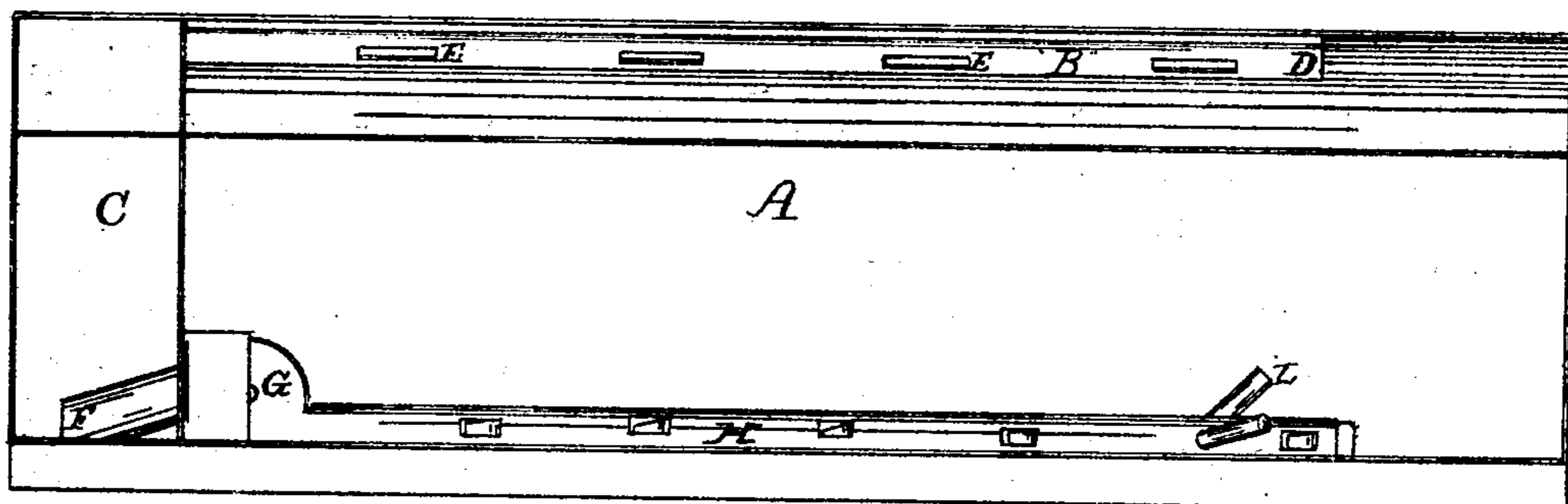


J. J. BATE.
Refrigerator-Cars.

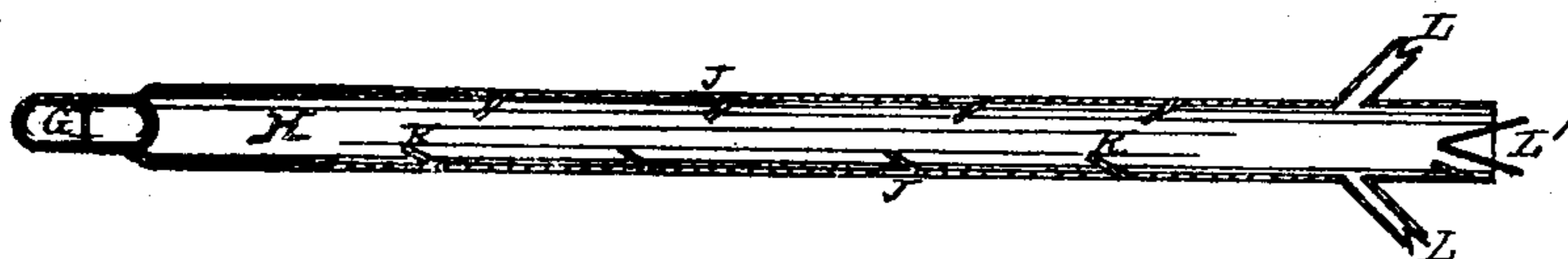
No. 146,980.

Patented Feb. 3, 1874.

1.



2.



Witnesses

Samuel Jones

Robert Everett

Inventor

John J. Bate

by Atty. Gen. J. L. Everett

UNITED STATES PATENT OFFICE.

JOHN J. BATE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN REFRIGERATOR-CARS.

Specification forming part of Letters Patent No. **146,980**, dated February 3, 1874; application filed June 12, 1873.

To all whom it may concern:

Be it known that I, JOHN J. BATE, of the city of Brooklyn and State of New York, have invented a certain Improvement in Refrigerating Provision-Cars, of which the following is a specification:

It is now well and fully understood that in order to preserve animal and vegetable food a certain degree of cold or the absence of heat must exist. This has been heretofore attempted by passing the current of atmospheric air of the car through a box or receptacle containing ice, which both cools and dries the air.

My invention relates to this class of cars, and has for its object the more equal distribution and corresponding diffusion of the air through the car. It therefore consists, first, in combining, with the lower part or floor of the car, a pipe or pipes having openings or outlets at different points in its length, and an equal number of deflecting-plates arranged within the pipe, so as to divide up and distribute the air which is drawn from the ice-chamber and forced into said pipe by a fan-blower or other suitable means; secondly, in combining, with the ice-chamber and perforated inlet-pipe, a slotted exit-pipe provided with a slide for regulating the size of the exits, or closing them entirely, whereby the volume of cold air circulating through the car may be diminished or cut off entirely, as may be desired.

The drawings herewith show, Figure 1, a view of the interior of the car, the side thereof being removed; and by Fig. 2, a view of the pipe in connection with the pump, the top of the pipe having also been removed.

In the top or upper part of the car A the pipe B is properly affixed. It will be noticed that this pipe conducts the air from the interior of the car to the ice-chamber C, and that it is open at the end D, and is slotted, as at E. In this pipe a slide may be fitted, and in some instances will be necessary. This slide may be on the interior or exterior of pipe D, and operated in any convenient manner. It should be provided with slots of the size of those marked E in pipe D, and should register therewith, so that the size of the air-exits may be controlled at pleasure. Through the ice box or chamber C the air is drawn by a pipe,

F, continued from pump G, and is forced through the tube or pipe H into the interior of the car or chill-chamber. The distributing-pipe H has throughout its length openings J, guarded on the inside of the pipe by deflectors K, said deflecting-plates being formed, when tin or soft metal is used, by the tongues or portions of the pipe forced in by a die or punch, which makes the openings J. When the distributing-pipe is of hard or brittle metal, the deflecting-plates are otherwise applied. These openings may be capped by branch pipes, as shown at L, and the end of the main pipe closed, or left open and provided with deflecting-plates L, each and all of which will, to a greater or less extent, accomplish the object which I have in view, viz., to break up and equally distribute the air throughout the car.

This arrangement of means for refrigerating the provision-chamber of cars may be applied to the like chambers of ware or provision houses, and chambers for keeping meats and provisions generally. When so adapted, the fan-blower may be operated by any motive power at hand, or mechanical devices convenient, among which may be included clock movements.

When the last-named means are used, I prefer that the movement of the clock be actuated by india-rubber springs, instead of metallic springs or weights.

Having thus described my invention, I claim—

1. In combination with the ice-chamber of a refrigerator-car, and suitable means for inducing a current of air therethrough, a perforated air-distributing tube or pipe, provided with interior deflecting-plates, substantially as and for the purpose specified.

2. In combination with the ice-chamber, means for inducing the circulation of air, and an air-distributing pipe, a slotted exit-pipe, provided with a slide for varying the size of the exit-orifices, substantially as specified.

This specification signed this 29th day of May, 1873.

JOHN J. BATE.

Witnesses:

A. E. LAMB,
L. M. HALSEY.

750 words