E. POSSON.

VENTILATOR FOR DINING CAR KITCHENS.

APPLICATION FILED JAN. 25, 1912.

1,097,671.

Patented May 26, 1914.

3 SHEETS—SHEET 1.

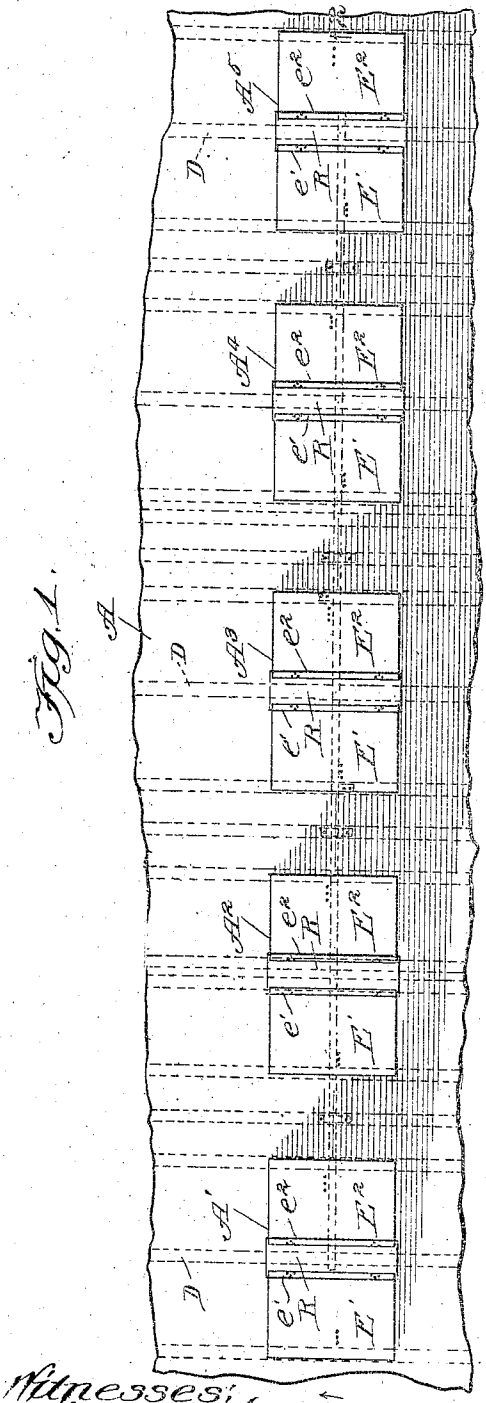


Fig. 1.

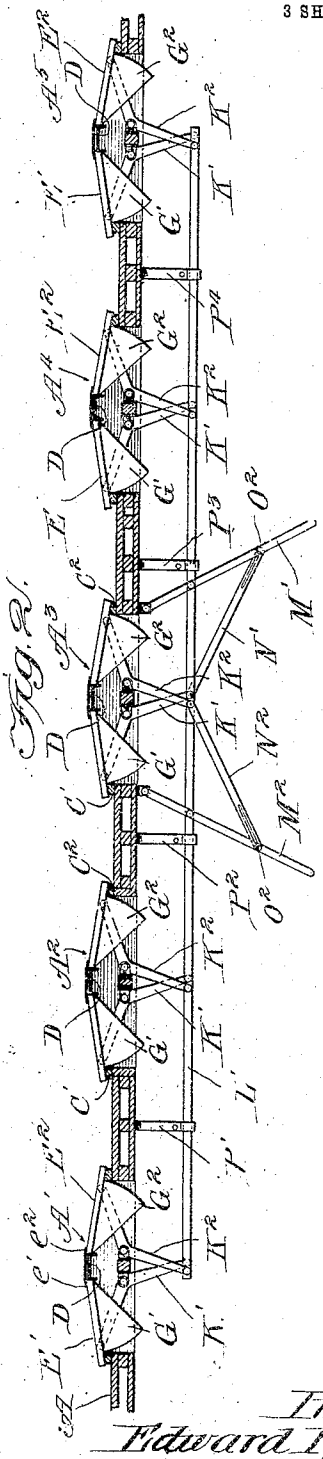


Fig. 2.

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3 SHEETS—SHEET 2.

Fig. 3.

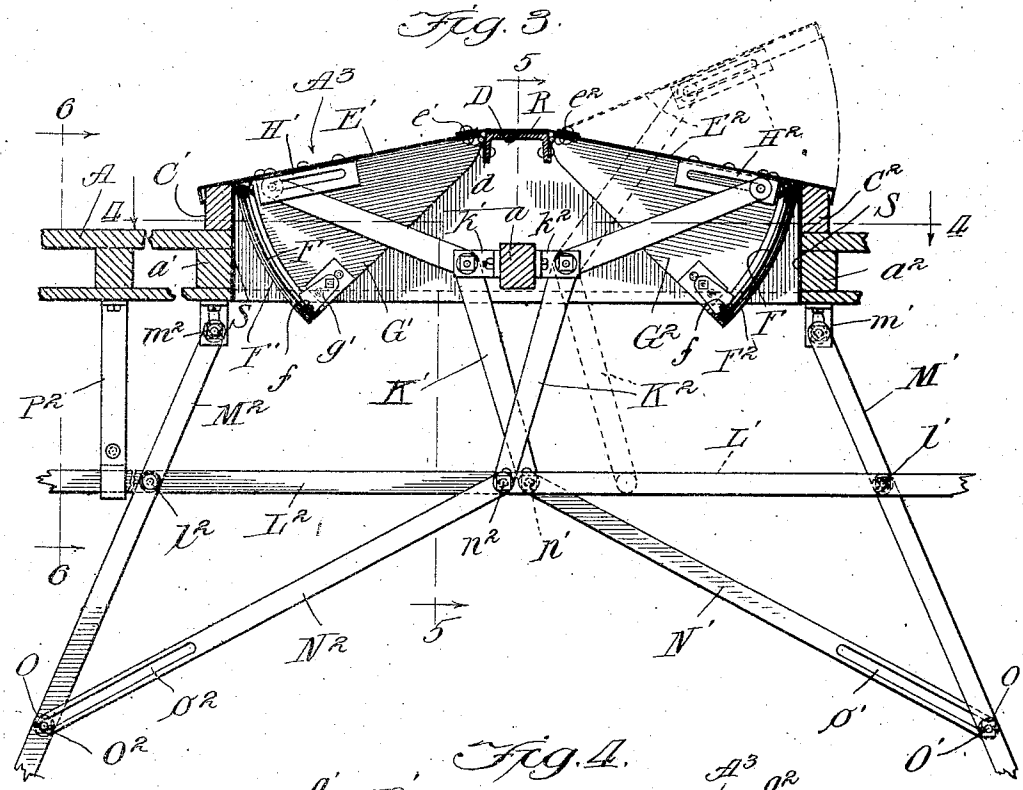
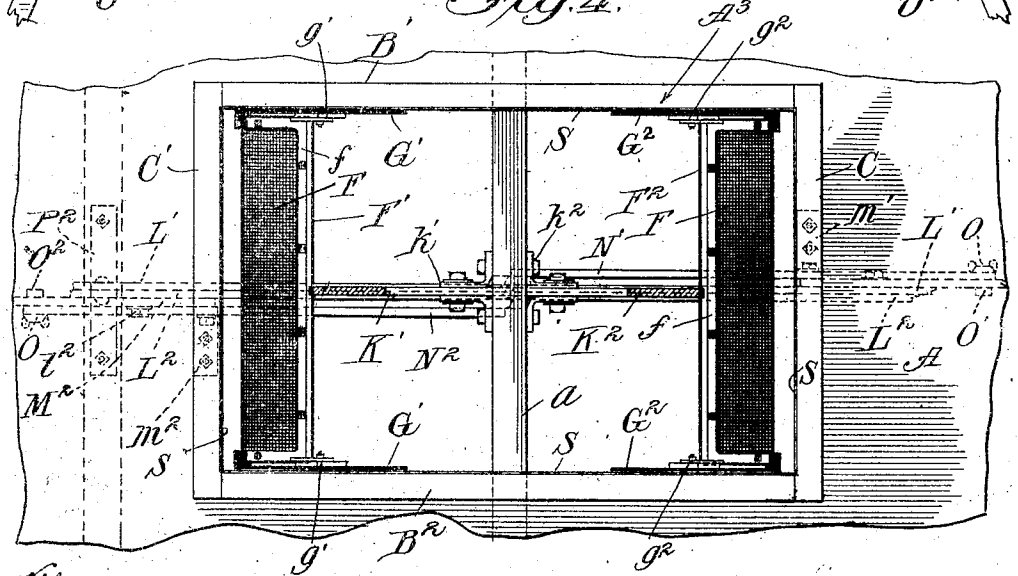


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

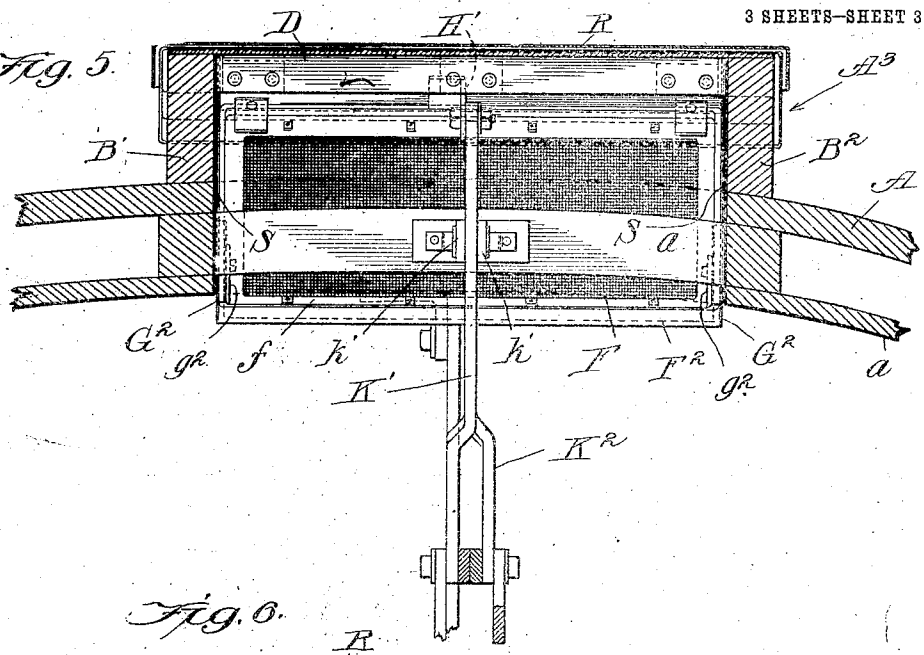
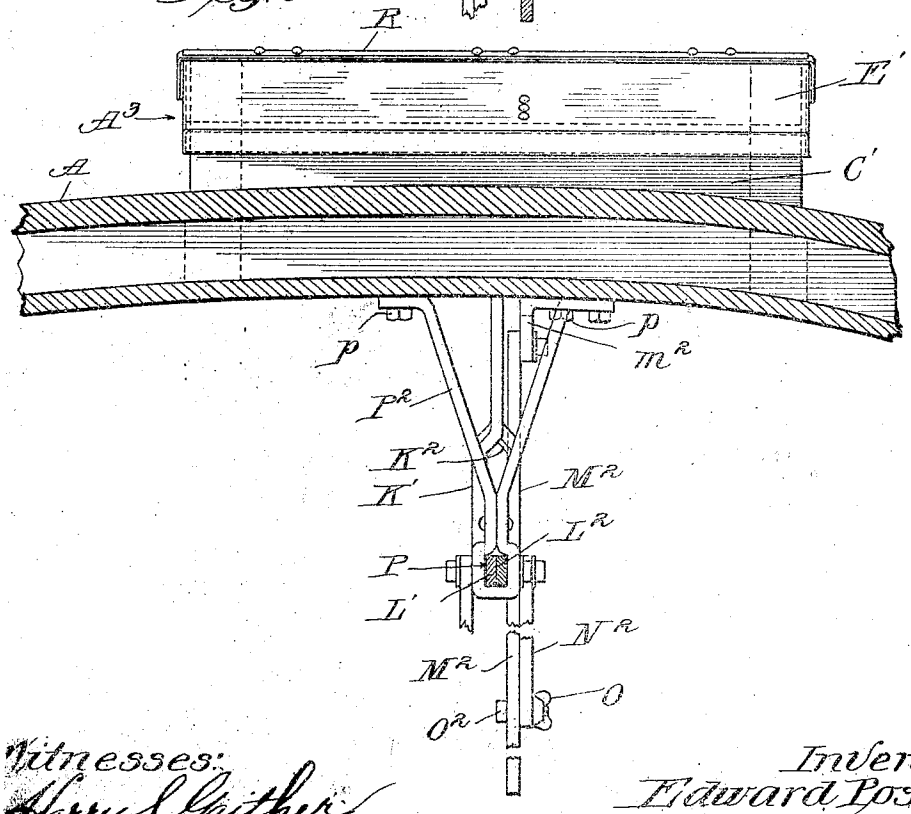


Fig. 6.



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UNITED STATES PATENT OFFICE.

EDWARD POSSON, OF CHICAGO, ILLINOIS.

VENTILATOR FOR DINING-CAR KITCHENS.

1,097,671. Specification of Letters Patent. Patented May 26, 1914.

Application filed January 25, 1912. Serial No. 673,376.

To all whom it may concern:

Be it known that I, EDWARD POSSON, 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 Dining-Car Kitchens, of which the following is a specification.

My invention relates in general to ventilators, and more particularly to a ventilator for the kitchens of dining cars.

Inasmuch as the space devoted to the kitchen in dining cars is necessarily small and in close proximity to the dining room, it is essential that an efficient ventilating system be provided in order to quickly carry off the cooking odors and prevent them from passing into the dining room. It is also desirable that the ventilating system should be reversible to accord with the direction of travel of the train, and should be adjustable to regulate the ventilating openings according to weather conditions and the conditions in the kitchen.

My invention has for its object the provision of a ventilating system, particularly adapted for the kitchens of dining cars, in which ventilating openings may be directed toward either end of the car, in which the openings may be readily regulated in size, and in which a series of ventilating openings may be simultaneously opened, closed, or regulated.

A further object of my invention is to provide a ventilating system for cars which will be simple in construction, efficient in use and convenient in operation.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated as embodied in a convenient and practical form, and in which—

Figure 1 is a plan view of the central longitudinal portion of the roof for a dining car over the kitchen; Fig. 2, a central vertical section on line 2 2, Fig. 1; Fig. 3, an enlarged vertical longitudinal section through one of the pairs of ventilators; Fig. 4, a sectional view on line 4 4, Fig. 3; Fig. 5, a vertical transverse section on line 5 5, Fig. 3; and Fig. 6, a transverse vertical section on line 6 6, Fig. 3.

The same reference characters will be used to designate the same parts in the several figures of the drawings.

Reference character A designates a portion of the roof over the kitchen in a dining car.

A′, A^2, A^3, A^4 and A^5 designate pairs of ventilators arranged in tandem longitudinally of the car and controlling openings through the car roof. Each of the openings controlled by a pair of ventilators is surrounded by longitudinal members B′, B^2 and transverse members C′, C^2 forming a frame surrounding the opening, the upper surface of such frame inclining downwardly from the transverse center thereof, as clearly shown in Figs. 2 and 3. Extending transversely across each opening is a beam D which may conveniently be of channel form with the flanges depending. The ends of the beam are supported upon the longitudinal members B′, B^2 of the frame around the opening, in any suitable manner, as by means of screws extending through the ends of the beam into the underlying portions of the members B′, B^2 of the frame.

Pivotally connected to the opposite sides of each of the beams D by suitable hinges e' and e^2 are covers E′, E^2 made of any suitable material, such, for instance, as galvanized iron. The edges of each of the covers E′, E^2 are bent downwardly to form flanges which closely surround the outer surfaces of the underlying portion of the frame around the opening. Depending from the covers E′ and E^2 are frames F′ and F^2, respectively, which are secured at their upper ends by any suitable means to the under surfaces of the covers within the opening and adjacent the transverse members C′ and C^2 of the frame around the same. The frames F′ and F^2 are curved, the radius of such curve being the pivotal connection of the corresponding cover with the beam D, so that when the covers are oscillated about their pivotal connections with the beam the frames F and F^2 will freely pass the inner edges of the transverse members C′ and C^2 of the frame around the opening.

Secured within each of the frames F′ and F^2 is a screen F having a surrounding binding strip of metal f which is received within and secured to the corresponding frame F′ or F, which are preferably formed angular in cross section so as to impart strength thereto and also so as to form a suitable seat for the inclosed screen.

Depending from the cover E′ are two side

shields G′, G′, made of suitable material, such as galvanized iron, which lie close to the longitudinal inner surfaces of the frame around the opening. These shields are sector shaped and extend from the pivotal connection of the cover E′ to the sides of the frame F′. Any suitable means may be used for securing the upper edges of the shields to the under surface of the cover E′ and for securing the curved outer edges of the shields to the side portions of the frame F′. g', for instance, indicates an angle bracket for rigidly securing the lower edges of each of the shields to the corresponding lower corner of the angular frame F′. Similar shields G², G² depend from the cover E² and are secured to the side portions of the curved frame F².

Secured beneath the cover E′ at substantially the longitudinal center thereof is a slotted plate H′ which is engaged by and guides the upper end of a bell crank lever K′, any suitable connection being provided for slidingly connecting the end of the bell crank lever with the slotted plate. The bell crank lever is pivoted upon a bracket k' secured to the carline a extending transversely across the ventilating opening beneath the beam D. The lower end of the bell crank lever K is pivotally connected through a slot formed therein with a stud carried by a longitudinally reciprocating bar L′. The ventilator corresponding to the ventilator E′ in each of the bars A′, A², A³, A⁴ and A⁵ is operated by a similar bell crank lever K′, all of which are connected with the same longitudinally reciprocating bar L′. A similar bell crank lever K² is provided for opening and closing the cover E², which engages a slotted plate H² thereon. The bell crank lever K² is fulcrumed upon a bracket k^2 projecting from the opposite side of the carline a from the bracket k'. The lower end of the lever K² is slotted and engages a stud carried by a stud on a longitudinally reciprocating bar L². Each of the covers E² in each of the pairs of ventilators A′, A², A³, A⁴ and A⁵ is provided with an operating bell crank lever K² connected at its lower end with the same longitudinally reciprocating bar L². A bracket m^2 is secured to the inner surface of the car roof at substantially the transverse center of the carline a' which forms a wall of one of the ventilating openings, preferably the center one. Pivotally connected to the bracket m^2 by means of a slot and stud is a lever M² pivotally connected at l^2 with the reciprocating bar L². The lower end of the lever M² serves as a handle by means of which all of the ventilating covers E² of the several pairs may be opened or closed. A lever M′, similar to the lever M², is pivotally connected at its upper end by means of a slot and stud, to a bracket m' depending from the car roof beneath the carline a^2 at the opposite side of the ventilating opening from the carline a'. The lever M′ is pivotally connected at l' to the reciprocating bar L′, whereby an oscillation of the said lever will simultaneously open or close all of the ventilating covers E′ in the several pairs of ventilators.

Pivotally connected at one end to the reciprocating bar L² is a link N². The same stud or bolt n^2 which serves to pivotally connect the lower end of the bell crank lever K² to the bar L² may also serve to pivotally connect the link N² and bar L². The opposite end of the link N² is provided with an elongated slot o^2 which surrounds a bolt O² projecting from the operating lever M². A clamp nut O engages the screw threaded portion of the bolt O² which projects through the slot o^2, whereby the link N² may be securely clamped to the lever M² at any point along the slot o^2. A link N′, similar to the link N², is pivotally connected at one end to the reciprocating bar L′, as by means of the stud or bolt n' which also serves to pivotally connect the slotted lower end of the bell crank lever K′ with the reciprocating bar L′. The opposite end of the link N′ is provided with an elongated slot o' which surrounds a bolt O′ extending through the operating lever M′ and having thereon a clamp nut O, whereby the lever M′ may be locked to the link N′ at any point along the slot o'.

In order that the oppositely reciprocating bars L′, L² may be suitably supported and guided, depending brackets P′, P², P³ and P⁴ are provided each of which is secured at its upper end intermediate of adjacent pairs of ventilators, by any suitable fastening device, as, for instance, bolts, as shown in Fig. 6. Each of the brackets is bent to form a rectangular opening P through which extend the bars L′ and L². Each of the brackets may be conveniently formed of a single strip of bent metal, the center of such strip forming the guide opening for the oppositely reciprocating bars, while the end portions of the strip diverge upwardly and are provided with oppositely projecting lugs through which the supporting bolts p extend.

In order to prevent the ingress of water between the inner edges of the covers E′ and E² and the adjacent edges of the bar D, a sheet R of suitable waterproof material, such, for instance, as canvas or rubber, is placed over the bar D and extends over the adjacent surfaces of the covers E′ and E², as shown in Fig. 3. Any suitable means may be provided for securing the sheet R in position, as for instance, rivets, passing through the same and also through the adjacent underlying portions of the covers E′ and E². As shown in Fig. 5, the sheet R extends transversely entirely across the bar D and depends over the ends thereof. The inner surface of each ventilating opening is pref-

erably covered with a lining S made of any suitable material, as, for instance, ganvanized iron.

The operation of my improved ventilating system is as follows: When all of the pairs of ventilators are in the closed positions shown in Fig. 2 and the train is moving toward the left, it is desirable to preferably open the ventilator cover E^2 in each pair. This is accomplished by loosening the clamp nut O which connects the link N^2 with the hand lever M^2, after which the hand lever is oscillated toward the right, thereby reciprocating the bar L toward the right and oscillating each of the bell crank levers K^2, so that the cover E^2 of each of the pairs of ventilators is oscillated upwardly, as indicated in dotted lines in Fig. 3. The degree to which the ventilator covers E^2 are opened is determined by the extent to which the operating lever N^2 is swung to the right, and when it has been swung to the extent necessary to open the ventilator covers E^2 to the desired extent, the clamp screw O is adjusted to clamp the lever M^2 tightly to the link N^2, thereby locking the lever in its adjusted position and holding the ventilator covers open to the desired extent, depending upon the conditions in the kitchen and the weather conditions. When the car is moving in an opposite direction, namely, toward the right of Fig. 2, all of the ventilator covers E^2 are first closed by unclamping the lever M^2 from the link N^2 so that the lever may be swung toward the left to the position shown in Fig. 2, where it may be securely retained by again clamping the same to the end of the link N^2. The lever M' is then oscillated toward the left, which reciprocates the bar L^2 and oscillates each of the bell crank levers K', so that the ventilator cover E' in each pair of ventilators is opened to the desired extent and retained in such opened position by adjusting the clamp screw O so as to lock the lever M' to the link N'. By reason of the depending flanges around the edges of the several ventilator covers, which overlap the frames around the openings, and by reason of the waterproof sheets R, the ingress of water or cinders is prevented when the ventilator covers are closed, and when they are opened the screens and side shields prevent cinders and dust from passing therethrough into the kitchen while the screens permit the necessary ventilation.

From the foregoing description it will be observed that I have invented an improved ventilating system particularly adapted for the kitchen of dining cars, comprising two series of ventilators, the ventilators in each series being connected for simultaneous operation, and one series or the other being opened or closed according to the direction of movement of the car. It will be further observed that I have invented an improved system of car ventilation which will permit the ingress of dust, cinders, or water, which may be conveniently operated to control the amount of ventilation, according to weather conditions and conditions of the car, and which may be readily adjusted to accord with the direction of movement of the car.

While I have described more or less in detail the specific form in which I have illustrated my invention as embodied, yet I do not wish to be understood as limiting myself thereto, as I contemplate changes in form, proportion of parts, and substitution of equivalents, as circumstances may require, or as may be deemed expedient.

I claim:

1. In a ventilating system for cars, the combination with a longitudinal series of ventilators in the car roof, of a lever for opening or closing each ventilator, a longitudinally reciprocating bar to which all of said levers are pivotally connected, a hand lever pivotally depending from the under side of the car roof, and pivotally connected to said reciprocating bar, and a link pivotally connected to said bar and adjustably connected to said hand lever, whereby said link retains said hand lever and thereby said ventilators in adjusted position.

2. The combination with the roof of a car having an opening therethrough, of a pair of horizontal ventilators controlling the said opening, means for pivotally supporting the inner ends of said ventilators adjacent the transverse center of said opening, a screen depending from the free end of each ventilator within the opening and close to the adjacent transverse end thereof, side shields depending from each of said ventilators within the opening close to the adjacent longitudinal sides thereof, and means for separately vertically swinging said ventilators about their hinges.

3. The combination with the roof of a car having a plurality of longitudinally arranged openings therethrough, of a pair of ventilators controlling each of said openings, means for pivotally supporting the inner edges of the ventilators in each pair adjacent the transverse center of the opening controlled thereby, a screen depending from the free end of each ventilator within the underlying opening and close to the adjacent transverse end thereof, side shields depending from each of said ventilators within the underlying opening close to the adjacent longitudinal sides thereof, and means for simultaneously opening or closing the corresponding ventilators of the several pairs.

4. The combination with the roof of a car having an opening therethrough, of a frame on the car roof around said opening, a beam extending across the transverse center of said opening and supported at its ends upon

the side members of the surrounding frame, a pair of ventilators controlling said opening, means for pivotally connecting the inner ends of said ventilators to the opposite edges of said beam, depending flanges on the side and outer edges of each of said ventilators adapted to overlap the side and end members of the frame when the ventilators are closed, a waterproof covering extending across said beam and overlapping the adjacent portions of said ventilators, and means for separately swinging said ventilators about their pivotal connections with said beam.

5. The combination with the roof of a car having an opening therethrough, of a pair of ventilators controlling said opening, a beam extending across the transverse center of said opening, means for pivotally connecting the inner edges of said ventilators to said beam, bell crank levers pivoted at their angles upon the opposite sides of a carline extending across the transverse center of said opening and below said beam, the upper ends of said bell crank levers projecting in opposite directions, means for slidingly connecting the upper ends of said bell crank levers with the under surfaces of said ventilators, and means for independently oscillating the lower ends of said bell crank levers to independently open or close said ventilators.

In testimony whereof, I have subscribed my name.

EDWARD POSSON.

Witnesses:
ANNA L. WALTON,
HENRY A. PARKS.