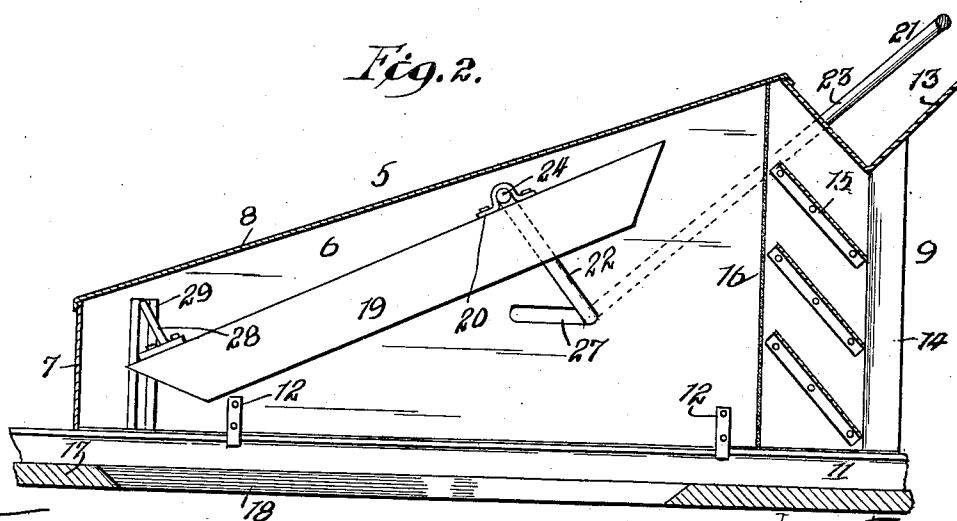
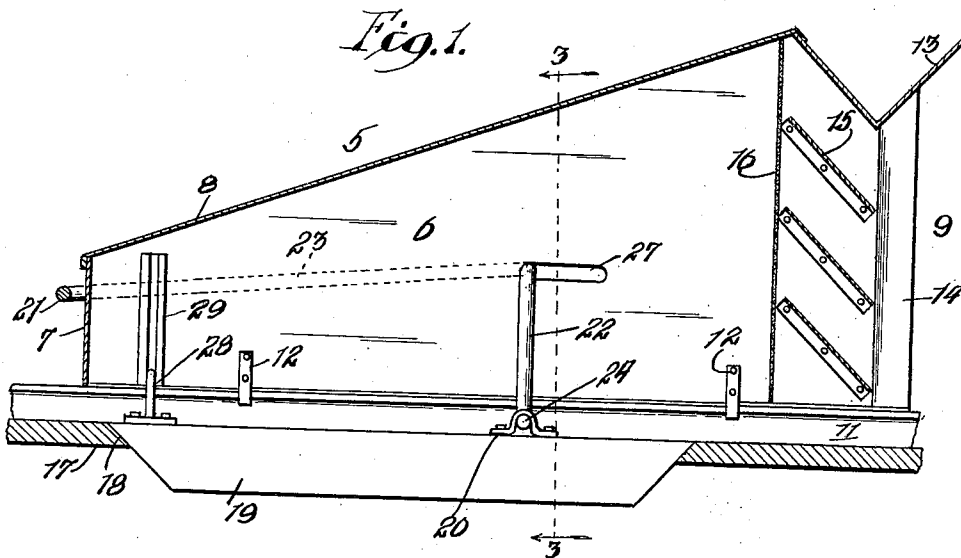


1,017,445.

D. C. MULVIHILL.
VENTILATOR FOR REFRIGERATOR CARS.
APPLICATION FILED OCT. 5, 1909.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 1.



Witnesses:

H. P. Bond
Ephraim Banning

Inventor:
Daniel C. Mulvihill

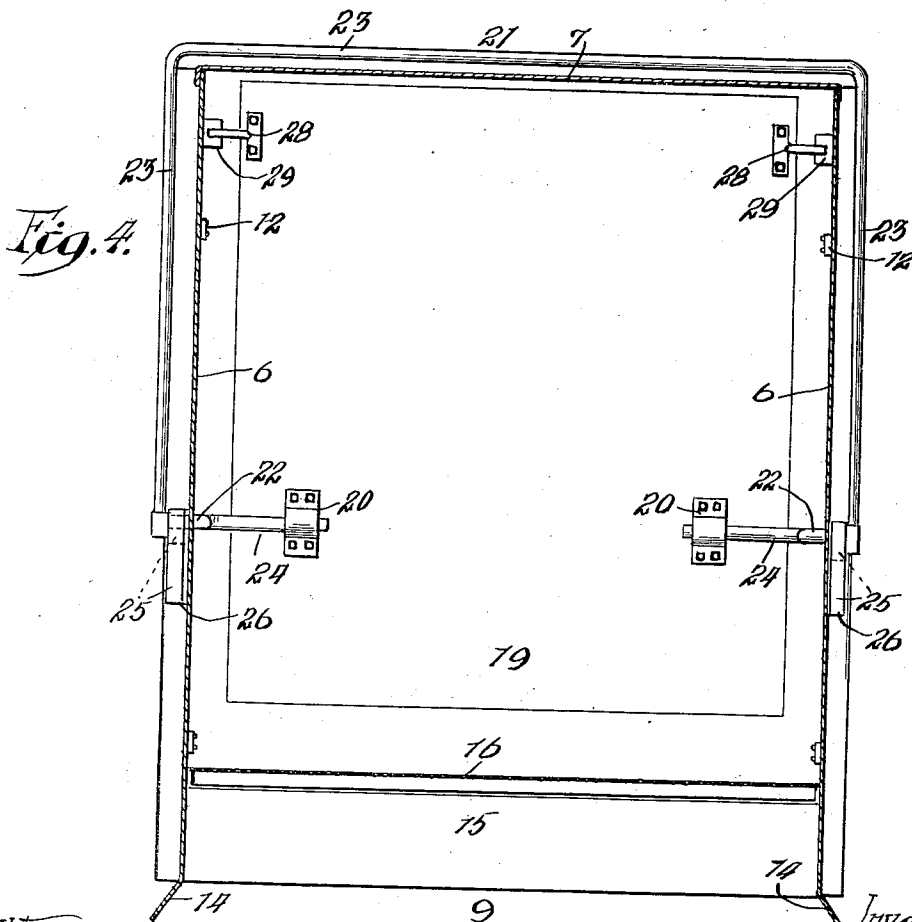
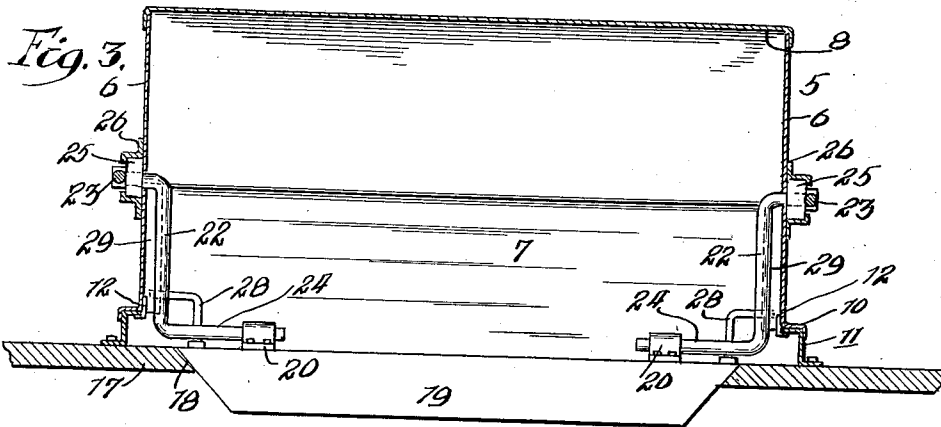
by *Banning & Banning*
Attys.

D. C. MULVIHILL.
VENTILATOR FOR REFRIGERATOR CARS.
APPLICATION FILED OCT. 5, 1909.

1,017,445.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 2.



Witnesses:

Wm. P. Ford
Ephraim Banning

Inventor:
Daniel C. Mulvihill:

by Banning & Banning
Attys.

UNITED STATES PATENT OFFICE.

DANIEL C. MULVIHILL, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN CAR & FOUNDRY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

VENTILATOR FOR REFRIGERATOR-CARS.

1,017,445.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed October 5, 1909. Serial No. 521,118.

To all whom it may concern:

Be it known that I, DANIEL C. MULVIHILL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ventilators for Refrigerator-Cars, of which the following is a specification.

The objects of the present invention are, to construct a ventilator in which the opening through which the air passes for the purpose of ventilation also serves as the opening through which the ice is passed into the refrigerating compartment, thus eliminating the formation of a separate opening for each purpose, and effecting a consequent saving in the cost of construction of the car; to construct a ventilator which will have all of the structural properties necessary to insure a sufficient volume of air entering the interior of the car, and for protecting the opening where such air enters against the ingress of dust; which will be quickly and easily removed, when such removal is necessary to enable ice to be passed through the opening into the refrigerating chamber; and in which the cover for the opening in the roof of the car can be quickly and easily raised and lowered.

In the drawings, Figure 1 is a sectional elevation, showing the ventilator cover lowered and the ventilator closed; Fig. 2 is a similar view, showing the cover raised and the ventilator open; Fig. 3 a section on line 3—3 of Fig. 1; and Fig. 4 a sectional plan view.

The ventilator consists of a housing 5, comprising side walls 6, an end wall 7, a top wall or roof 8, and a mouth 9.

The lower edges of the side walls are bent to form L-shaped flanges 10 which rest upon rails 11 of a trackway, and located on the interior of the housing are flanged members 12 which contact the under side of the rail. The flanged end 10 and the flanged members 12 hold the housing in position upon the rails and guide the housing in its movement thereon, allowing the housing to be slid back and forth when such operation is necessary, in order to leave an unobstructed opening through which to pass ice into the refrigerating chamber.

The mouth 9 has its top wall 13 and side walls 14 flared to produce a funnel-like construction, which causes a greater volume of

air to enter at the mouth than would be the case if such construction were not present. Baffle plates 15 are positioned adjacent to the mouth, and a wire screening 16 is secured behind said baffle plates, forming a protection against the ingress of dust or cinders. The car roof 17 has formed therein a downwardly tapered ventilating opening 18, into which is entered a downwardly tapered cover 19, which has attached thereto by brackets 20 an operating arm 21. This operating arm is of a formation that when the ventilator is closed, as shown in Fig. 1, it will comprise vertically extending portions 22 entered into the interior of the housing, and a horizontally extending U-shaped portion 23 lying outside of the housing, the horizontally extending portion constituting a handle which is grasped by the operator in raising and lowering the ventilator cover. The vertically extending portions 22 have their ends 24 bent so as to enter the brackets 20 attached to the cover.

The vertically extending portions 22 of the operating arm are entered through blocks 25, which travel in guideways 26 fastened to the outside of the side wall of the housing, and at the point where the operating arm enters the housing slots 27 are formed in the side walls to allow of the necessary horizontal movement of the arm, which takes place when the ventilator covering is raised and lowered. The covering has attached, at one end thereof, guide members 28 which enter into guideways 29 secured to the side walls of the casing. When the operating arm 21 is thrown to raise the ventilator covering, because of the tapered formation of the ventilator hole and cover, the movement of the cover downward is impossible, so that, as the operating arm is swung forward toward the mouth or opening, the vertically extending portion 22 will be swung toward the closed end of the housing, and as a tilting down of the end of the covering is impossible, owing to its tapered formation, a lifting action results; and as the cover is held against rearward movement by the guide members 28 the slots 27 are necessary in order to allow of horizontal movement on the part of the vertically extending portions to eliminate the binding action that would otherwise result.

The operation will be understood from the foregoing, but briefly is as follows: When it

is desired to open the ventilator, the arm 21 is swung forward, and the cover, being held against any other than an upward movement, will rise, thus opening the ventilator and permitting air to enter the car, and the plug is held in such position by the cranks being thrown slightly past the center of gravity. When it is desired to use the ventilating hole for the purpose of passing ice to the refrigerator chamber, the cover is first raised and then the housing and cover are moved backward along the trackway, leaving a clear opening in the top of the car through which the ice can be passed. It will be seen that with the arrangement above described, of placing a housing over the ventilating hole, the air, after entering the mouth of the housing, will be guided directly into the interior of the car, causing a larger volume of air to enter than would be the case if the opening were left uncovered.

I claim:

1. In a device of the class described, the combination of a car body having a ventilating opening formed therein, a cover for said opening, a housing surrounding said opening and having a mouth formed therein for the admission of air, an operating arm entered through said housing and attached to said cover, for raising and lowering said cover to open and close the ventilator, and a track-way secured to the car body, upon which the housing is slidably mounted substantially as described.

2. In a device of the class described, the combination of a car body having a downwardly tapered ventilating opening formed in the roof thereof, a cover for said opening having a corresponding downwardly extending taper, a housing surrounding said opening and having a mouth formed therein for the admission of air, an operating arm consisting of a portion lying outside of the housing, a portion formed at substantially right angles thereto lying inside of the housing and connected to said cover, and guide members attached to one end of said cover and operating in guideways secured to the side walls of the housing, substantially as described.

3. In a device of the class described, the combination of a car body having a downwardly tapered ventilating opening formed in the roof thereof, a cover for said opening having a corresponding downwardly extending taper, a housing surrounding said opening and having a mouth formed therein for the admission of air, an operating arm consisting of a portion lying outside of the housing, a portion formed at substantially right angles thereto lying inside of the housing and connected to said cover, guide members attached to one end of said cover and operating in guideways secured to the

side walls of the housing, and horizontally extending slots formed in the side walls of the housing to permit of horizontal movement of the operating arm in the raising and lowering of the cover, substantially as described.

4. In a device of the class described, the combination of a car body having a downwardly tapered opening formed in the roof thereof, said opening serving to permit of the entrance of either air or ice into the interior of the car body, a cover for said opening having a corresponding downwardly extending taper, a housing surrounding said opening and having a mouth formed therein for the admission of air, an operating arm entered through said housing and attached to said cover, for raising and lowering said cover to open and close the opening, and a trackway upon which said housing travels when the removal of the housing is necessary in order to permit ice to be entered through the opening into the refrigerating chamber, substantially as described.

5. In a device of the class described, the combination of a car body having a downwardly tapered opening formed in the roof thereof, said opening serving to permit of the entrance of either air or ice into the interior of the car body, a cover for said opening having a corresponding downwardly extending taper, a housing surrounding said opening and having a mouth formed therein for the admission of air, an operating arm entered through said housing and attached to said cover, for raising and lowering said cover to open and close the opening, a trackway upon which said housing travels when the removal of the housing is necessary in order to permit ice to be entered through the opening into the refrigerating chamber, the lower end of the side walls of said housing having flanges which rest upon said trackway and support the housing thereon, and flanged members secured to the inside face of the side walls of the housing and contacting the trackway, the flanges and the flanged members gripping the rail of the trackway and holding the housing firmly in place thereon, substantially as described.

6. In a device of the class described, the combination of a car body having a downwardly tapered ventilating opening formed in the roof thereof, a cover for said opening having a corresponding downwardly extending taper, a housing surrounding said opening and having a mouth formed therein for the admission of air, an operating arm consisting of a portion lying outside of the housing, a portion formed at substantially right angles thereto lying inside of the housing and connected to said cover, and a trackway upon which said housing travels when the removal of said housing is necessary to permit ice to be entered through the opening

into the refrigerating chamber, substantially as described.

7. In a device of the class described, the combination of a car body having a downwardly tapered ventilating opening formed in the roof thereof, a cover for said opening having a corresponding downwardly extending taper, a housing surrounding said opening and having a mouth formed therein for the admission of air, an operating arm consisting of a portion lying outside of the housing, a portion formed at substantially right angles thereto lying inside of the housing and connected to said cover, guide members attached to one end of said cover and operating in guideways secured to the side walls of the housing, and a trackway upon which said housing travels when the removal of said housing is necessary to permit the ice to be entered through the opening into the refrigerating chamber, substantially as described.

8. In a device of the class described, the combination of a car body having a downwardly tapered ventilating opening formed

in the roof thereof, a cover for said opening having a corresponding downwardly extending taper, a housing surrounding said opening and having a mouth formed therein for the admission of air, an operating arm consisting of a portion lying outside of the housing, a portion formed at substantially right angles thereto lying inside of the housing and connected to said cover, guide members attached to one end of said cover and operating in guideways secured to the side walls of the housing, horizontally extending slots formed in the side walls of the housing to permit of horizontal movement of the operating arm in the raising and lowering of the cover, and a trackway upon which said housing travels when the removal of said housing is necessary in order to permit ice to be entered through the opening into the refrigerating chamber, substantially as described.

DANIEL C. MULVIHILL.

Witnesses:

P. B. JAMES,

F. W. CRAMER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."