April 16, 1929. J. McL. MAXWELL 1,709,730

CATCHMENT LOUVERS FOR COOL CHAMBERS FOR PREVENTING THE PRECIPITATION OF MOISTURE ON THE PERISHABLE GOODS STORED THEREIN

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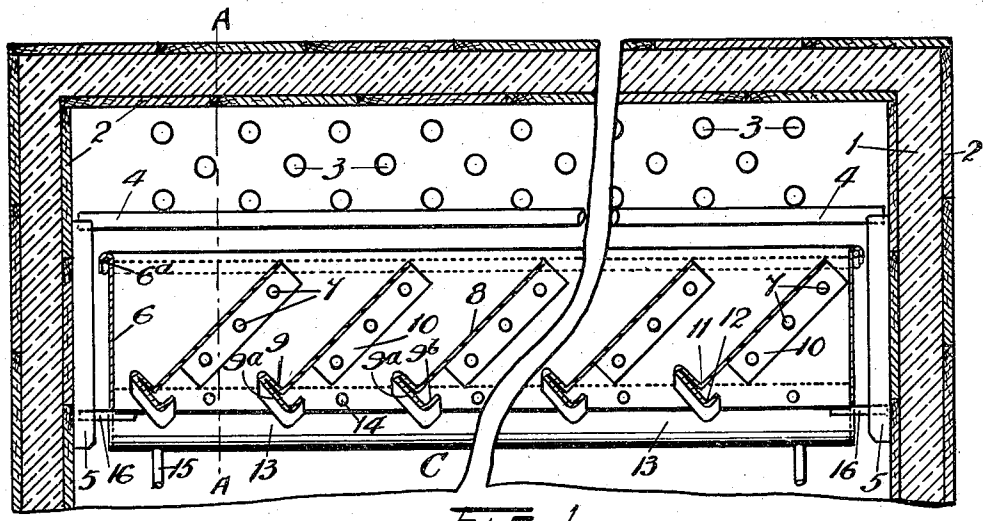


FIG. 1.

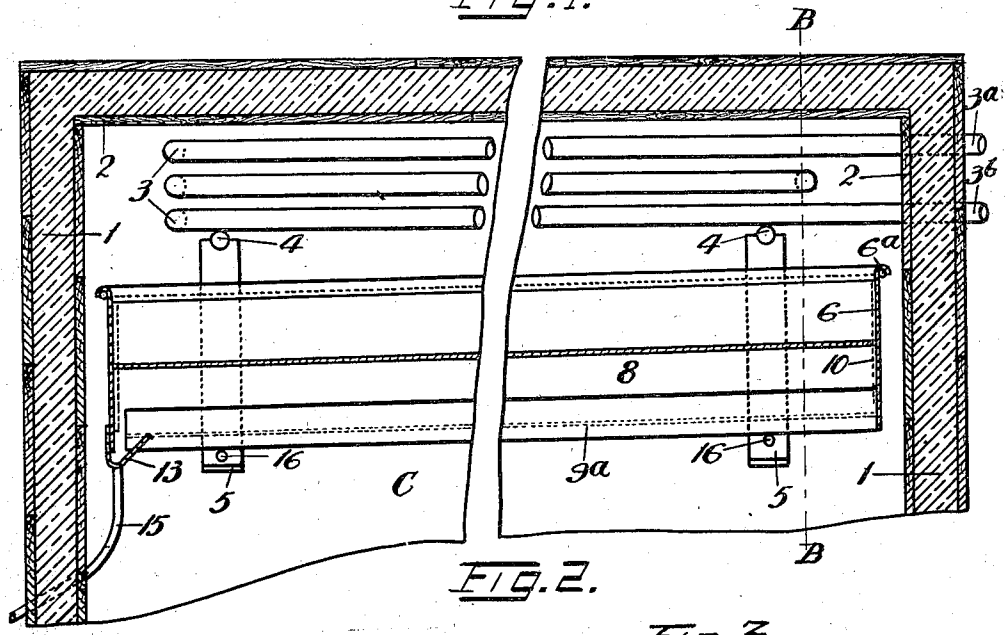
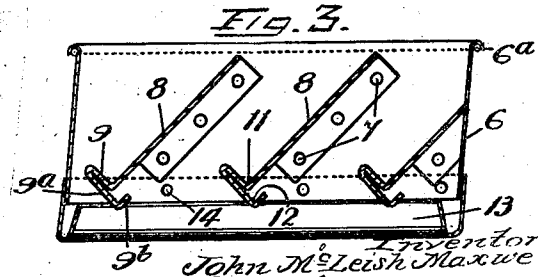


FIG. 2.

FIG. 3.



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UNITED STATES PATENT OFFICE.

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CATCHMENT LOUVERS FOR COOL CHAMBERS, FOR PREVENTING THE PRECIPITATION OF MOISTURE ON THE PERISHABLE GOODS STORED THEREIN.

Application filed January 12, 1928. Serial No. 246,288.

This invention relates to catchment louvers adapted for cool chambers disposed underneath the pipes in which the cold brine is circulated, or in which the change of state of the refrigerating medium takes place.

The present invention has for its object certain improvements in apparatus for the preservation of perishable goods, such as, beef, mutton, pork, cheese, fruit etc., where it is essential for the goods to be maintained at a constant temperature, the temperature depending on the nature of the goods stored in the cool chamber.

Moreover, by virtue of the spacing and inclination of the louvers, and my system of draining moisture therefrom, the humidity of the air in the cool chamber may be reduced to a minimum, as moisture impairs the quality of the goods, and is injurious to the wood lining and fittings of the chamber.

The only cooling pipes required are those located underneath the ceiling of the cool chamber. Cooling pipes are not required at the sides or the ends of the chamber, as this latter construction retards the movement of the heavier cold air and prevents it from absorbing heat from the warmer air surrounding the goods.

My invention consists of a series of parallel, vertically and longitudinally inclined sheet metal louvers, secured in a metal frame formed to suit the configuration of the chamber. The louvers are arranged in the frame to provide the maximum space between each pair for the downward movement of the cold air.

My invention further consists in the novel construction of the longitudinal channels provided at the lower edge of each louver, for conveying moisture from the upper and under surfaces of the louvers to a transverse collecting trough, which is secured to the metal frame at the lowest point of the louvers.

My system of louvers for preventing the precipitation of moisture upon the perishable goods stored in cool chambers, may be readily adapted to vessels provided with insulated chambers or holds, for the carriage of such perishable commodities, from the loading port, to the port of discharge.

But in order that the invention may be better understood, reference will now be made to the accompanying drawings which illustrate my invention, wherein like and corresponding parts are designated by similar reference numbers throughout the several views, in which:—

Figure 1 is a transverse section (broken) of a cool chamber on the plane indicated by the dotted line B, B, of Figure 2.

Figure 2 is a longitudinal section (broken) of a cool chamber on the plane indicated by the dotted line A, A, of Figure 1.

Figure 3 is a fragmentary transverse section showing a pair of louvers in the frame, in the horizontal position.

Referring to the drawings, C is the cool chamber, having the usual inner and outer walls, or lining 2, between which is the insulating material 1.

The cooling pipes 3 in which the cold brine is circulated, or in which the change of state of the refrigerating medium takes place, may be suspended under the ceiling of the chamber by the pipes or tubes 4 which rest in suitable notches formed in the ends of the brackets 5, the bracket 5 being secured to the inner walls or lining 2 of the chamber C.

The only cooling medium pipes required are those suspended under the ceiling of the chamber C, the cold brine or refrigerating medium may be caused to pass into the coils of pipes 3 by way of the pipe 3^b, the outlet by way of the pipe 3^a.

A metal frame 6, is preferably constructed of galvanized sheet metal formed to suit the configuration of the chamber, the upper edge of which is bent over to embrace the wire 6^a extending around the boundary of the frame 6 to provide rigidity thereto.

Referring to Figure 1, a series of louvers 8 are shown in transverse section on the plane as indicated by the dotted line B, B, of Figure 2. The louvers 8 "when secured in the frame 6" are inclined to the vertical at approximately 45 degrees, and having a longitudinal inclination of, from 5 to 10 degrees.

The ends of the louvers are bent over to form the flanges 10, for attachment, by rivets or bolts 7, to the sides of the frame 6.

The lower edge of the louvers 8 are bent at right angles to their vertical plane, as at 9, forming the channel 11 to receive any

moisture that may trickle from the upper surface of the louvers.

An extension of the sheet metal forming the channel 11 is turned round and underneath it, as at 9^a, a portion of this extension overlapping the lower edge of the louver, the outer edge of this overlapping portion is turned in an upward direction, as at 9^b, forming the channel 12, which receives any moisture that may trickle down the under surface of the louver.

The channels 11 and 12 form an integral part of the louvers 8, and strengthen them to resist longitudinal sagging. Further, the channels 11 and 12 provide a compact arrangement for receiving moisture from the upper and under surfaces of the louvers 8, and any moisture dropping from the upper edge of the louvers 8 will fall into the channel 11 adjacent that louver.

A transverse collecting trough 13 is secured to the frame 6 by rivets or bolts 14. This collecting trough 13 is positioned at the lowest point of the louvers to receive the liquid from the channels 11 and 12. The drain pipe or pipes 15, from the collecting trough 13, preferably communicate with the outside of the chamber, provided with a cock or valve (not shown in the drawings) for drawing off the liquid accumulating in the collecting trough 13, also, preventing any exchange of heat from the outside atmosphere to the chamber.

The frame 6 with the louvers in position therein, is suspended by inserting the pins 16 into orifices provided in the brackets 5, the lower edges of the frame 6 resting thereon.

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

1. In a cool chamber means for preventing the precipitation of moisture upon the goods stored therein, comprising a metal frame to fit in the chamber, a series of spaced parallel louvers secured therein, each of the said louvers having a longitudinal channel on each side of its lower edge, one channel receiving and conveying moisture or precipitation from the upper inclined surface of the louver, the other channel receiving and conveying moisture from the under surface of the louver, and a collecting trough on the metal frame into which the said channels discharge, substantially as set forth.

2. In a refrigerating device, a casing, an open frame mounted therein, a plurality of louvers inclined to the vertical and arranged in spaced relation within and carried by the frame, each of said louvers being provided with a reinforcing and moisture-directing lower edge of which one portion is doubled upon itself at right angles to the body of the louver and terminates in a projecting upturned terminal, the doubled portion extending on one side of the louver and the upturned terminal extending on the other side of said louver, said upturned terminal extending at a right angle to the body of said moisture-directing lower edge, and a drain carried by the frame and into which all of the moisture-directing edges empty.

In testimony whereof, I have signed my name to this specification at Dunedin this 15th day of December, 1927.

JOHN McL. MAXWELL.