M. HAUGHEY.

Refrigerator-Cars.

No. 204,729. Patented June 11, 1878.

Fig. 1.

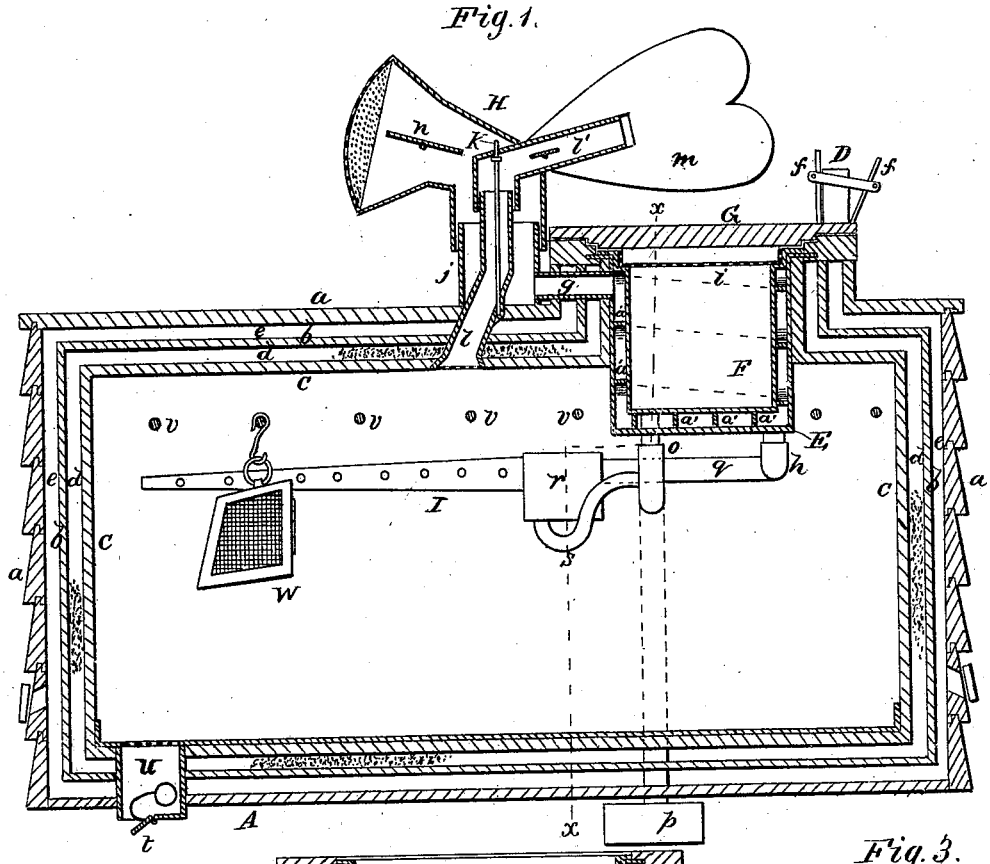


Fig. 2.

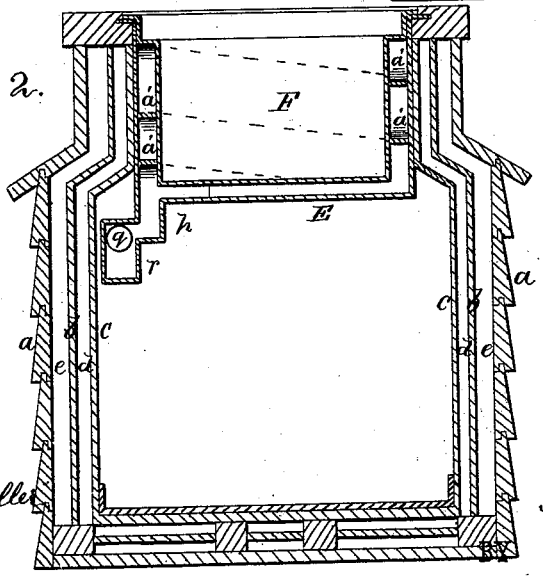
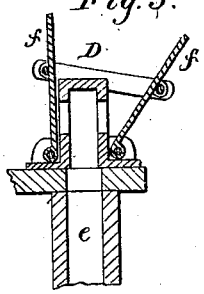


Fig. 3.



WITNESSES:

Henry N. Miller

C. Sedgwick

INVENTOR:

M. Haughey

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

MICHAEL HAUGHEY, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN REFRIGERATOR-CARS.

Specification forming part of Letters Patent No. **204,729**, dated June 11, 1878; application filed April 10, 1878.

To all whom it may concern:

Be it known that I, MICHAEL HAUGHEY, of the city and county of St. Louis, and State of Missouri, have invented a new and Improved Ventilating and Refrigerating Railroad-Car, of which the following is a specification:

Figure 1 is a longitudinal section of a refrigerating-car constructed according to my improvement. Fig. 2 is a vertical transverse section taken on line *x x* in Fig. 1. Fig. 3 is a detail view of the car-ventilator.

Similar letters of reference indicate corresponding parts.

The object of my invention is to ventilate and cool railway-cars used in the transportation of perishable articles.

In the drawing, A is a car having treble walls *a b c*, inclosing two spaces, *d e*. The inner space, *d*, is filled with granulated cork, or cork shavings, and the water-space *e* contains air. The outer wall of the car is composed of siding tongued and grooved together, to render it tight and weather-proof.

At the top of the car there is a ventilator, D, which communicates with the air-space *e*, and causes a continual circulation through the said space, the air entering apertures in the side of the outer wall, near the bottom of the car.

The ventilator consists of a square box, open on opposite sides, and provided with two doors, *f*, which are hinged to the sides of the box at or near its base, and are connected by rods, which are pivoted to both of them, keeping the doors apart, so that only one at a time can come into contact with the side of the box. The wind closes the door on the windward side of the ventilator, and by this means opens the door on the opposite side.

A chamber, E, is formed in the top of the car, near one end, and to it is fitted a box, F, which is provided with external flanges *a'* on its sides, ends, and bottom, which touch the walls of the chamber and form a continuous passage around the box from the air-inlet pipe *g* to the air-discharge pipe *h*.

A tray, *i*, of perforated metal or wire-cloth, is fitted to the top of the ice-box F, for containing salt, and a wooden cover, G, is fitted over all. At one side of the ice-box F there is a cowl, H, which turns on the short vertical pipe, *j*, and is supported on a pivot, *k*, in the center of the said pipe. The pipe *j* communicates with the passage around the ice-box.

A tube, *l*, communicates with the interior of the car, and its upper end projects into a pipe, *l'*, that extends through the side of the cowl opposite its mouth. To the outer end of this pipe a vane, *m*, is attached, for keeping the mouth of the cowl to the wind. The mouth of the cowl is provided with a wire-gauze cover, to prevent the entrance of cinders, and the lower end of the tube *l* is also covered with wire-gauze, to prevent the entrance of dust and cinders.

The cowl is provided with a damper or valve, *n*, which may be turned to control the admission of air, and the pipe *l'* is provided with a valve for controlling the escape of air from the car.

The ice-box is provided with a drip-pipe, *o*, which extends below the floor of the car and discharges into a drip-cup or trap, *p*, which permits the water to escape, but prevents the entrance of air.

A pipe, *q*, connects the air-discharge pipe *h* with a box, *r*, which receives the moisture, dust, and cinder which pass the cowl.

An inverted siphon, *s*, connects the box *r* with the drip-pipe *o*, and forms at the same time a trap, which prevents the air forced through the pipe *q* from escaping to the drip-pipe.

A tapering perforated pipe, I, projects from the box *r*, and distributes the cooled and filtered air throughout the interior of the car.

The warm and vitiated air escapes from the car through the pipe *l*, while any moisture that may drip from articles contained by the car escapes through a spring-supported door, *t*, at the bottom of a well or trap, *u*, in the corner of the car.

The car is provided with a number of transverse rods, *v*, from which to suspend articles to be transported. A number of wire-gauze cases, *w*, containing charcoal is suspended from the rods *v*, to absorb gases given off from articles contained by the car.

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

1. The combination, with chamber E, having pipe *g*, and car having pipe *j*, of the valved cowl and pipe H *l*, supported on the pivot *k*, said cowl having a wire-gauze at one end and a vane at the other, as and for the purpose set forth.

2. The combination, with car and ice-box, of the drip-pipe *o*, pipe *q*, box *r*, siphon *s*, and perforated pipe I, as and for the purpose specified.

3. The ventilator D, having the connected hinged doors *f*, in combination with the refrigerator-car A, having the air-space *e*, substantially as shown and described.

MICHAEL HAUGHEY.

Witnesses:
ABRAHAM R. WOOD,
BERNARD MAGUIRE.