E.

It is obvious that our improved trough can be hung in proper position by other means than those which we here show, and we do not desire to limit ourselves to the exact devices which we exhibit for such purpose. For instance, the strips B may be cut into short lengths and still answer the same purpose; or the strips and hangers could in some cases be dispensed with and the trough could be supported by trestles, upon which the bottom of the trough would directly rest.

By the way our trough is constructed regarding its depth and general shape, and by the means which we have shown and described for hanging it in position, all danger of tipping and consequent loss of cooling-liquid is securely obviated. Likewise, when the trough is under a heavy feed, it is impossible for any of the liquid to be lost by running over the sides of the trough, for the overflow-partitions A are only a little more than half as high as the trough-sides P. In this construction both the upper surface of the cooling-liquid and the bottom and sides of the trough form cooling-surfaces.

Having thus described our invention, what we claim is—

1. In combination with a trough formed with side flanges, D, strips B, or equivalent devices, which engage the under side of said flanges, and hangers F, which depend from the ceiling and engage said strips to support the trough, substantially as set forth, and for the purposes mentioned.

2. A trough for conveying and exposing liquid for cooling purposes, composed of bottom S, sides P, and flanges D, all formed integral of one metal sheet, end piece, A′, and partitions A, having apertures N′, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS SCOTT.
LAFAYETTE BOVARD.

Witnesses:
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