

D. I. COOKE.
CAR VENTILATING SYSTEM FOR SLEEPING CARS.
APPLICATION FILED DEC. 5, 1910.

1,024,439.

Patented Apr. 23, 1912

3 SHEETS—SHEET 1.

Fig. 4.

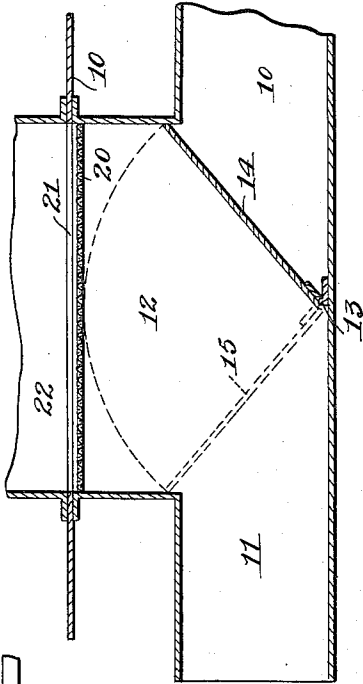


Fig. 3.

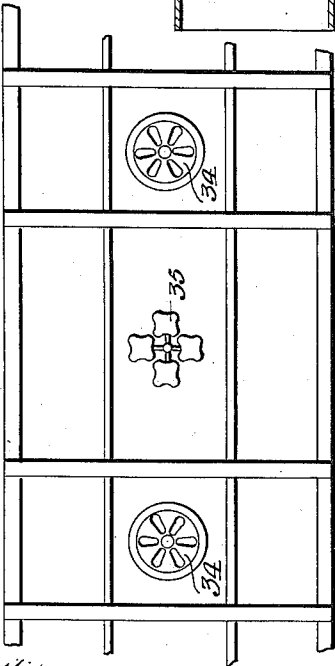


Fig. 1.

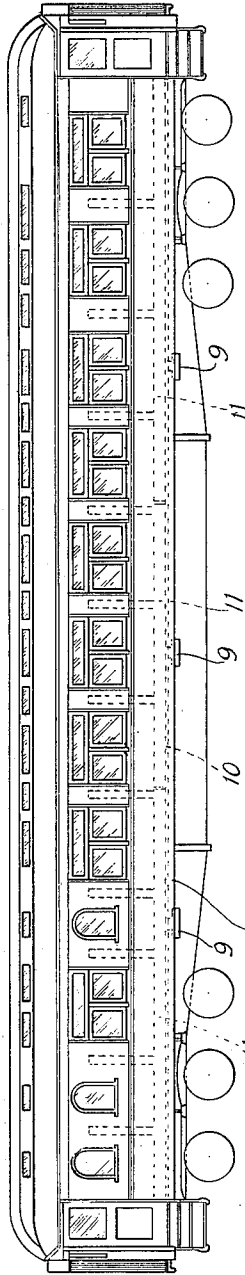
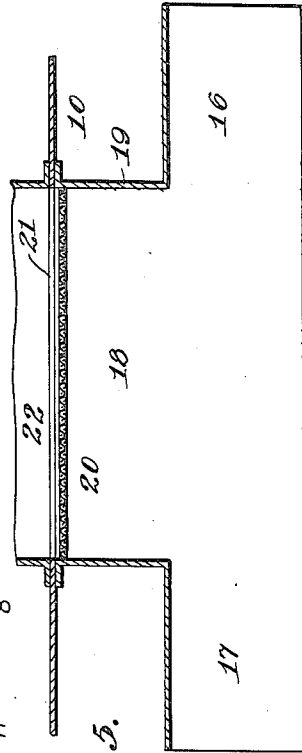


Fig. 5.



Witnesses:

Ephraim Baunig
Walter Huetzje

Inventor:

Dwight I. Cooke.

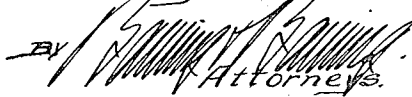
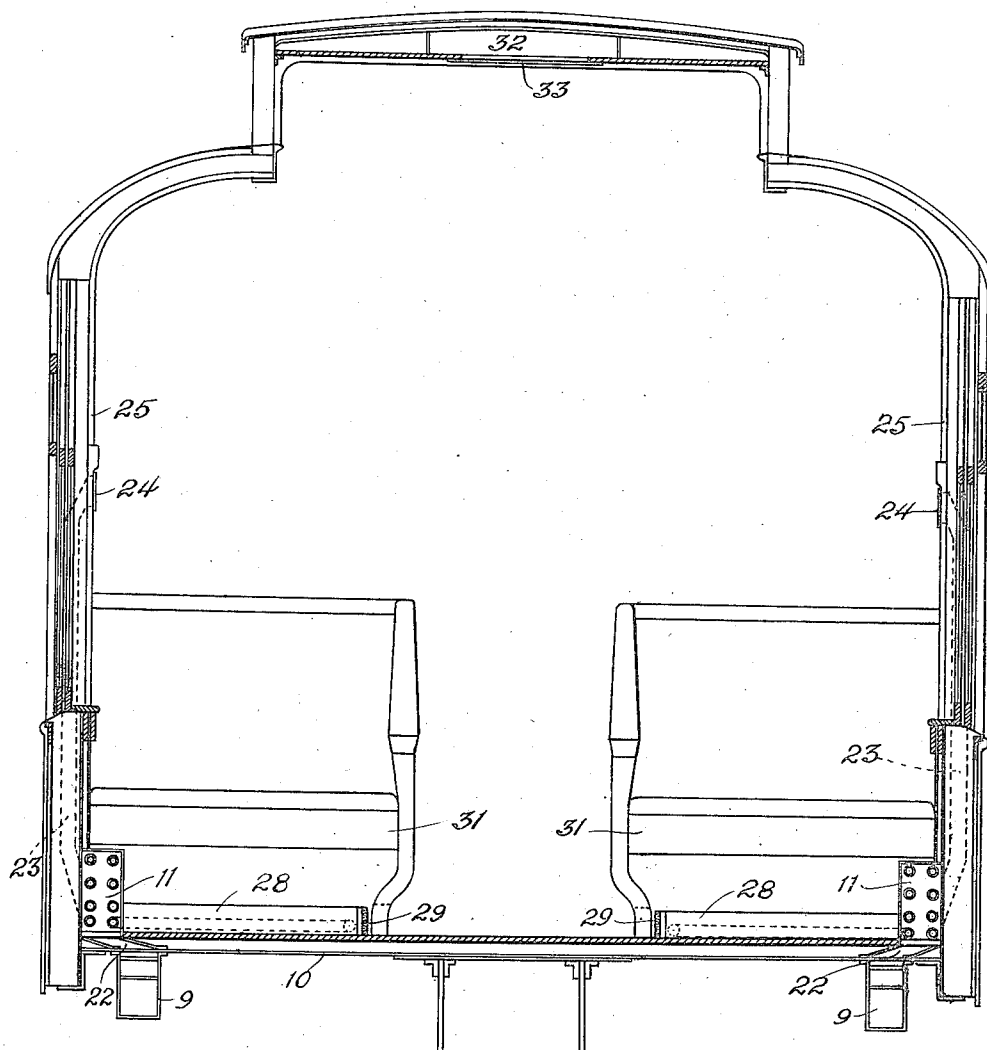
By  Attorneys.

Fig. 2.



Witnesses:

Ephraim Banning
 Walter Hoeltje

Inventor:

Dwight I. Cooke.

BY *[Signature]*
 Attorneys.

D. I. COOKE.
CAR VENTILATING SYSTEM FOR SLEEPING CARS.
APPLICATION FILED DEC. 5, 1910.

1,024,439.

Patented Apr. 23, 1912.

3 SHEETS-SHEET 3.

Fig. 6.

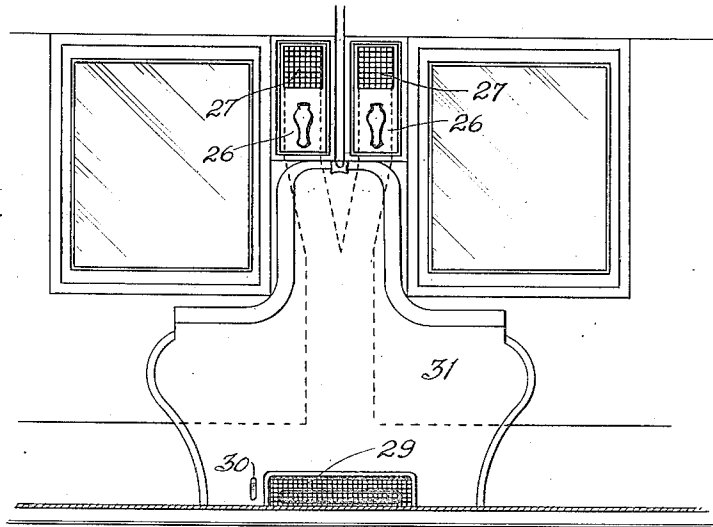
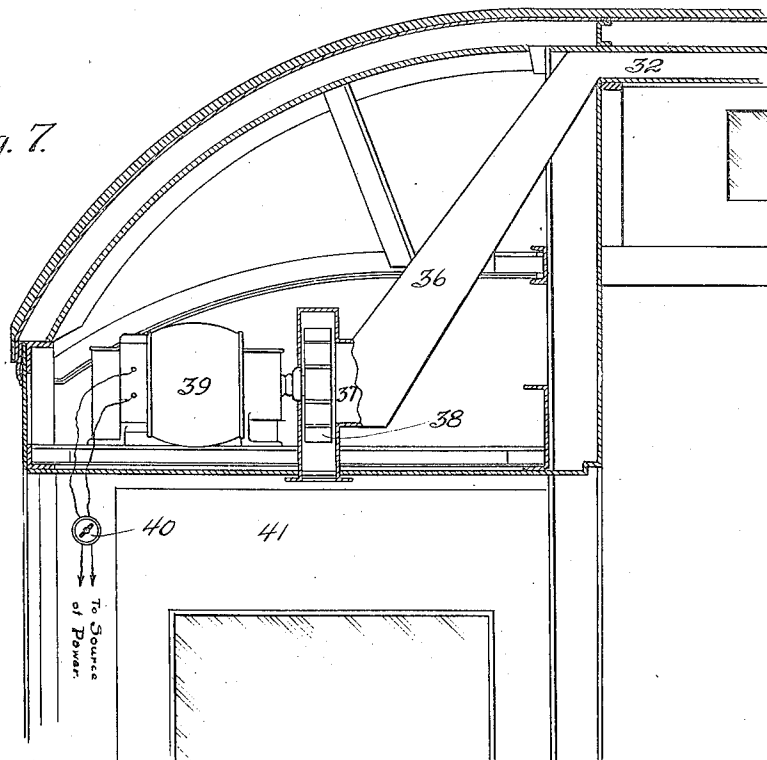


Fig. 7.



Witnesses:

Ephraim Banning.
Walter Loeltje

Inventor:

Dwight I. Cooke.
By *[Signature]* Attorney.

UNITED STATES PATENT OFFICE.

DWIGHT I. COOKE, OF CHICAGO, ILLINOIS, ASSIGNOR TO VACUUM CAR VENTILATING CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CAR-VENTILATING SYSTEM FOR SLEEPING-CARS.

1,024,439.

Specification of Letters Patent.

Patented Apr. 23, 1912.

Application filed December 5, 1910. Serial No. 595,628.

To all whom it may concern:

Be it known that I, DWIGHT I. COOKE, 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 Car-Ventilating Systems for Sleeping-Cars, of which the following is a specification.

This improved ventilating system is intended for use primarily in connection with Pullman sleeping cars, and has for its objects to provide suitable ventilating means for properly ventilating the car body for day travel and also more particularly, during sleeping hours, the respective lower sleeping car berths, thus adding to the health and convenience of the occupants.

The invention further consists in the features of construction and combination of parts hereinafter described and claimed.

A preferred form of ventilating system is shown in the drawings in which—

Figure 1 is a side elevation of a Pullman sleeping car with this ventilating system applied thereto; Fig. 2 a transverse section through the car body; Fig. 3 a detail, illustrating the proposed form of ventilating roof construction; Fig. 4 a sectional elevation of fresh air intake; Fig. 5 a sectional elevation of a modified form of fresh air intake; Fig. 6 an end view looking in upon a car seat; and Fig. 7 a sectional end elevation showing one form of exhausting means and construction therefor.

The standard sleeping car as now made has no provision for ventilating in any way the lower sleeping berths, which, when made up for use, are partitioned off so as to practically exclude the flow and travel of fresh air therethrough, save by opening one of the adjacent car windows which produces a perceptible draft directly upon the person sleeping therein. Furthermore, the practice of ventilating lower berths by raising the car windows is objectionable since it permits the smoke, dust, and cinders to enter therein, as well as to admit noxious fumes, undesirable odors, etc.

Referring to Fig. 1, a series of fresh air intakes communicate with the interior of the sleeping car 8, said intakes 9 preferably being positioned adjacent to and beneath the car floor 10^a for receiving and conveying the admitted fresh air up into suitable elongated air ducts or chambers 11. These fresh air intakes 9 are preferably positioned upon opposite sides of the car as are also the air ducts or chambers 11, and may be constructed and formed in any practical manner for producing the results desired. As shown, these air ducts or chambers 11 are formed in independent sections, and each section if desired may have a fresh air intake 9 communicating therewith, for admitting the fresh air at given points within the car, although it is obvious that other suitable means might be employed therefor.

Referring to Fig. 4, the intake 9 shown therein comprises opposite air orifices 10 and 11 merging into a central intake chamber 12 within which is pivotally mounted, as at 13, a damper or wind shield 14 adapted to travel and automatically position itself therein due to wind velocity as indicated by the dotted lines 15. The use of this damper or wind shield 14 is for the purpose of causing the admitted fresh air to be forced up within the air intake to the chambers 11 with which they communicate, and the position of the movable damper or wind shield 14 is automatically regulated back and forth within the intake chamber 12 depending upon the direction of travel of the car. When the car is traveling in the direction indicated by the intake orifice 11 the movable damper or wind shield will be in the position shown, and when the car is traveling in the opposite direction, toward the air orifice 10, the damper or wind shield 14 will automatically assume the position indicated by the dotted lines 15. It is, however, not intended to limit the invention to the particular form or construction of air intakes since any desirable means for admitting the fresh air is contemplated. In Fig. 5 is shown a satisfactory construction of intake

comprising air orifices 16 and 17 merging into a central intake chamber 18, the neck 19 of which is secured to the car floor 10^a, the same as in Fig. 4, and adjacent the car floor is preferably an air filter 20 for excluding dust, dirt and cinders. The necks of the respective intakes register with correspondingly formed openings 21 in the car floor 10^a for permitting the fresh air to travel therethrough, there usually being intermediate ducts or passages 22, for providing a continuous air passage from the intakes to the several elongated air ducts or chambers 11 which are usually positioned upon the opposite sides of the car.

A series of air supply pipes 23 are in communication with the air intake passages, or air ducts or chambers, for permitting the admitted fresh air to flow upwardly there-through, and be let out at the discharge ends 24 which, as shown, are bent inwardly so as to lie flush with the inner car walls 25 between the car windows, preferably adjacent the electric light casings 26, and, as indicated in Fig. 6 registers 27 are positioned over the respective discharge ends. This construction enables the admitted air to be discharged at a point above the passenger's head, which is of considerable importance in the matter of scientific ventilation, and when one is sleeping in a lower berth, no direct or perceptible draft is directed upon the occupant.

If desired, suitable heater casings 28 may be employed for permitting the admitted fresh air to flow therethrough and be discharged from the respective end registers 29, having suitable dampers 30, as indicated within the car seats 31, or otherwise.

As shown, a concealed exhaust chamber 32 is formed in the car roof which is preferably disposed centrally and longitudinally from end to end of the car in which is formed a series of exhaust openings 33 preferably having register faces 34 capable of exact adjustment, as set forth more fully in the Cooke Patent No. 932,761, thereby providing means for creating an imperceptible exhaust of vitiated air from all parts of the car body. In Fig. 3 is shown a practical design of supplemental roof construction, on which, it will be noted, that the exhaust registers 34 are located centrally thereof, between which are the roof car lights 35, or otherwise.

Referring to Fig. 7, it will be seen that one end of the exhaust chamber 32 merges into an exhaust port or passage 36, which at its lower end merges into a fan chamber 37 in which a fan 38 travels, being actuated by an electric motor 39 suitably connected with a snap switch 40 in convenient position within a car vestibule 41, for permitting the car porter to regulate the action of

the exhausting means. However, it is not intended to limit the invention in any way to an electrically actuated exhaust fan, since other exhausting means may be satisfactorily employed therefor.

In use and operation the exhaust fan may be actuated for exhausting the vitiated air from the car body through the exhaust openings in the exhaust chamber, which preferably have register faces, as indicated, capable of exact adjustment for causing an even, imperceptible withdrawal of vitiated air therethrough equally from all points of the car irrespective of their position to that of the exhausting means. Obviously, the amount of air expelled from the car controls the ingress of fresh air thereinto, and it is not therefore absolutely necessary that the inlets be provided with suitable air controlling mechanism, although it is preferably desirable. Furthermore, the provision of exhausting means in combination with said air supply pipes tends to produce an even, imperceptible ventilation of the lower sleeping car berths.

Although a preferred form of ventilating construction has been illustrated and described, it is obvious that various features of construction could be somewhat modified, and it is therefore accordingly intended that same shall not be strictly limited thereto.

I claim:

1. In a ventilating system for sleeping cars, elongated air ducts within and adjacent the opposite sides of the car floor, fresh air intakes disposed adjacent to and beneath the car floor for receiving and conveying fresh air into said ducts, a plurality of air supply pipes in communication with said ducts and disposed within the car walls with their discharge ends positioned at a point to open into the car for ventilating the lower sleeping car berths.

2. In a ventilating system for sleeping cars, elongated air ducts within and adjacent the opposite sides of the car floor, fresh air intakes disposed adjacent to and beneath the car floor for receiving and conveying fresh air into said ducts, a plurality of air supply pipes in communication with said ducts and disposed within the car walls with their discharge ends positioned at a point to open into the car for ventilating the lower sleeping car berths and mechanical means for exhausting the vitiated air from the car.

3. In a ventilating system for sleeping cars, elongated air ducts within and adjacent the opposite sides of the car floor, said ducts being formed in several independent sections, air intakes communicating with the several duct sections, said intakes being disposed adjacent to and beneath the car floor for receiving and conveying the admitted

fresh air up into said ducts, a plurality of
air supply pipes positioned within the car
walls and between the windows; said supply
pipes communicating at their lower ends
5 with the respective duct sections, their up-
per ends opening into the car at a point
suitable for ventilating the lower sleeping

car berths and heater casings in communica-
tion with said ducts through which the fresh
air may pass beneath the seats of the car.

DWIGHT I. COOKE.

Witnesses:

WALKER BANNING,
FRANCES M. FROST.