

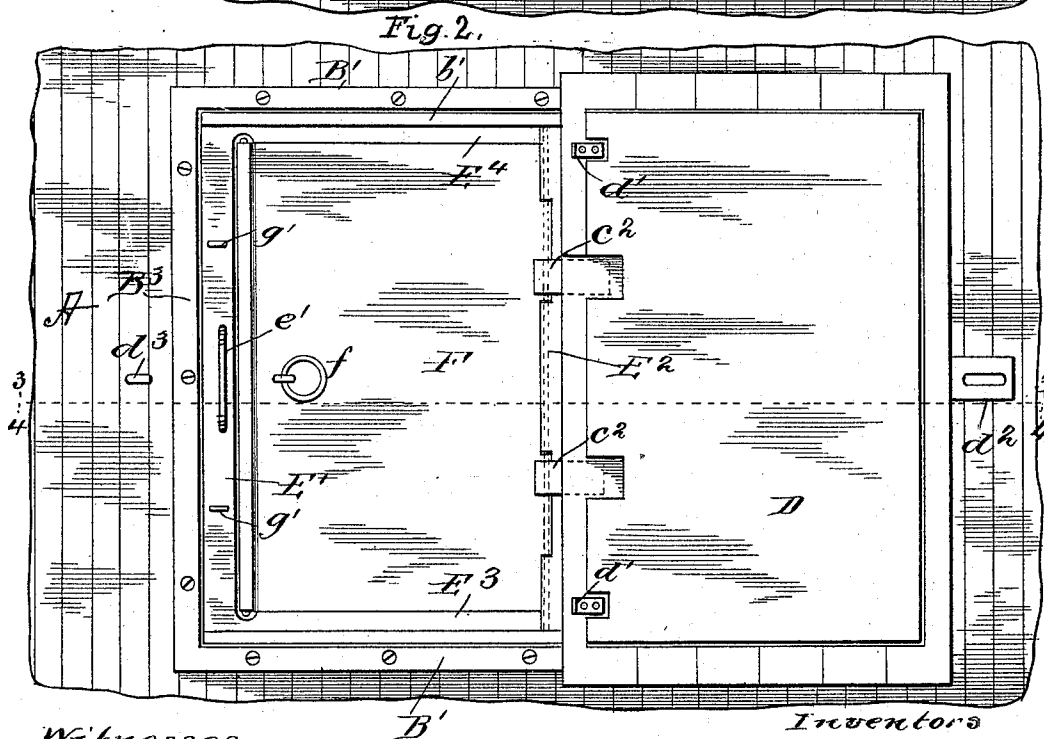
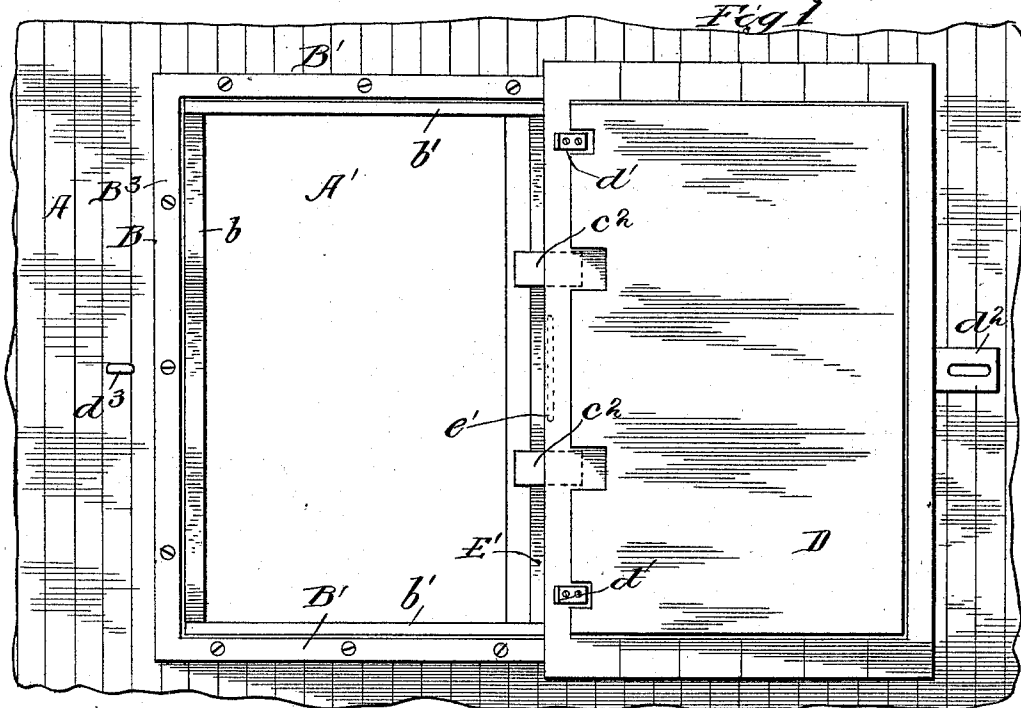
(No Model.)

2 Sheets—Sheet 1.

J. NORLING & C. E. JOHNSON.
VENTILATOR FOR REFRIGERATOR CARS.

No. 585,779.

Patented July 6, 1897.



Witnesses
W. C. Cooley
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Inventors
Jacob Norling
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By Coburn & Strong Attys

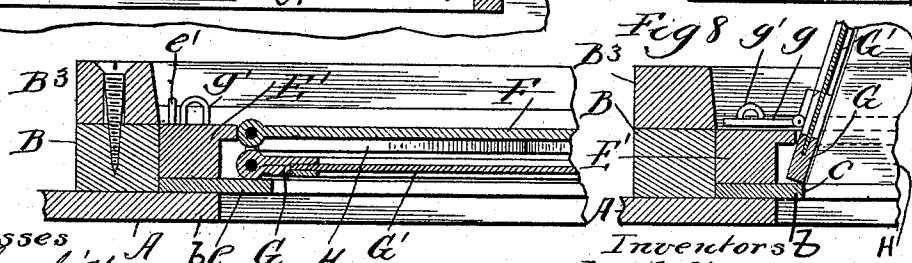
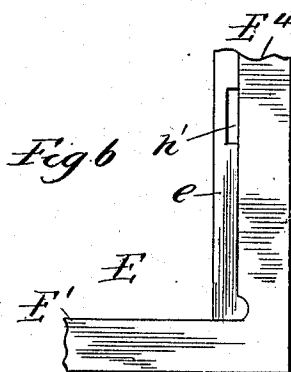
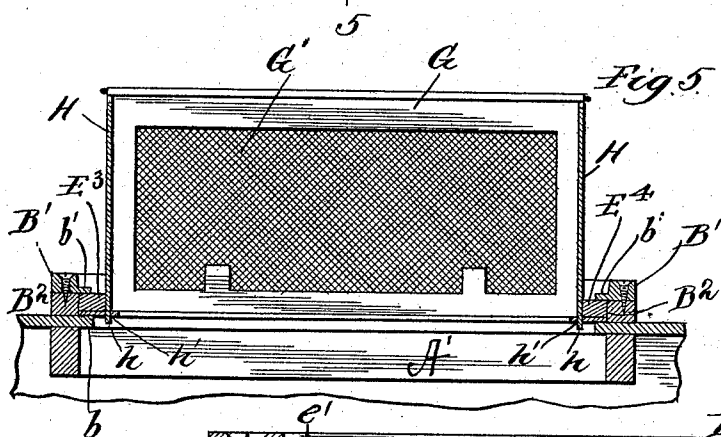
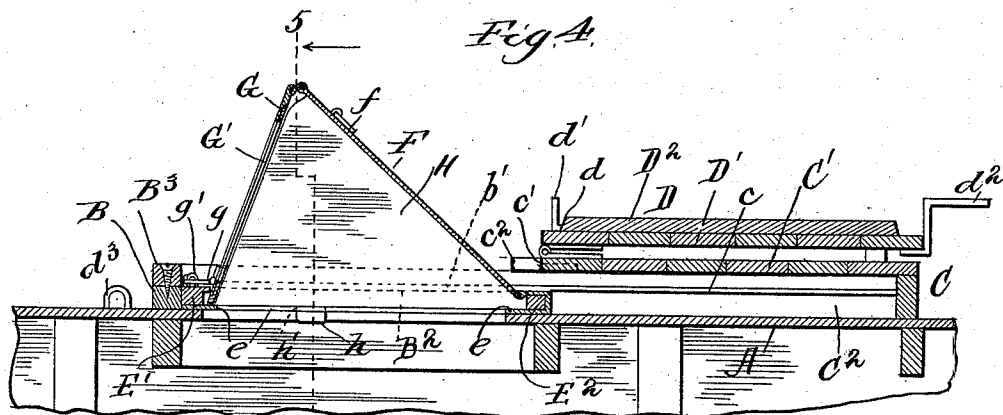
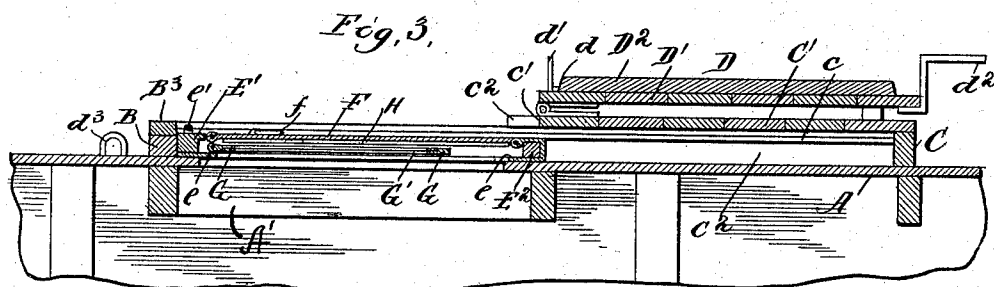
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UNITED STATES PATENT OFFICE.

JACOB NORLING AND CHARLES E. JOHNSON, OF CHICAGO, ILLINOIS,
ASSIGNORS TO GEORGE B. ROBBINS, OF HINSDALE, ILLINOIS.

VENTILATOR FOR REFRIGERATOR-CARS.

SPECIFICATION forming part of Letters Patent No. 585,779, dated July 6, 1897.

Application filed August 3, 1896. Serial No. 601,440. (No model.)

To all whom it may concern:

Be it known that we, JACOB NORLING and CHARLES E. JOHNSON, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Car-Ventilators, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

10 Figure 1 is a plan view of a portion of a car to which our ventilator is applied, showing the lid thrown open, but the ventilator back from the ice-aperture. Fig. 2 is a similar view with the ventilator over the aperture, but not raised. Fig. 3 is a vertical longitudinal section on the line 3 3 of Fig. 2. Fig. 4 is a similar section showing the ventilator raised. Fig. 5 is a vertical cross-section on the line 5 5 of Fig. 4 in the direction of the arrow. 15 Fig. 6 is a detail plan view of a corner of the ice-aperture and ventilator-frame. Fig. 7 is an enlarged detail view of a portion of Fig. 3. Fig. 8 is an enlarged detail view of a portion of Fig. 4.

25 Our invention relates to ventilators particularly adapted for use in combined refrigerator and ventilated cars, and has for its object to provide a structure less liable to injury and wear and more efficient in operation than the ventilators of this general type heretofore used.

Referring to the drawings by letter, A represents a portion of a car-roof which is provided with ice-apertures A' in the usual way. 35 Surrounding each such aperture, upon three sides thereof, we construct a curb B, which is provided on its inner side with the horizontal rib *b*. Upon the two opposite sides of the curb B are secured strips B', provided on their inner sides with horizontal ribs *b'*, corresponding to the ribs *b*, but located above the same. Between the two sets of ribs *b* and *b'* there are thus formed the horizontal guides B², adapted to receive the ventilator-frame, later described. Upon the front of the curb B is secured a strip B³, corresponding to the strips B', but without any rib *b'*. 45

Upon the car-roof, immediately in rear of the ice-aperture, upon that side thereof not inclosed by the curb B, we construct a hood or box C, of approximately the same area as

that of the ice-aperture, open upon the side adjacent to the aperture. Upon the vertical sides of the hood C, part way between the roof C' of the hood and the roof A of the car, 55 which forms the bottom of the hood, are secured horizontal strips *c* in prolongation of the strips *b'*. There are thus formed between the said strips and the roof A of the car guides C² in continuation of the guides B². 60 Upon the forward edge *c'* of the roof C' of the hood are provided two forwardly-projecting lugs *c''*, which extend outward so as to nearly come in contact with the cover F when the latter is in its elevated position, for the purpose hereinafter described. To the said edge 65 *c'* of the roof of the hood is hinged a lid D, adapted to swing down over and close the ice-aperture. The lid D comprises the lid proper, D', and the reinforced portion D², secured to the bottom thereof, provided with the beveled edges *d*. This reinforcement is of the ordinary construction and serves for heat-insulating purposes. 70

Adjacent to the hinged edge of the lid D, 75 secured to the under side thereof, are provided the lugs or short arms *d'*, for an object later described. The free edge of the lid is provided with a hasp *d''*, adapted, when the lid is closed, to be locked upon the staple *d'''*, 80 secured to the roof of the car in front of the ice-aperture.

The ventilator itself comprises a horizontal frame, a cover hinged thereto, a screen hinged to the free edge of the cover, and side wings 85 hinged to the sides of the said cover. The frame E is rectangular and consists of front and rear pieces E' and E² and side pieces E³ and E⁴, all provided at their lower inner edge with an inwardly-projecting rib or flange *e*. 90 The sides of the frame, E³ and E⁴, fit in the guides B² and C², so that the frame is adapted to be slid backward and forward from its position over the ice-aperture to its position in the hood. Upon the frame part E' is secured 95 a handle *e'* to assist in sliding the frame backward and forward.

To the rear frame-piece E² is hinged a cover F, which when swung down into a horizontal position is adapted to rest upon the ribs *e*. 100 This cover is provided with a ring *f* to assist in raising the same. To the forward or free

edge of the cover F is hinged a screen-frame G, provided with a screen G'. The lower edge of the screen-frame is provided with a hasp *g*, adapted to be locked to a staple *g'*, mounted upon the forward edge E' of the ventilator-frame. To the sides of the cover F are hinged the triangular side pieces H H. Each of the said side pieces is provided on its lower edge with a lug *h*, adapted to fit, when the ventilator is raised into operative position, in the notch *h'*, formed in the rib *e* of the frame sides E³ E⁴ aforesaid.

To refer now to the operation of the parts the construction of which is hereinabove described, when the car is to be used as a ventilated car the lid D is thrown back and the ventilator is drawn forward into its position over the ice-aperture. The cover F is now raised. The screen-frame, screen, and side wings are swung down, the latter having the lugs *h* fitting in the apertures *h'* of the ventilator-frame, and the former being locked by the hasp and staple *g* and *g'*. Thus the ventilator is locked in its raised position and cannot be lowered until unlocked. In such position it can obviously not be removed or shoved back from the ice-aperture, which is thus secured against intrusion. To prevent more completely the sliding backward of the whole ventilator, the lugs *c*² are formed as above described and are adapted to bear against the lower or rear portion of the cover F, should the latter be pushed back when the same is raised.

When the car is to be used as a refrigerator-car, the ventilator is unlocked, the side wings H and the screen-frame G are swung up under the cover F, which is then lowered into horizontal position, as shown in Fig. 3, and the entire ventilator is slid back into the hood or housing C. Thus it is entirely removed from the ice-aperture and secured from any injury during the icing of the car. The lid D is swung down over the ice-aperture and locked in such position by the hasp and staple *d*² and *d*³. The short arms or lugs *d'* prevent the ventilator sliding forward over the ice-aperture while the lid is thus closed and hold the ventilator securely in its housed position.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a car provided with an aperture A', a lid D, adapted to close the same, a hood formed upon the car at one side of the said aperture, a movable frame adapted to slide from a position in the hood to a position over the aperture, a cover hinged to said frame, a screen hinged to the free edge of the cover, and triangular side wings hinged to the sides of the cover, said wings and screen being adapted to support the cover in an inclined position when the ventilator is in use, and to be folded down upon the frame and the whole slid back into the hood when not in use, substantially as described.

2. In a car provided with an ice-aperture A', a lid D adapted to cover the said aperture; a hood C formed at one side thereof; a curb B surrounding the remaining sides of the aperture and provided with the guides B²; a ventilator, consisting of a frame E adapted to slide on the guides B² and backward into the hood C, of a cover hinged at one edge to the frame, of a screen hinged to the free edge of the cover, and of triangular side wings hinged to the sides of the cover; the said screen and side wings being adapted to hold the cover in an inclined position, or to be folded upon the same and the whole laid flat upon the frame when the ventilator is out of use so as to be moved back into the hood; and means for locking the free edge of the screen to the edge of the ventilator-frame.

3. In a car provided with an ice-aperture A', a lid D adapted to cover the said aperture; a hood C formed at one side thereof; a curb B surrounding the remaining sides of the aperture and provided with the guides B²; a ventilator consisting of a frame E adapted to slide on the guides B², and backward into the hood C, of a cover hinged at one edge to the frame, of a screen hinged to the free edge of the cover, and of triangular side wings hinged to the sides of the cover; the said screen and side wings being adapted to hold the cover in an inclined position, or to be folded upon the same when the ventilator is out of use; lugs *h* on the lower edge of the wings adapted to secure the lower edges of the latter to the ventilator-frame; and means for locking the free edge of the screen to the edge of the ventilator-frame.

4. In a combined ventilator and refrigerator car provided with ice-apertures A', the curb B inclosing three sides of each aperture, and provided with guides B² on the sides thereof; the hood C constructed adjacent to the remaining side of the said ice-aperture, and open upon the side adjacent thereto; the guides C² upon the inner sides of the hood formed in continuation of the guides B²; the lugs *c*² attached to the edge of the roof of the hood; the lid D adapted to close the ice-aperture hinged to the said edge of the roof of the hood and provided with the short arms *d*; a ventilator consisting of a slidable frame E provided with the rib *e* having apertures *h'*; a cover F hinged to the ventilator-frame; a screen hinged to the free edge of the cover F adapted to support the cover in an inclined position; means for locking the lower edge of the screen, when the ventilator is raised, to the ventilator-frame, and the side wings H hinged to the sides of the cover F, and provided on their lower edges with the lugs *h* adapted to enter the said apertures *h'*, to secure them to the ventilator-frame E; the said screen and side wings being adapted to fold under the cover F when the same is lowered into a horizontal position, substantially as described.

5. In a car provided with an aperture A', a lid D, adapted to close the same, a hood

formed at one side of the said aperture, lugs projecting outward from the front edge of the said hood, a slidable frame adapted to slide back into the hood and out over the aperture, 5 a cover hinged to said frame and movable with it, a screen hinged to the free edge of the cover, and side wings hinged to the sides of the cover, the wings and screen being adapted to support the cover in an inclined 10 position when the ventilator is in use, the said projecting lugs acting as stops to prevent the backward movement of the cover when the latter is in its inclined position, substantially as described.

15 6. In a car provided with an aperture A', a hood at one side of the aperture, a slidable frame adapted to slide back into the hood,

and out over the aperture, a cover hinged to the frame and movable with it, a ventilator-screen and side wings hinged to the cover, 20 and arranged to be folded down upon the frame, a lid D, hinged to the side edge of the hood, and downwardly-extending lugs or arms secured to the hinged edge of the lid and adapted when the latter is closed down over 25 the aperture to prevent the ventilator-frame from sliding forward, substantially as described.

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