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H. E. LISK

2,148,317

SALTING APPARATUS FOR REFRIGERATING CARS OR THE LIKE.

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FIG. 1.

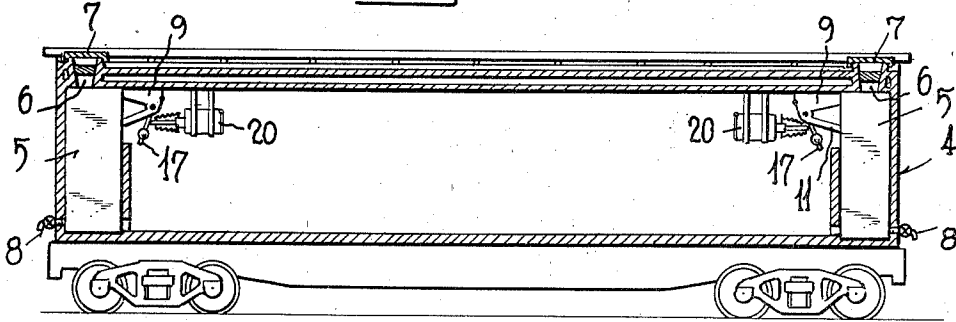


FIG. 2.

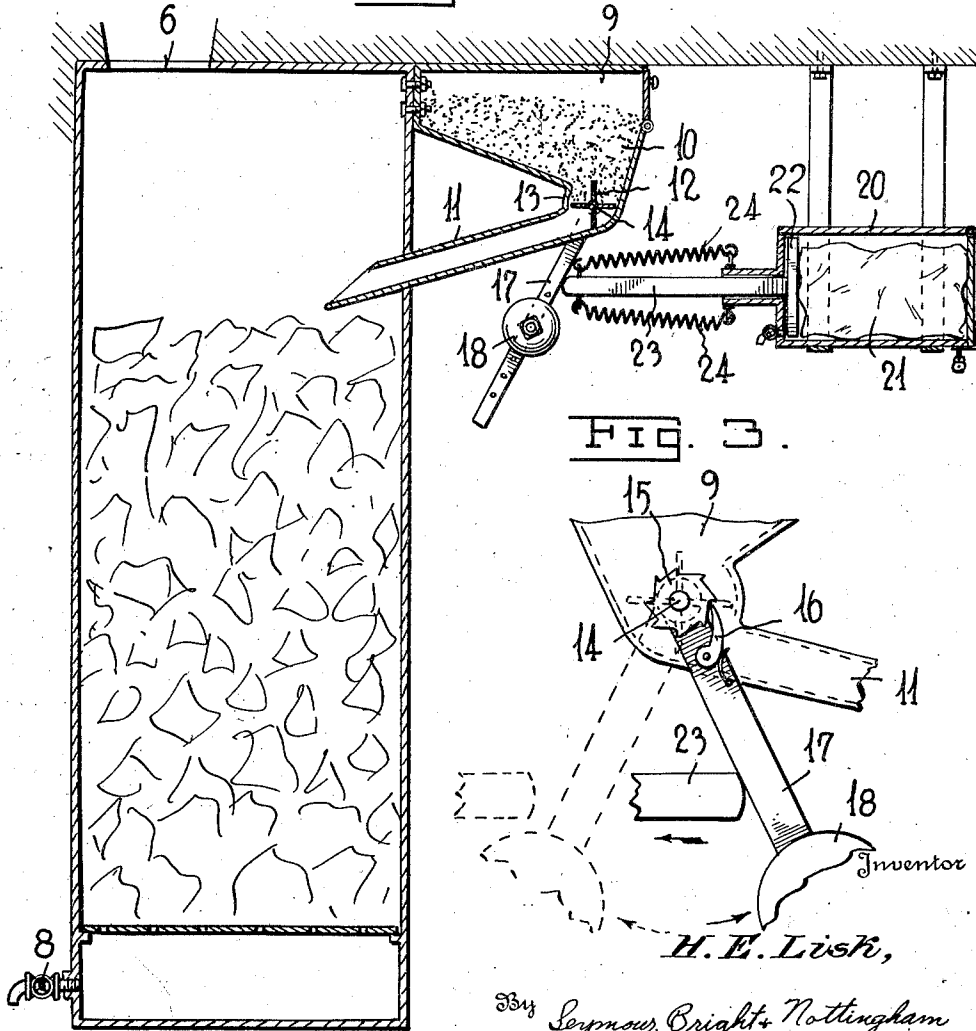
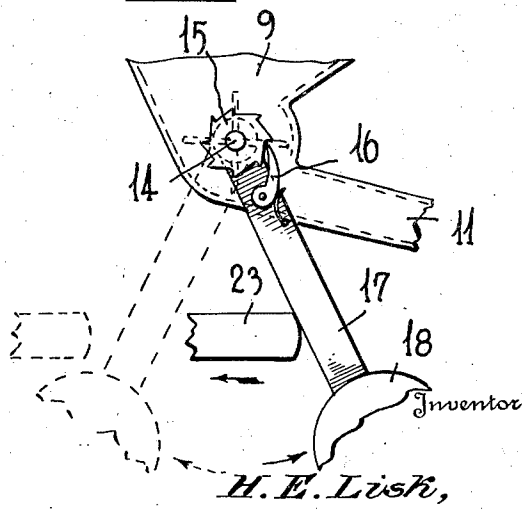


FIG. 3.



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UNITED STATES PATENT OFFICE

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SALTING APPARATUS FOR REFRIGERATING CARS OR THE LIKE

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9 Claims. (Cl. 62-15)

This invention relates to improvements in salters for the ice chambers of refrigerator cars and similar vehicles.

In my Patent No. 2,126,900, dated August 16, 1938, I have disclosed mechanism adapted to be mounted on a vehicle and motivated by starting and stopping of the vehicle, or by the rocking motion thereof for intermittently operating a valve controlling the feed or passage of salt to the ice. In such mechanism I employ a movable pendulum or weight which, of course, travels back and forth as the car or vehicle starts to travel. Consequently, the control mechanism for the salt commences to work too soon, i. e., the salt is fed to the ice before it is actually needed. Under ordinary circumstances, during the first twenty-four to thirty-six hours that the car is under way, additional salt is not necessary. In order to allow for this passage of time I have conceived the idea of preventing the weight or inertia arm from moving for a predetermined time and therefore the primary object of my invention is to provide an automatically operating means which will prevent the pendulum or weight from operating to supply salt to the ice until a predetermined period after the car has been set in motion.

With the foregoing object outlined and with other objects in view, the invention consists in the novel features hereinafter described in detail, illustrated in the accompanying drawing, and more particularly pointed out in the appended claims.

Referring to the drawing:

Fig. 1 is a longitudinal vertical sectional view of a refrigerating car provided with my improvement.

Fig. 2 is an enlarged vertical sectional view showing an ice compartment and my improved means for controlling the time when the automatic mechanism starts to re-salt the ice.

Fig. 3 is a side elevation of a detail.

In the drawing, 4 indicates any suitable type of refrigerator car provided with one or more ice tanks 5 which may be supplied with ice through top openings 6 provided with covers or doors 7. 8 indicates cocks for use in draining the tanks.

In accordance with the invention claimed in my above-mentioned patent, a hopper or other supply means 9 may be positioned at one side of each tank to supply a movable substance, such as salt 10, which passes into the tank through a conduit 11 having a control valve 12. Obviously such valve may be of any suitable type, but for the purposes of illustration, I have shown it as a paddle wheel 13 that is mounted fixedly on a rotatable shaft 14 journalled in opposite sides of the con-

duit 11. Externally of the conduit, the shaft is provided with a ratchet wheel 15 that is engaged by a spring pressed pawl 16 pivotally mounted on an inertia arm or pendulum 17 which has one of its ends rockably mounted on the shaft. The weight 18 on the pendulum may be adjusted upwardly or downwardly and held in various positions by any suitable means 18a. Obviously, due to inertia brought about by movement of the vehicle, the arm 17 will swing to and fro and cause actuation of the valve 12 to feed salt from the hopper 9 through the conduit 11 on to the ice in the ice chamber. In this way, if the mechanism is used for re-salting the ice in a refrigerator car, salt will be fed intermittently on to the ice in the tank 5.

In accordance with my present invention, I provide means to prevent the arm 17 from operating until a predetermined period of time has passed. I prefer to accomplish this result by arranging ice 20 in a compartment 21 and to use the melting of such ice to control the movement of a piston 22 which is operatively arranged in the compartment 21. The rod 23 of the piston projects into the path of movement of the arm 17 and initially holds this arm in a position to prevent swinging thereof. As the ice in the chamber 20 melts, springs 24 or the like, will act to pull the arm 23 toward the chamber 20, and in the course of time will move the piston rod to the point where it will no longer obstruct the movement of the inertia arm. From that time on, the inertia arm may swing to cause salt to be fed from the chamber 9 on to the ice in the chamber 6.

It is obvious that instead of using water ice in the auxiliary chamber 20, that I might use dry ice or any substance that would disintegrate in the course of time, and in the claims I intend to include such substances as the equivalent of a meltable material.

While I have disclosed the invention for use in re-salting the ice in refrigerating cars, I am aware that such control means may be used for various purposes. I therefore desire it to be understood that the control mechanism described and illustrated is a form suitable for my purposes, and that changes and various modifications may be made as may be convenient or desirable without departing from the salient features of the invention, and I therefore intend the following claims to cover such modifications as naturally fall within the lines of the invention.

What I claim and desire to secure by Letters Patent is:

1. The combination with inertia operated

means for feeding salt to the ice container of a movable vehicle, of means cooperating with the first-mentioned means for preventing operation thereof until the lapse of a predetermined period of time.

2. The combination with a movable vehicle carrying a salt container, an ice container and a passageway placing said containers in communication, and means interposed in the passageway for controlling the passage of salt therethrough, a weight adapted to move back and forth due to the movements of the vehicle, means actuated by said weight for controlling the feeding means, of means cooperating with the weight for preventing active movement of the latter until the lapse of a predetermined period of time.

3. The combination with a movable vehicle carrying a salt container, an ice container and a passageway placing said containers in communication, of feeding means interposed in the passageway for controlling the passage of salt therethrough, a weight adapted to move back and forth due to movements of the vehicle, means actuated by said weight for controlling the feeding means, and means cooperating with the weight and including a meltable element for preventing active movement of the weight until the lapse of a predetermined period of time.

4. In apparatus of the character described, a main ice compartment, an auxiliary ice compartment arranged exteriorly thereof, of means controlled through the melting of ice in the auxiliary compartment to automatically supply salt to the ice in the main compartment after the lapse of a predetermined period of time.

5. In apparatus of the character described, a main ice compartment, inertia means to automatically supply salt to the ice in said compartment, and means cooperating with the last-mentioned means for preventing the operation of

the last-mentioned means until the lapse of a predetermined period of time.

6. In apparatus of the character described, an ice compartment, inertia means to automatically supply salt to the ice in said compartment, and means including a meltable element arranged exteriorly of said compartment for preventing the operation of the first-mentioned means until the lapse of a predetermined period of time.

7. In a refrigerator car, an ice compartment, inertia means actuated by the movement of the car to automatically supply salt to the ice in said compartment, an auxiliary ice compartment, and means controlled by the melting of ice in the auxiliary compartment to prevent the operation of said inertia means until the lapse of a predetermined period of time.

8. In a refrigerator car, a main ice compartment, inertia means controlled by movement of the car to automatically supply salt to the ice in said compartment, an auxiliary ice compartment, a piston arranged in the auxiliary compartment, a piston rod connected to the piston and normally held in a projected position in the path of movement of an active element of said means to prevent the feeding of salt by said inertia means until the lapse of a predetermined period of time, and yielding means normally urging the piston rod toward the auxiliary compartment.

9. In a vehicle of the character described, the combination of two compartments with feeding means depending upon movement of the car to feed a substance from one compartment to another, of means cooperating with the last-mentioned means to prevent movement of such means until after the passage of a predetermined period of time.

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