

Oct. 6, 1925.

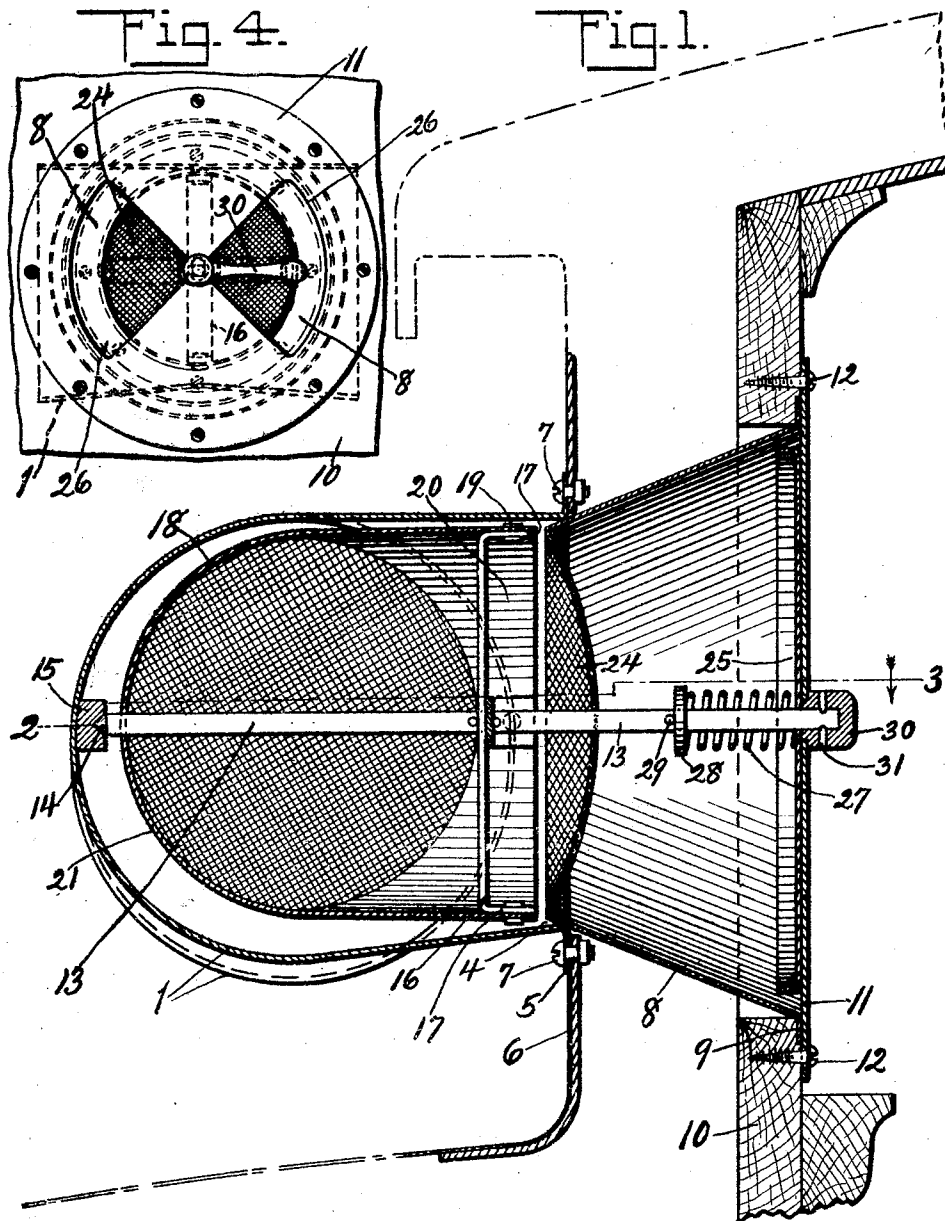
1,555,943

A. W. CLARKE

CAR VENTILATOR

Filed Feb. 15, 1924

2 Sheets-Sheet 1



INVENTOR:
Allen W. Clarke
BY *J. H. Gibbs*
ATTORNEY.

Oct. 6, 1925.

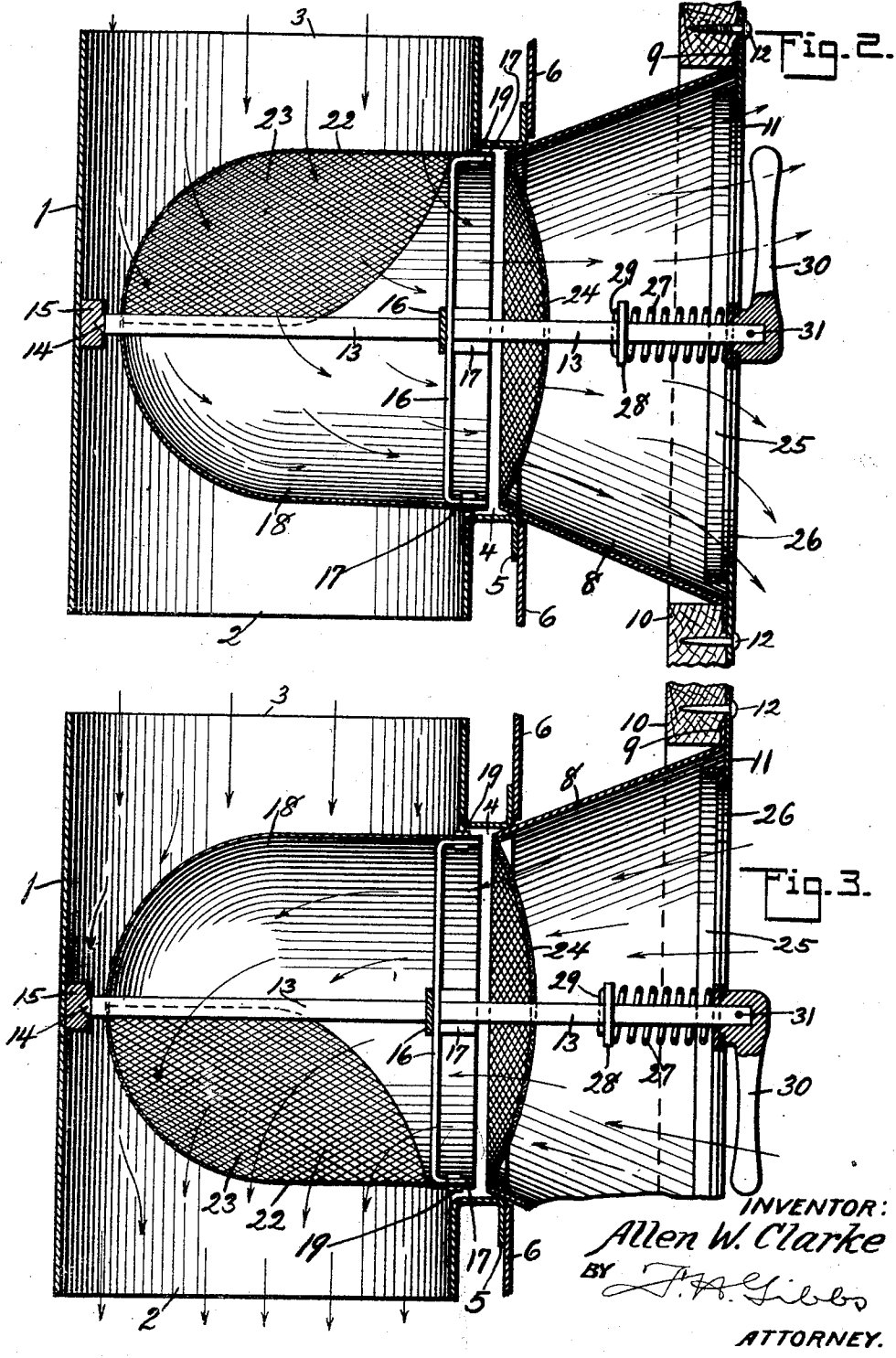
A. W. CLARKE

1,555,943

CAR VENTILATOR

Filed Feb. 15, 1924

2 Sheets-Sheet 2



INVENTOR:
Allen W. Clarke
BY *J. H. Gibbs*
ATTORNEY.

UNITED STATES PATENT OFFICE.

ALLEN W. CLARKE, OF JEFFERSONVILLE, INDIANA, ASSIGNOR TO AMERICAN CAR AND FOUNDRY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CAR VENTILATOR.

Application filed February 15, 1924. Serial No. 692,950.

To all whom it may concern:

Be it known that I, ALLEN W. CLARKE, residing at Jeffersonville, Indiana, and being citizen of the United States, have invented certain new and useful Improvements in a Car Ventilator, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof within the scope of the claims will occur to persons skilled in the art.

In said drawings:

Fig. 1 is a vertical section of a car ventilator constructed in accordance with this invention, a portion of the car structure being shown to illustrate the manner of installing the ventilator;

Figs. 2 and 3 are horizontal sections taken on the line 2—3 of Fig. 1, Fig. 2 showing the ventilator in the intake position; and Fig. 3 showing the ventilator in the exhaust position; and

Fig. 4 is a view in elevation of the ventilator applied to a car as seen from the interior of the car.

It is an object of this invention to provide an improved ventilator which may serve as either an intake or as an exhaust ventilator, and which may be readily changed to serve as either or be closed.

As shown in the drawing, the ventilator comprises a tubular sheet metal member 1 having its longitudinal axis parallel to the longitudinal axis of the car and open at its ends 2 and 3. The tubular member 1 is provided with a flanged circular opening 4 in its side, the flange 5 surrounding the opening serving as a convenient means for securing the tubular member 1 to the outer deck sash 6 by means of the bolts 7. Extending from the opening 4 in the tubular member 1 and through the outer deck sash 6 is a tapered conduit or outlet member 8 having a flange 9 which engages with the deck sash 10 and is held in engagement therewith by means of a register 11 which is secured to the deck sash 10 by means of screws 12.

Extending through an opening at the center of the register 11 is a shaft 13 which has a tapered end 14 engaging in a corresponding recess in a bearing block 15 welded or otherwise suitably secured to the tubular member 1. Fixedly secured to the shaft 13 are the cross arms 16 which have their ends bent to form shoulders 17 to which is secured a deflector 18 by means of bolts 19. The deflector 18 is tubular and has an open end as at 20 and a spherical end portion 21. The deflector 18, however, is cut away for a portion of its length and at its closed end to form an opening 22 covered by a screen 23, the opening, as shown in Figs. 2 and 3, extending substantially the full length of the deflector and including practically all of the deflector lying to one side of a diametrical plane, thus forming a deflector which has the half on one side of the diametrical plane formed of a screen 23, while the half on the other side consists of the sheet metal of which the deflector is formed and is closed.

Surrounding the shaft 13 is a screen 24 provided at its perimeter with an inclined flange by means of which it is secured to the tapered outlet member 8. It will be noted, however, as shown in the drawings that the tapered outlet member 8 and the screen 24 do not contact with the open end of the deflector 18, but are spaced a little distance therefrom in order to provide an opening through which particles which pass through the screen 23 may fall to the bottom of the tubular member 1. Fixedly mounted on the shaft 13 is a shutter 25 provided with portions corresponding in shape to the openings 26 in the register 11, and by means of which the openings in the register 11 may be closed when it is so desired. A spring 27 which surrounds the shaft 13 and is confined between the shutter 25 and a washer 28 which is held in place on the shaft 13 by a pin 29 serves to force the shutter 25 into engagement with the register 11 and to force the tapered end 14 of the shaft 13 into engagement with the recess in the bearing block 15. To operate the shaft 13, a handle 30 is secured thereto by a pin 31.

To position the ventilator to operate as an intake ventilator the handle 30 will be turned to position the screen-covered opening 22 of the deflector 18 toward the head end of the train, that is, the screen will be

facing in the direction of the travel of the train, as shown in Fig. 2, whereupon, air entering through the end 3 of the tubular member 1 will pass through the screen 23 and be deflected by the solid portion of the deflector 18 so as to pass through the screen 24 and register 11 to the interior of the car. Particles of solid matter which pass through the screen 23 will be caught by the screen 24, which is usually of finer mesh than the screen 24, and be deflected thereby to the opening between the screen 24 and the open end of the deflector 18. To position the ventilator to operate as an exhaust or discharge ventilator, the handle 30 will be turned to position the screen-covered opening 22 towards the rear of the train, that is, to position the closed portion of the deflector towards the head end or facing in the direction of the travel of the train, as shown in Fig. 3. With the deflector 18 in this position, the air currents entering through the end 3 of the tubular member 1 will be forced to pass through the restricted opening which exists between the deflector 18 and the tubular member 1, thus setting up a suction which will draw the air from the interior of the car through the register 11, screen 24, through the deflector 18 and out through the screened opening 22 and the end 2 of the tubular member 1. To position the ventilator so that the ventilator will be closed, the handle 30 will be placed midway between the two positions shown in Figs. 2 and 3, or pointing downwardly, in which position the portions of the shutter 25 close the openings 26 in the register 11. Stops may be provided so that the handle may not be turned upwardly past either the intake or the exhaust positions thus compelling the operator to place the handle in a downwardly pointing position when it is desired to close the ventilator in order to position the deflector 18 with the screen 23 at the bottom so that moisture will not be collected in the deflector 18.

What is claimed is:

1. In a car ventilator, a tubular member horizontally mounted on the car, a tubular deflector rotatably mounted in said tubular member and having openings communicating with said tubular member and the interior of the car, an outlet member communicating with said deflector, a register, a shutter controlling the openings in said register and operating means for said shutter adapted to operate said deflector.

2. In a car ventilator, a tubular member horizontally mounted on the car, a tubular deflector having an open end projecting through a side of said tubular member and a partly closed end lying within said tubular member, an outlet member aligned with the open end of said deflector, a shutter for controlling passage of air through the out-

let member, and common means for rotatably supporting said shutter and rotatably supporting said deflector in said tubular member adapted to operate said deflector to present the open portion of the partly closed end of said deflector to either end of said tubular member and open and close the shutter.

3. In a car ventilator, a horizontal tubular member having a side opening carried by the car structure, a tubular deflector therein having an open end extending through said side opening in said tubular member for communicating with the interior of the car, an outlet member extending in alinement with the outer end of said deflector, a shutter for controlling passage of air through the outlet member and common means mounting the deflector for rotation about the horizontal axis at right angles to the axis of said tubular member and mounting the shutter for movement into and out of a closed position.

4. In a car ventilator, a tubular member having its longitudinal axis parallel to the longitudinal axis of the car and having a side opening and a neck extending from the side opening, a tubular deflector extending transversely in said tubular member and having an open end extending into the neck, a conduit extending from said neck for communicating with the interior of the car, a rotatably mounted rod extending axially through the deflector and conduit and rotatably mounting the deflector with the deflector disposed in spaced relation to the walls of the neck and in spaced relation to the inner end of said conduit, a screen at the inner end of said conduit, and means to rotate said shaft and place said deflector in communication with either end of said tubular member.

5. In a car ventilator, a tubular member horizontally mounted on the car and having a side opening communicating with the interior of the car, a tubular deflector disposed transversely in said tubular member and having an open end projecting through the opening in said tubular member, said deflector having a side opening communicating with the interior of said tubular member, a conduit member extending from the open outer end of said deflector, a register for said conduit, a rotatable shaft extending axially through the deflector, conduit and register to rotatably mount the deflector, a shutter rigid upon said shaft for controlling passage of air through said register, and means for rotating said shaft and adjusting the position of said deflector and shutter.

In witness whereof I have hereunto set my hand.

ALLEN W CLARKE.