

(No Model.)

JOHN LORENZ & JACOB LORENZ.

REFRIGERATOR CAR.

No. 562,087.

Patented June 16, 1896.

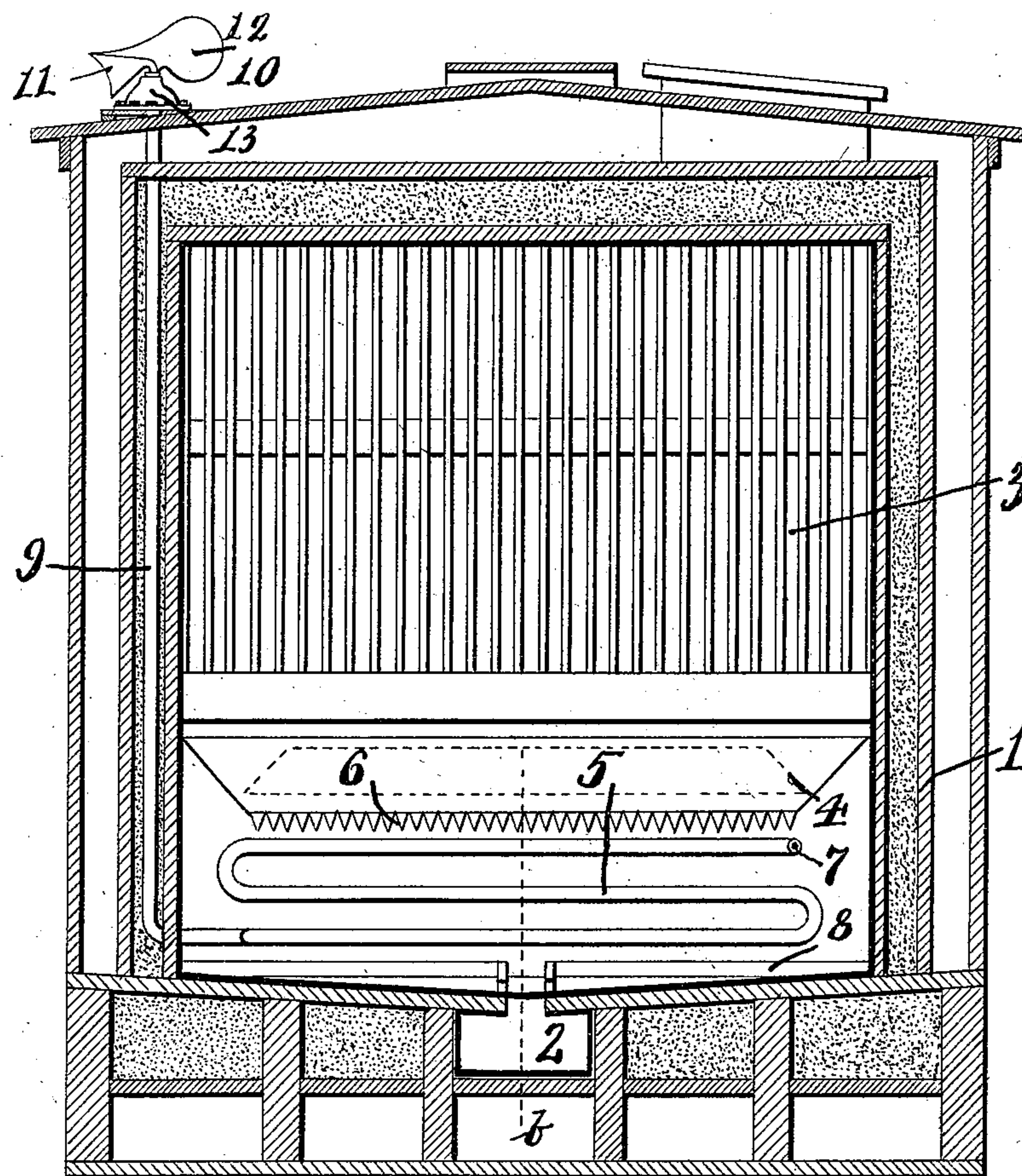


Fig. 1.

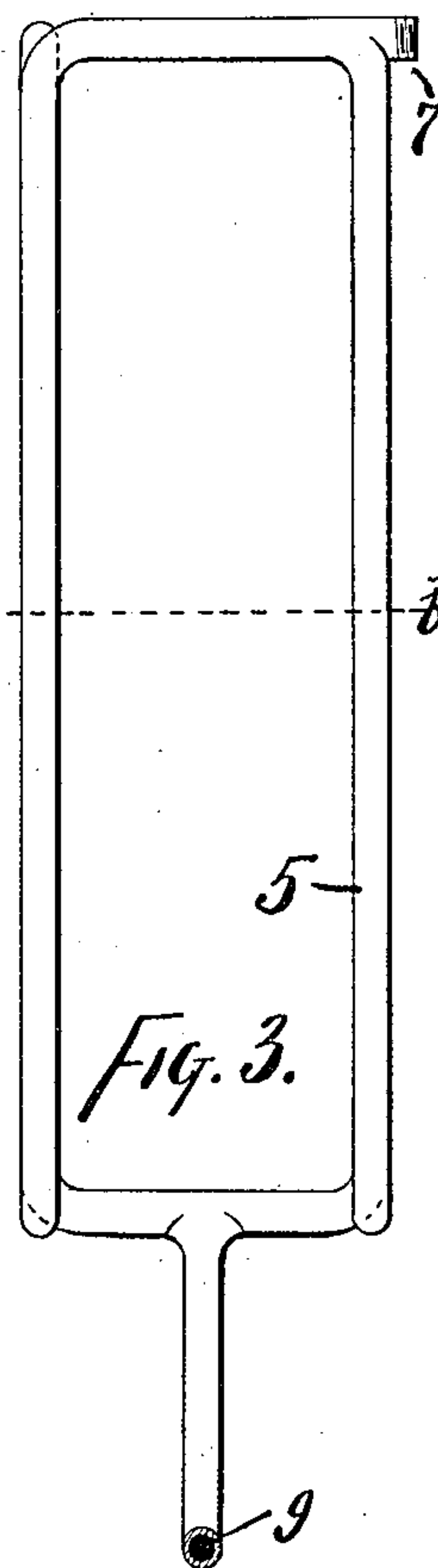


Fig. 3.

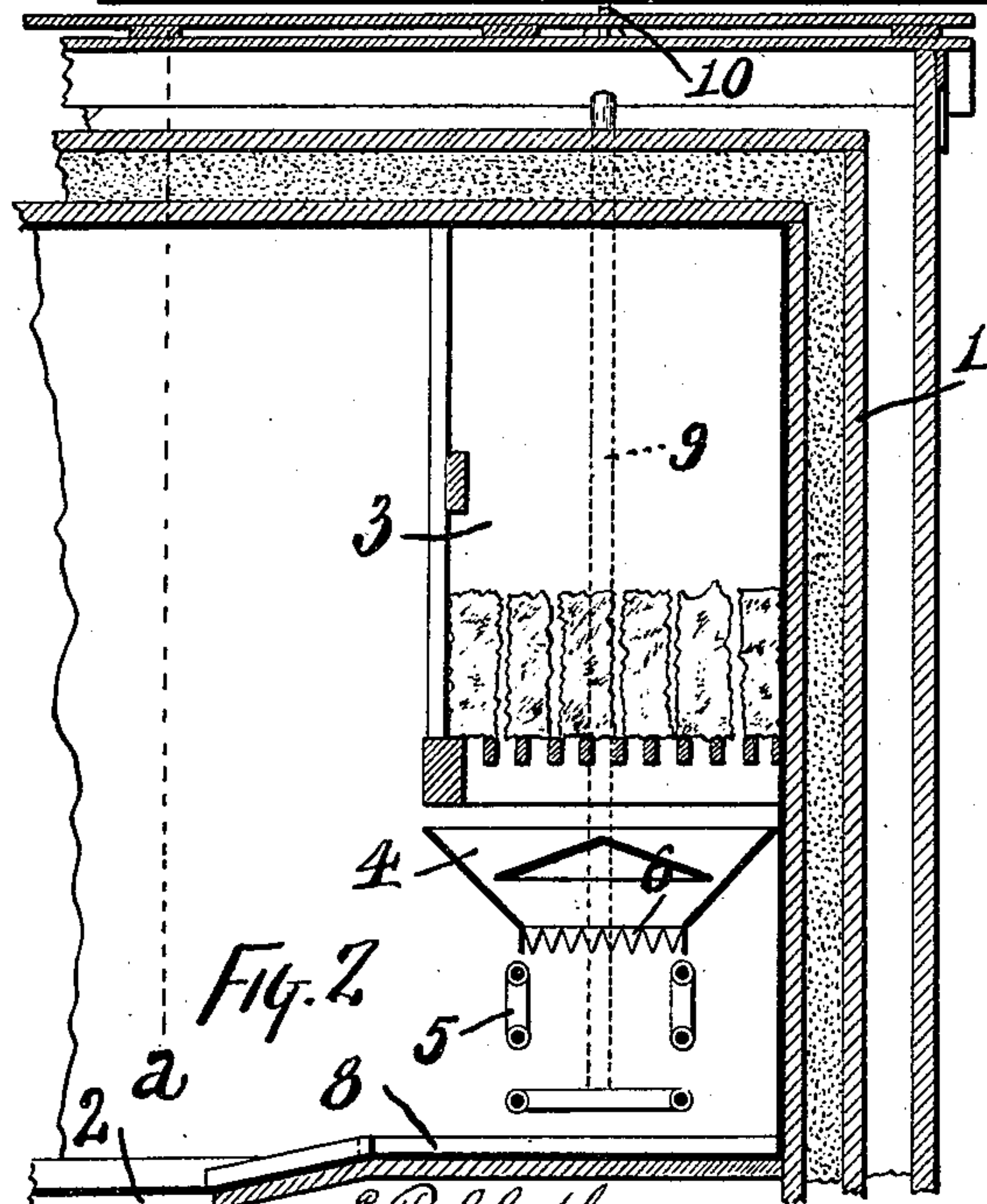


Fig. 2.

Witnesses.

E. R. Shipley.
C. M. Shuman.

John Lorenz Inventors
Jacob Lorenz
by James W. See Attorney

UNITED STATES PATENT OFFICE.

JOHN LORENZ AND JACOB LORENZ, OF HAMILTON, OHIO, ASSIGNORS, BY
MESNE ASSIGNMENTS, TO THEMSELVES AND GEORGE STROH, OF SAME
PLACE.

REFRIGERATOR-CAR.

SPECIFICATION forming part of Letters Patent No. 562,087, dated June 16, 1896.

Application filed March 20, 1895. Serial No. 542,568. (No model.)

To all whom it may concern:

Be it known that we, JOHN LORENZ and JACOB LORENZ, of Hamilton, Butler county, Ohio, have invented certain new and useful
5 Improvements in Refrigerator-Cars, of which the following is a specification.

Reference is hereby made to Lorenz' United States Patent No. 236,712, of January 18, 1881, for "refrigerating-cars," which patent sets
10 forth a system of general refrigerator-car construction which may be availed of in utilizing our present improvements, which are designed to secure an injection of refrigerated air into a refrigerator-chamber, such as a car.

15 Our present improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a vertical transverse section of
20 a refrigerator-car embodying our improvements, the plane of this section corresponding with line *a* of Fig. 2; Fig. 2, a vertical longitudinal section at one end of the car, the plane of section corresponding with line *b* of
25 Figs. 1 and 3; and Fig. 3, a plan, on an enlarged scale, of the pipe-coil below the ice-crib.

In the drawings, 1 indicates the body of the car, whose construction as to walls, floor, and
30 roof may be as set forth in the Lorenz patent previously referred to; 2, the drain-gutter for carrying away the drip-water; 3, an ice-crib formed of gridwork at one or both ends of the car, the floor of this crib being at some distance above the floor of the car; 4, a hopper
35 disposed below the crib and adapted to catch the ice-water dripping therefrom as the ice melts; 5, a pipe-coil disposed below the hopper and formed of metal, the coil preferably
40 consisting of several horizontal passes in one vertical plane and several horizontal passes in a second parallel vertical plane; 6, drip-teeth formed at the bottom of hopper 4 to cause the water to drip therefrom to the pipe
45 of the coil; 7, the outlet of the pipe-coil to the car, this outlet being connected with both of the coil members, the outlet being threaded or otherwise fitted to receive a cap or stopper, by means of which the outlet may be closed;
50 8, a drip-pan upon the floor of the car below the ice-crib and pipe-coils and draining to the

drain-gutter of the car; 9, an air-inlet pipe extending from the top of the car down into communication with both members of the pipe-coil, whereby air entering pipe 9 goes hori- 55
zontally through the lowest pass of each member of the coil, then back through the intermediate pass of each member, and then forward again through the top pass of each member of the coil to the common outlet 7; 10, an air- 60
injector mounted on the top of the car over the top of pipe 9; 11, admission-funnel of the injector, presenting itself to horizontal air-currents and vertically swiveled in a proper bearing mounted upon the top of the car, so 65
that the funnel may turn to present itself against the current; 12, a vane attached to the funnel and serving to automatically turn the funnel to proper direction of presentation to current; 13, a chamber at the top of pipe 70
9, this chamber structure forming also the supporting swivel-bearing for the funnel.

Air-currents entering funnel 11 go through pipe 9 and the coil, and in the latter are cooled by the dripping ice-water, and the cooled air 75
discharges into the car from pipe 7, which is to be closed if fresh air is not wanted in the car. In the absence of air-currents forcibly entering funnel 11, due to lack of wind or lack of car movement, then the flow of air through 80
the coil will be due entirely to the cooling of the air in the coils by the ice-water.

We claim as our invention—

1. The combination, substantially as set forth, of an ice-crib, a pipe-coil disposed 85
thereunder and having an outlet and an inlet pipe, and a drip-hopper disposed below the ice-crib and having drip-teeth over the pipe-coil.

2. The combination, substantially as set 90
forth, of an ice-crib, a pipe-coil disposed thereunder and formed with members disposed in several vertical planes and having an inlet and an outlet pipe, and drip devices disposed below said ice-crib and over said 95
coil and arranged to catch water dripping from said ice-crib and concentrate it into separate lines of drip over the several members of said coil.

3. The combination, substantially as set 100
forth, of an ice-crib, a pipe-coil thereunder having an outlet and an inlet pipe, drip de-

vices arranged to direct dripping ice-water from the ice-crib to the coil, and a swiveled air-injecting funnel communicating with the inlet-pipe of said coil.

- 5 4. The combination, substantially as set forth, of an ice-crib, a pipe-coil thereunder having an outlet and an inlet pipe, a drip device to direct the drip from the ice-crib to said coil, a chamber communicating with the

inlet-pipe of the coil, and an injecting-funnel having a nozzle communicating with said chamber.

JOHN LORENZ.
JACOB LORENZ.

Witnesses:
GEOR. STROH,
I. N. SLAYBACK.