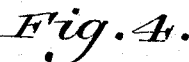
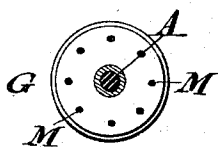
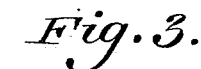
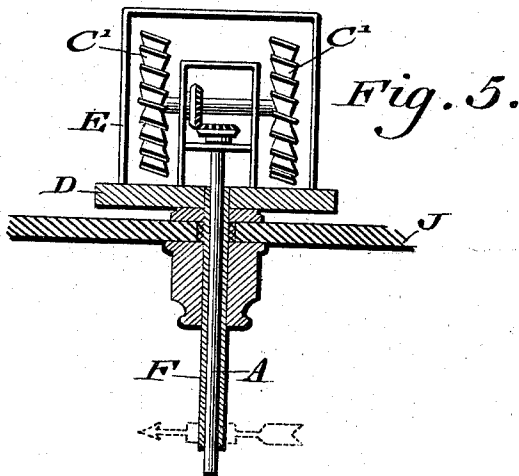
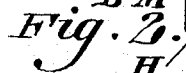


C. A. EVANS.
CAR FAN.

Patented Jan. 7, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

CLARENCE A. EVANS, OF UPLAND, PENNSYLVANIA.

CAR-FAN.

SPECIFICATION forming part of Letters Patent No. 552,660, dated January 7, 1896.

Application filed April 2, 1895. Serial No. 544,146. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE A. EVANS, a citizen of the United States, residing at Upland, in the county of Delaware, State of Pennsylvania, have invented a new and useful Improvement in Car-Fans, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a device adapted for fanning the interior of a car, whereby the temperature thereof will be reduced in a manner more effectively and pleasantly than drafts occasioned by open windows, thus also avoiding the objectionable features of smoke, cinders, and dust that are admitted into the car by such open windows. Provision is also made for regulating the force of currents and counter currents as well as reversing the same, and for rendering the device inoperative, as will be hereinafter set forth.

Figure 1 represents a side elevation of a car-fan embodying my invention. Fig. 2 represents a vertical section thereof. Fig. 3 represents a plan view of a detached portion. Fig. 4 represents a top or plan view of a number of fans arranged so as to be adapted to cause fanning in different currents. Fig. 5 represents a vertical section of a modification.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a vertically-arranged shaft, which is passed through and supported upon the bearing B, and carries the cups or vanes C of a wind-wheel C', said bearing being secured to the base D of the hood E, which is adapted to partly inclose said vanes.

F designates a vertically-arranged sleeve which is attached to the base D and depends therefrom, it being noticed that said sleeve passes freely through the washer G, and freely through the boss H, said washer resting on the roof J of a car, and said boss being secured to said roof and depending therefrom, it being also noticed that the shaft A passes through said sleeve F, and carries on its lower end the fan-blades K. Depending from the base of the hood is a pin L, which is adapted to enter either of the openings M in the washer G, it being noticed that the sleeve F has such vertical play that it may be raised to such extent that the pin L may be with-

drawn from the opening M it has occupied, and the hood E may be rotated so as to be placed in desired position relatively to the vanes C, after which the sleeve is lowered, and the pin L enters the registering opening M, whereby the hood is held in locked position. Connected with the sleeve is a finger or pointer N for indicating the position of said hood, as is evident.

The operation is as follows: When the car is running in the direction of the arrow I, the hood is set sidewise of the vanes, as shown in Fig. 2, whereby the wind acts upon said vanes and accordingly rotates the same. This is communicated to the blades K, which rotate within the car, thus cooling the car and passengers in a pleasant and effective manner, avoiding drafts from open windows and the objectionable smoke, cinders, and dust which would enter therethrough.

The temperature or extent of fanning may be regulated by the number of fans, or by varying the pitch of the fan-blades, or by setting the hood so as to cover more or less of the wind-wheel C', it being also evident that when the hood is turned so as to be fully in front of said wheel the air is prevented from acting on the vanes thereof, and thus the fan-blades are at rest and the fanning action in the car ceases.

The fan-blades may also be set so as to direct the currents upwardly or downwardly as desired.

The vanes of the wind-wheel may be made removable and reversible.

The shaft A may be supported on antifriction metal or material or ball-bearings, as desired.

In Fig. 4 I show a top view of a number of wind-wheels and hoods therefor, the openings in the latter facing alternately in opposite directions and the cups or vanes being so disposed that adjacent wheels rotate in reverse directions, by which provision the fan-blades within the car cause the air to circulate in counter currents.

In Fig. 5 I show a different form of wind-wheels and gearing for the fan-shaft without producing different results from those hereinbefore stated.

It will be seen that as the wind-wheel is partly covered by the hood the uncovered

vanes of said wheel are presented to the wind, so as to obtain the best results of force against said vanes, as the covered vanes are not exposed to the counter action of the wind.

5 Furthermore, the speed of the wind-wheel may be regulated by the position of the hood thereover, so as to present a greater or less surface of the wheel to the action of the wind.

10 In order to prevent train-hands and others from coming in contact with the exposed corners of the wind-wheel, I secure to the hood the guards P, which are located over said exposed vanes, the effect of which is evident.

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

1. A car fan consisting of a wind wheel a hood partially inclosing the same, a sleeve connected with said hood adapted to raise
20 and rotate the latter, for adjustment thereof and means for locking said hood in its adjusted position, substantially as described.

2. In a car fan having a wind wheel, a hood partially inclosing the same, and a shaft carrying said wheel mounted on said hood in
25 combination with a raising lowering and rotating sleeve connected with said hood and receiving portions of said shaft, substantially as described.

tating sleeve connected with said hood and receiving portions of said shaft, substantially as described.

3. A car fan consisting of a shaft carrying
30 a vane, and a blade respectively at its upper and lower ends, a hood adapted to partially inclose said vane, a sleeve having a bearing on the car and freely receiving said shaft and a locking pin, and a washer engaged by said
35 pin, said hood and sleeve being adapted to be raised and lowered, substantially as described.

4. A car fan having a hood open on one side, a shaft having its bearing on said hood,
40 vanes secured to said shaft within said hood, blades secured to said shaft below said hood, and a sleeve attached to said hood, and receiving portion of said shaft said hood being adapted to be raised and lowered and rotated
45 by said sleeve and provided with means for interlocking with the adjacent portion of the car, substantially as described.

CLARENCE A. EVANS.

Witnesses:

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