

No. 650,087.

Patented May 22, 1900.

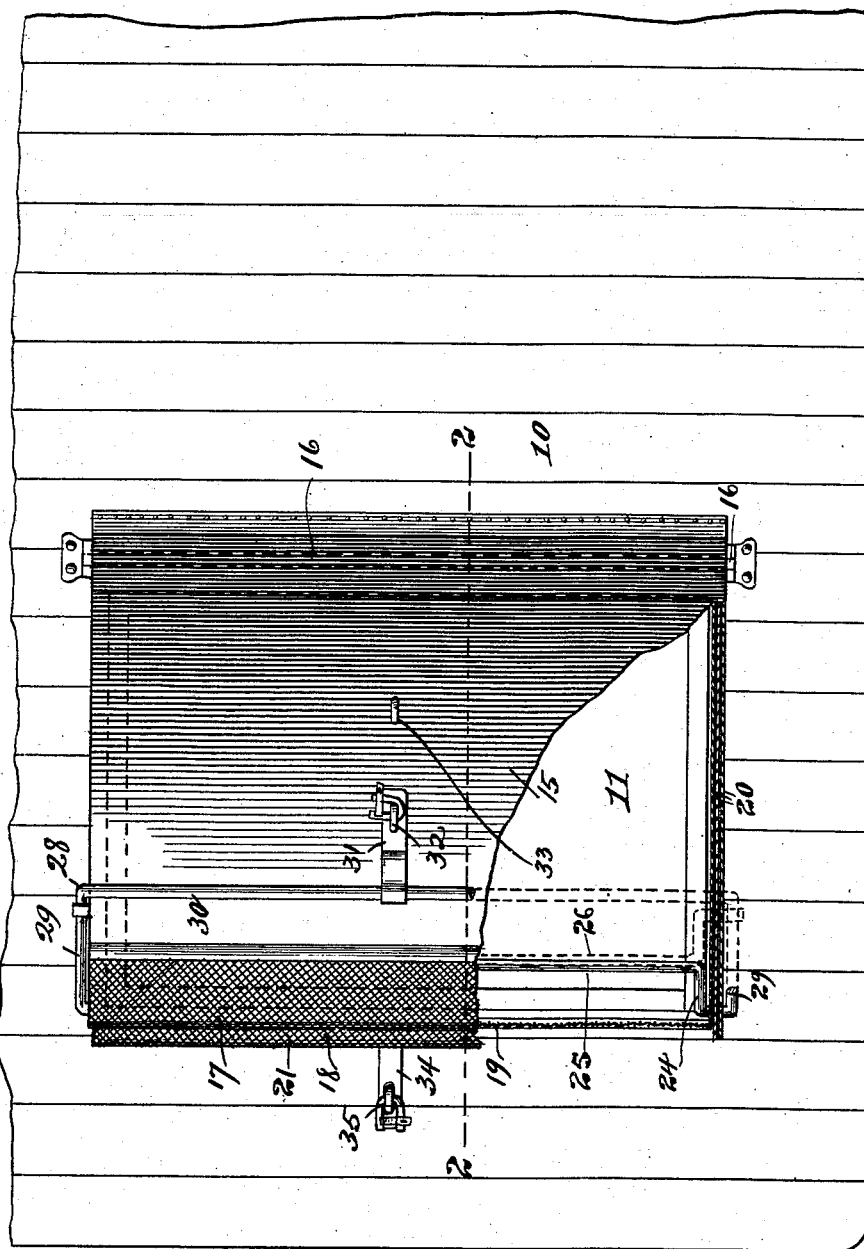
E. C. DODGE.
VENTILATOR FOR REFRIGERATOR CARS.

(Application filed Oct. 18, 1897.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



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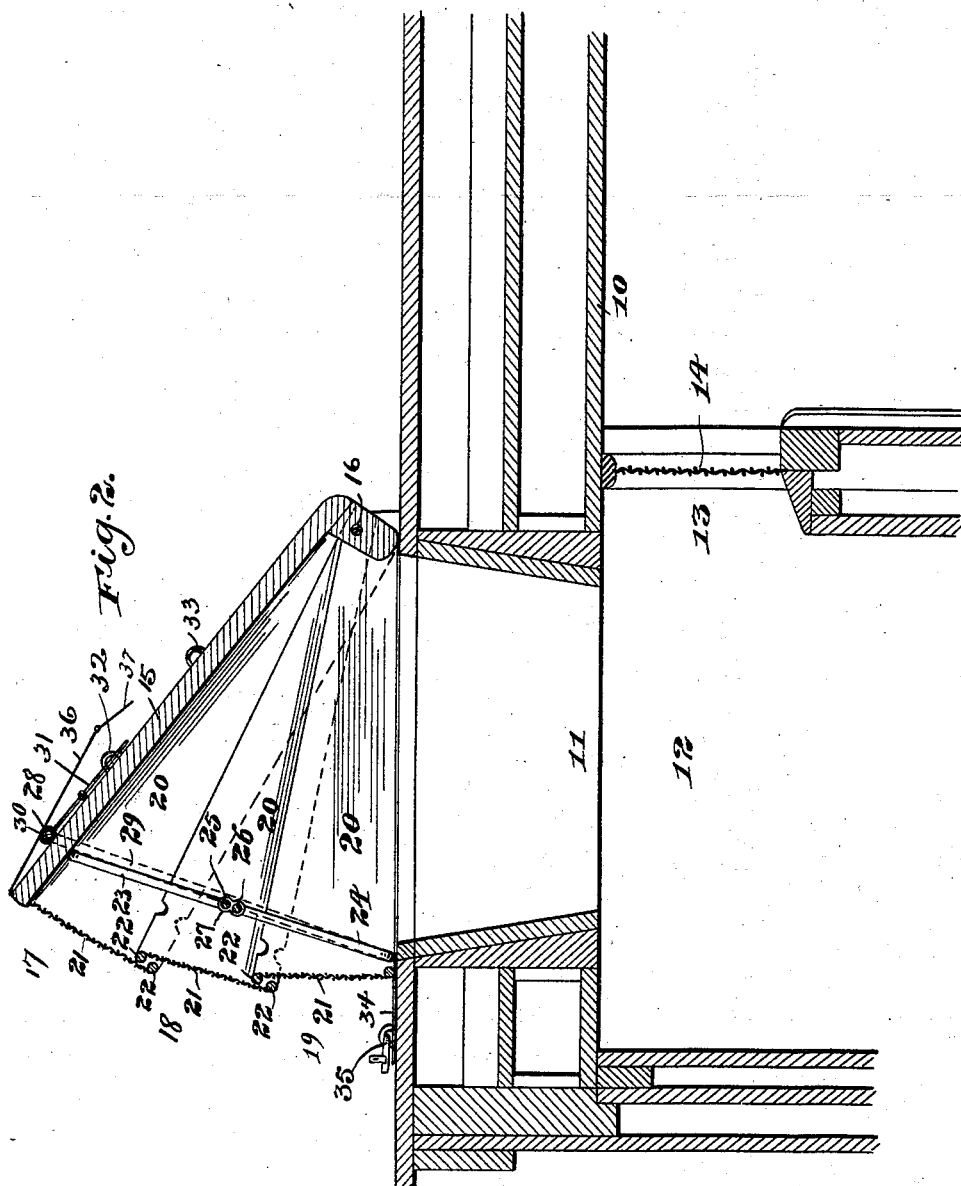
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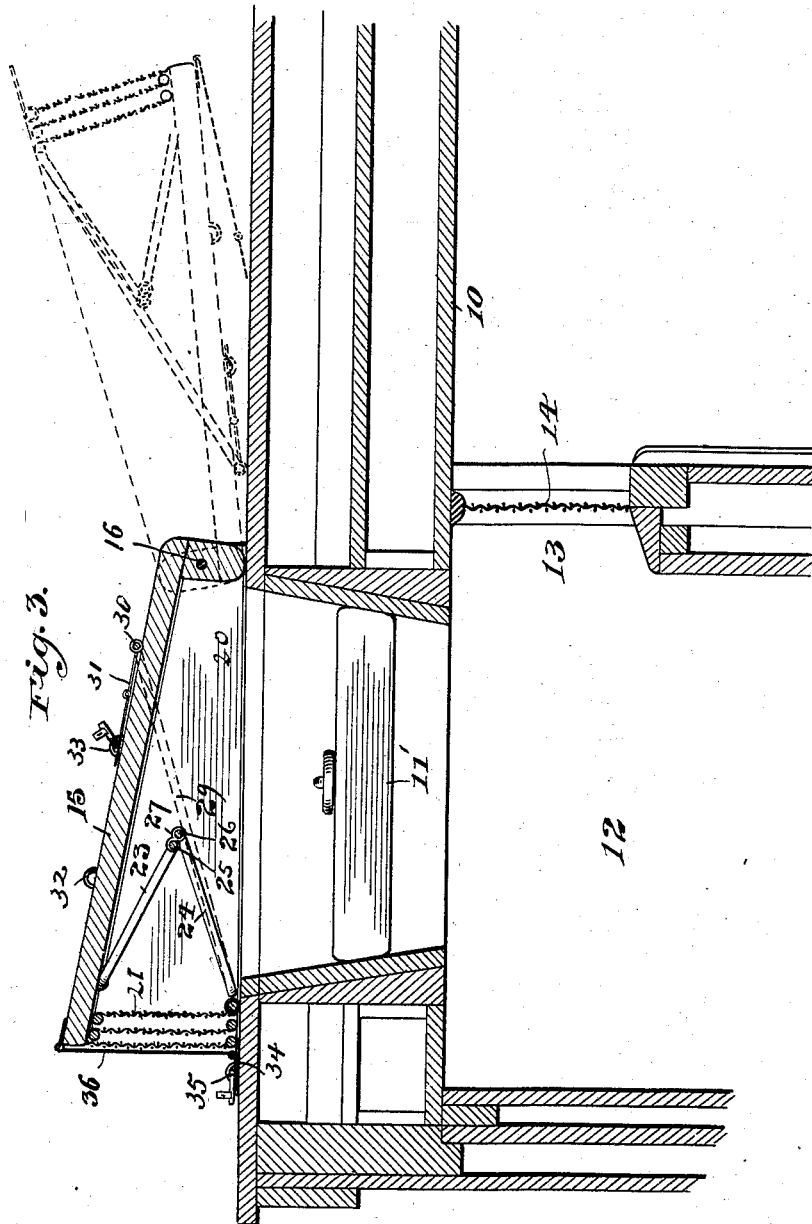
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UNITED STATES PATENT OFFICE.

EDGAR C. DODGE, OF CHICAGO, ILLINOIS, ASSIGNOR TO ARMOUR & CO.,
OF SAME PLACE.

VENTILATOR FOR REFRIGERATOR-CARS.

SPECIFICATION forming part of Letters Patent No. 650,087, dated May 22, 1900.

Application filed October 18, 1897. Serial No. 655,518. (No model.)

To all whom it may concern:

Be it known that I, EDGAR C. DODGE, of 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.

This invention relates to ventilators for refrigerator-cars, and more particularly to that class of ventilators employed for introducing air into the interior of said cars through the ice-holes in the roof of a refrigerator-car, and has for its object to provide a device of this character which shall be simple in construction, effective in operation, and readily manipulated in the operation of opening and closing the same; and to these ends my invention consists in certain novel features, which will be hereinafter described and then particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a portion of a car-roof having my improvement applied thereto, the ventilator being shown open and a portion of the same being broken away. Fig. 2 is a vertical sectional view of the same taken on the line 22 of Fig. 1, showing the ventilator opened; and Fig. 3 is a similar view showing the ventilator closed.

In the said drawings, 10 represents the car-roof, and 11 the ice-hole in the same communicating with the ice-tank 12, said ice-tank communicating with the interior of the car by means of an opening 13, preferably provided with a screen 14 near the top of the car and having, as usual, a similar opening near the bottom of the car.

The ventilator proper comprises a cover or door 15, hinged upon an axis 16 adjacent to that edge of the ice-hole farthest from the end of the car, and intermediate overlapping sections pivoted on the same axis. I have shown in the present instance three such sections 17, 18, and 19, although their number may be varied. Each section consists of two side plates 20, preferably inclined, as shown, and hinged at their ends farthest from the end of the car to the same axis 16 as the cover 15. The side plates 20 of each section are united at their other ends by means of a screen 21. The several sections fit or nest within

each other, and in the present instance I have shown the lowermost section 19 as fitting within the middle section 18 and this latter as in turn fitting within the uppermost section 17. The sections are caused to engage when at the limit of their expansion by means of interlocking flanges 22, shown in the present instance as located on the front edges of the screen portions thereof, and the uppermost section 17 is preferably secured or permanently attached to the cover 15.

In order to open or close, or, in other words, to expand or contract, the ventilator, I employ toggle-levers connecting the upper and lower sections and adapted to be operated from the exterior of the ventilator. The form of construction which I prefer for this purpose is that shown in the drawings, in which toggle-levers are arranged in pairs in the interior of the ventilator at each side thereof, the upper lever 23 being pivoted to the upper section 17 of the ventilator, while the lower lever 24 of each pair is pivoted to the lower section 19 of the ventilator. The two levers 23 are connected by a transverse rod 25, which may be made in one piece with said levers, as in the construction shown, while the lower levers 24 are similarly connected by a transverse rod 26, the two rods 25 and 26 being pivotally connected, as shown at 27, to form the knuckle-joint of the toggle. The toggle connections are operated by a U-shaped bail 28, located externally of the ventilator and composed of arms 29, connected to the lower levers 24, and a cross-piece 30. I may, as in the construction shown, form the arms 29 and cross-piece 30 in a single piece with the levers 24 and their cross-rod 26. The bail 28 is provided with a slotted hasp 31 to engage with either one of two staples 32 or 33 on the door or cover 15, so as to lock said bail and the ventilator in either its opened or closed position, or other suitable means for so locking the parts may be employed. The lowermost section 19 of the ventilator is provided with a similar slotted hasp 34 to engage and be locked to a staple 35, fixed in the car-roof, so that the ventilator may be locked in position over the ice-hole to prevent access to the interior of the car either while expanded, as shown in Fig. 2, or

when contracted, as shown in full lines in Fig. 3. A flap 36, hinged to the free edge of the cover 15, or, if desired, to the roof, serves to entirely close the ventilator when desired, the free end of said flap being also provided with a slotted hasp 37, adapted to engage the staple 35 when in position to close the ventilator.

The device thus constructed operates in the following manner: When it is desired to ventilate the interior of the car, a minimum amount of ventilation may be obtained with the ventilator in the position shown in full lines in Fig. 3, with the flap 36 raised, the air entering through the screens 21 and passing through the ice-hole 11 into the interior of the car in comparatively small quantities. When, however, it is desired to increase the amount of air introduced into the interior of the car, the bail 28 is grasped by its transverse portion 30 and swung upward toward the end of the car, whereupon the toggle-levers 23 and 24 are operated to expand the ventilator-sections in an obvious manner until they assume the position shown in Fig. 2, when the cross-rod of the bail will have come into contact with the top of the cover, thus limiting the motion of these parts, while the toggle-levers are in line and serve to support the cover and the sections of the ventilator in the position shown. The air will now pass through the screens 21 and be guided by the cover 15 and side pieces 20 to the ice-hole and will enter the interior of the car in greater volume. A movement of the bail in the opposite or reverse direction will again lower the ventilator into the position shown in full lines in Fig. 3, when the bail again comes in contact with the top of the cover, thereby limiting the motion of the parts in the opposite direction. The bail may, as hereinbefore set forth, be locked in either of its extreme positions, and by its use the sections may be readily and quickly adjusted to the desired position. It will be seen, moreover, that the side pieces of the sections are located between the toggle-levers on the inside and the arms 29 of the bail on the outside, said parts serving as strengthening-braces and guides to strengthen and hold the side pieces in position.

When it is desired to use the car as a refrigerator-car without ventilation, the entire ventilator may be swung back out of the way into the position shown in dotted lines in Fig. 3 to permit access to the ice-hole for the purpose of charging the ice-tank, and in this case a suitable plug or closure 11', such as is shown in Fig. 3, will be employed to close

the ice-hole after the tank has been loaded with ice.

I do not wish to be understood as limiting myself to the precise details of construction hereinbefore described and shown in the drawings, as it is obvious that various features of the construction shown may be modified without departing from the principle of my invention.

I claim—

1. In a ventilator for refrigerator-cars, the combination, with a car-roof having an ice-hole, of a ventilator comprising a door or cover pivoted on an axis adjacent to one edge of the ice-hole and a plurality of overlapping sections pivoted on the same axis, means for limiting the expansion of the sections, toggle-levers connecting the upper and lower sections, and means for operating the said toggle-levers from the exterior, substantially as described.

2. In a ventilator for refrigerator-cars, the combination, with a car-roof having an ice-hole, of a ventilator comprising a door or cover and overlapping sections pivoted on a common axis adjacent to the ice-hole, said sections comprising side pieces and end screen-sections, toggle-levers connecting the upper and lower sections and located immediately adjacent to the side pieces within the ventilator, and an external bail connected to said toggle-levers for operating the same and having its arms located immediately adjacent to the side pieces on the outer sides thereof, substantially as described.

3. In a ventilator for refrigerator-cars, the combination, with a car-roof having an ice-hole, of a ventilator comprising a door or cover and overlapping sections pivoted on a common axis, toggle-levers connecting the upper and lower sections, and an external bail connected to the toggle-levers to operate the same and having a transverse portion adapted to contact with the door or cover to limit the motion of the parts, substantially as described.

4. In a ventilator for refrigerator-cars, the combination, with a car-roof having an ice-hole, of a ventilator comprising a door or cover and overlapping sections pivoted to a common axis, toggle-levers for expanding and contracting the ventilator, an external bail for operating the toggles, and means for locking said bail, substantially as described.

EDGAR C. DODGE.

Witnesses:

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IRVINE MILLER.