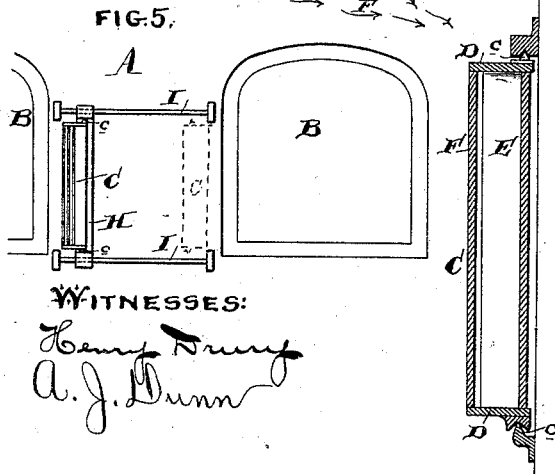
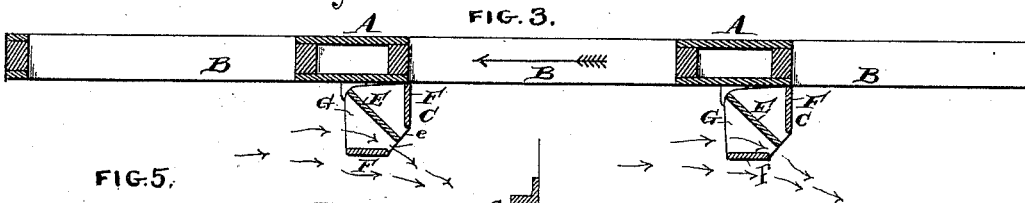
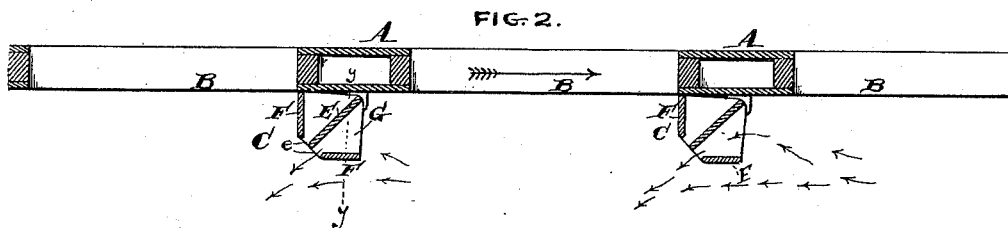
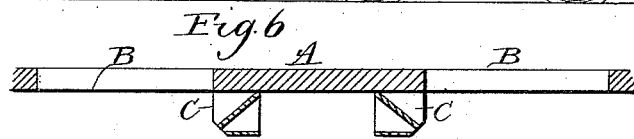
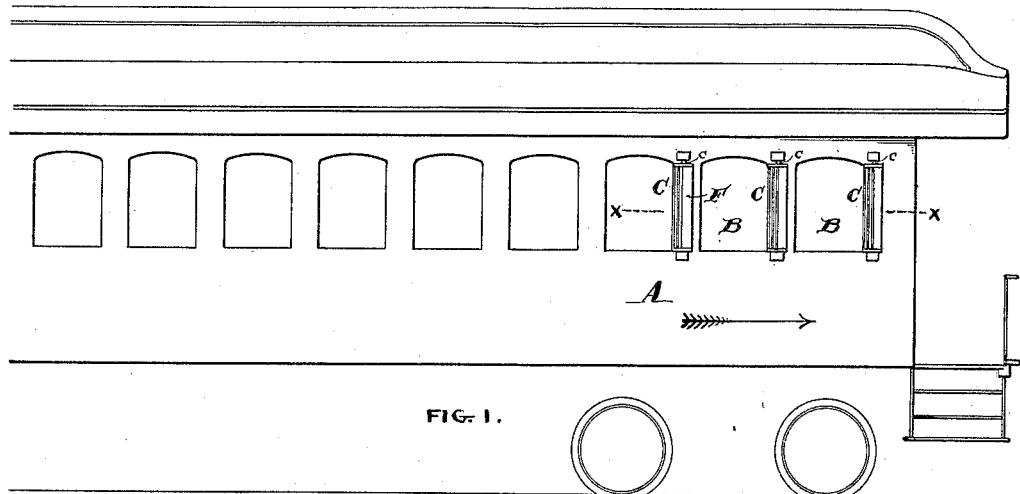


(No Model.)

L. LANDRETH.
CAR WINDOW SCREEN.

No. 421,408.

Patented Feb. 18, 1890.



WITNESSES:

Henry Dunn
A. J. Dunn

INVENTOR:

Lopold Landreth
By *[Signature]*

UNITED STATES PATENT OFFICE.

LEOPOLD LANDRETH, OF BRISTOL, PENNSYLVANIA.

CAR-WINDOW SCREEN.

SPECIFICATION forming part of Letters Patent No. 421,408, dated February 18, 1890.

Application filed September 28, 1889. Serial No. 325,424. (No model.)

To all whom it may concern:

Be it known that I, LEOPOLD LANDRETH, of Bristol, county of Bucks, and State of Pennsylvania, have invented an Improvement in Car-Window Screens, of which the following is a specification.

My invention has reference to car-window screens; and it consists of certain improvements, which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

One of the greatest inconveniences of railway traveling is caused by the dust, cinders, and sparks which are blown into the car through the open windows. If a window is opened for the purpose of ventilation or to obtain a little fresh air, not only is the person in the seat adjacent to the window inconvenienced by the dust and cinders, but those in the neighboring seats also, and the car itself is quickly filled with dust and dirt.

My invention is intended to overcome this evil by effectively preventing the entrance of dust and cinders through the open windows.

My object is also to provide the car-window with screens which shall automatically adjust themselves and operate with equal effectiveness in either direction the train may be moving, and which shall be simple in their operation, requiring no manipulation or attention from the passengers or train-men, and not liable to get out of order.

In carrying out my invention I employ a screen or deflecting device pivotally supported between the car-windows on the outside and adapted to deflect the air-currents, carrying the dust and cinders away from the open windows. This screen or deflecting device is automatically shifted by the force of the wind if the direction of travel of the train is changed, so that it is always in an operative position without any adjustment from the passengers or train-men. In cars in which the windows are widely separated, as in the Pullman sleeping-coaches, I support the deflector or screen upon horizontal rods or rails, so that when the direction of travel of the train is changed the screen may be caused by the action of the air to slide or run upon these rods or rails from one side to the other, so as to be always adjacent to the forward

side of the window, or that side toward which the train is traveling.

The details of my invention are fully set forth in the description of the drawings, in which—

Figure 1 is a side elevation of a railway-car with my improved window-screens applied thereto. Fig. 2 is a horizontal sectional view of the same, on an enlarged scale, through the line *xx* of Fig. 1. Fig. 3 is a similar view showing the positions of the screens when the car is traveling in the opposite direction to that shown in Fig. 2. Fig. 4 is a vertical sectional view on the line *yy* of Fig. 2. Fig. 5 is a side elevation of a portion of a railway-car, illustrating a modified arrangement of my screen; and Fig. 6 is a horizontal sectional view, similar to Fig. 2, on a reduced scale, of a modification of my invention.

The large arrows indicate the direction of the travel of the train and the small arrows the directions of the air-currents.

A is the body of the car, and B are the car-windows.

C is the deflector or screen, formed of the two ends or top and bottom pieces D D and the vertical partition E, to which they are secured, the said parts being arranged with reference to each other so that when the deflector or screen is in either of its extreme positions (with the edges of the top and bottom pieces D D resting against the side of the car) the central partition E will form an obtuse angle with the forward part of the side of the car, as shown in Figs. 2 and 3.

F F are vertical portions secured to the top and bottom pieces D D, arranged on opposite sides of the partition E and at an angle thereto, but having an opening or space *e* between their edges and the outer edge of the part E. It will be seen that these portions F F form with the intermediate partition E triangular compartments G on each side of the central partition, said compartments G being formed with the openings *e* between the edges of the parts E and F.

The screen or deflector C is pivotally secured between the car-windows at *c* and the pivots are shielded against rain by the hoods or flanged bearings.

The operation of my apparatus will be now

understood. When the car is traveling in the direction indicated by the arrows in Figs. 1 and 2, the air-currents, which are obviously moving in the opposite direction, will strike in the angular compartment G presented toward them, and will force the screen or deflector in the extreme position shown in Fig. 2, with the edges of the top and bottom pieces D D resting against the side of the car and the partition E arranged at an angle. It will now be seen that all the air-currents coming toward the open window (and which would ordinarily enter through it) will enter the compartment G and be deflected by the partition E out through the opening *e* and away from the window, as indicated by the arrows in Fig. 2. Moreover, those currents of air which pass beyond the range of the deflecting-screen are also guided out and away from the window by the force of those air-currents which enter the compartment G and emerge through the narrow opening *e*. The currents entering the compartment G will emerge through *e* at an increased velocity, and these currents, coming in contact with those which have passed beyond the deflector or screen G and are traveling either parallel to the car or in toward the open window, will produce with these currents a resultant force having a direction away from the open window, as shown by the arrows in Figs. 2 and 3. Thus, it will be seen that each of these screens or deflectors will have the dust and cinder laden air-currents deflected or guided away from the open window and prevented from entering. When, however, the direction of the car is reversed and travels as indicated in Fig. 3, the air-currents traveling relatively in the opposite direction will strike in the other compartment G, and thus swing the screen or deflector on its pivot *e* into the position shown in Fig. 3.

In Fig. 5 is shown a slight modification of the arrangement of the screens in cars having their windows widely separated, in which case, as is apparent, it would be impractical to pivot the screens or deflectors between the windows, since to be effective they must be adjacent to the forward side of the windows. In this modification the deflectors or screens are pivotally connected to a suitable support H, which is supported upon the horizontal rails I I and free to move thereon, so that in this construction the screen or deflector, in addition to being swung upon its points *c* when the direction of travel of the car is changed, is caused by force of the wind to move upon the rails I from one side to the other, so as to be always adjacent to the forward side of the window. If desired, however, when the windows are widely separated, they may be constructed with only one of the upright portions F, forming a single angular compartment G on one side only of the partition E, and one of these screens may be

pivoted adjacent to each side of the car-windows arranged in opposite directions, as shown in Fig. 6, so that the one operates when the car is traveling in one direction, and the other when the direction is reversed.

The force of the air-currents induced by the rapid travel of the train is amply sufficient to positively and quickly shift the screens, so that they are at all times during the motion of the train in operative position.

While I prefer the details of construction which are here shown, I do not limit my invention to them, as it is apparent that they may be varied in many ways without departing from the spirit of it.

The essential feature of my invention is the pivoted deflecting board or partition which is caused by the action of the air-currents to automatically shift when the direction of the air is changed, and to assume a position at an angle to the side of the car, so as to deflect or turn the direction of the dust and cinder laden air-currents away from the open window.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A railway-car-window screen consisting of a box-shaped deflector formed with two adjacent vertical angular compartments open at their angular edges, said screen being pivotally supported adjacent to the car-window.

2. A railway-car-window screen consisting of the two vertical portions F F, arranged at an angle to each other, and the intermediate partition E, with the openings *e* between the vertical edge of the intermediate partition E and the adjacent edges of the portions F F, whereby the air-currents entering the angular compartment between the parts E and F are deflected and issue through the opening *e*, moving in a direction away from the car-window, the whole being pivotally supported adjacent to the car-window.

3. A railway-car-window dust-screen consisting of a vertical deflecting-board arranged adjacent to the window and at an angle to the side of the car and a vertical piece arranged at an angle to said deflector, so as to form therewith a vertical angular compartment open at its angular edge to permit the air to escape from said compartment.

4. A railway-car-window screen formed with a vertical angular compartment open at its angular edge to permit the escape of air from the compartment, said screen being pivotally supported adjacent to the car-window.

In testimony of which invention I have hereunto set my hand.

LEOPOLD LANDRETH.

Witnesses:

R. M. HUNTER,
ERNEST HOWARD HUNTER.