(No Model.) 2 Sheets—Sheet 1.

W. J. DOUGHERTY.

FAN FOR RAILWAY CARS.

No. 510,681. Patented Dec. 12, 1893.

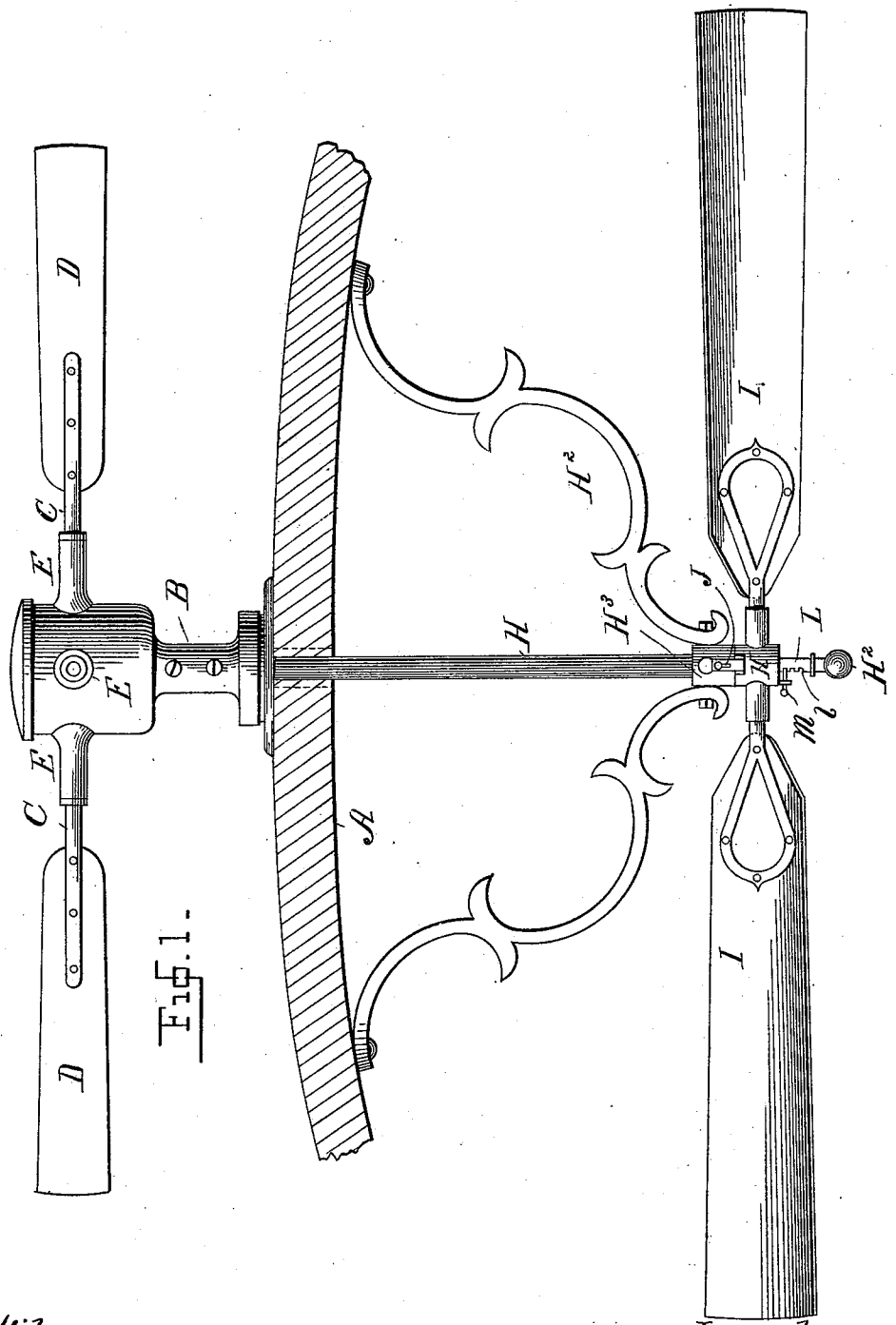

Fig. 1.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

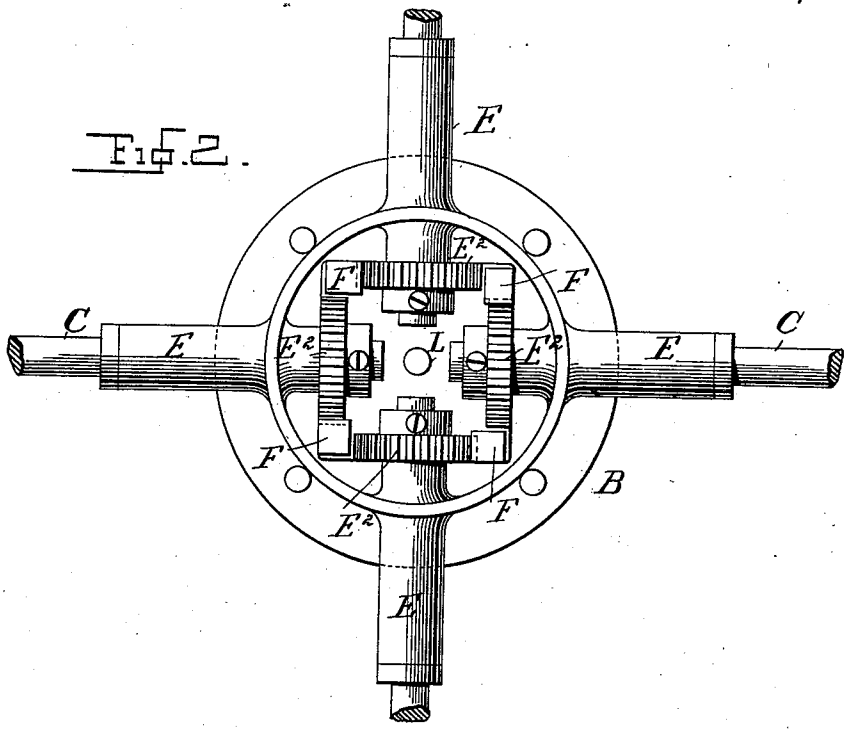
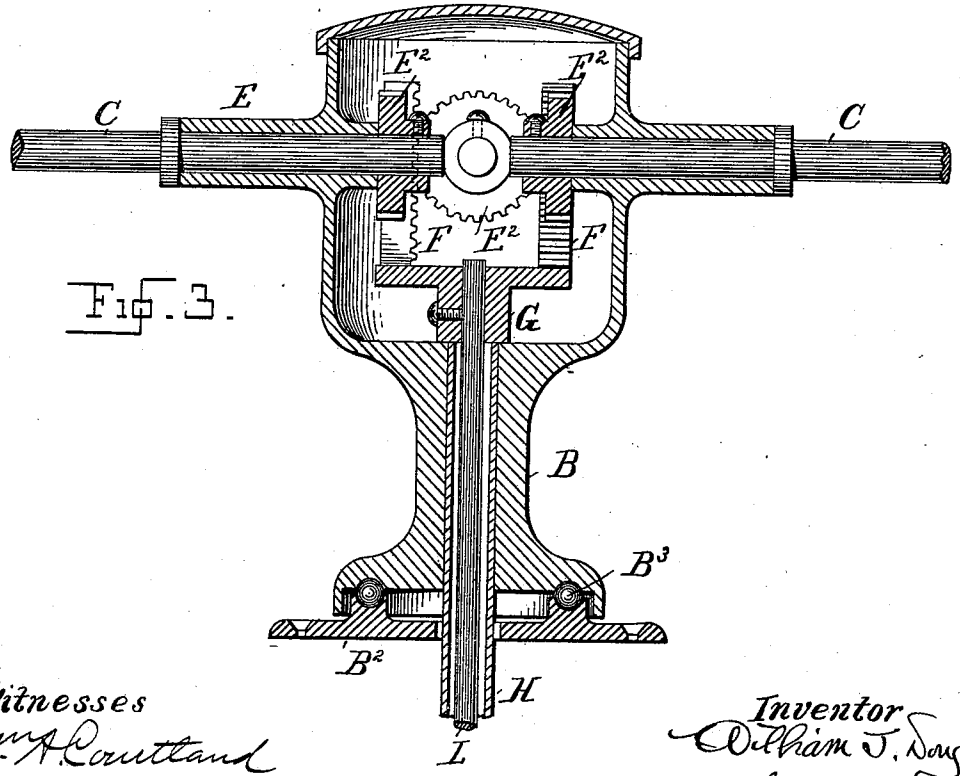


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM J. DOUGHERTY, OF YONKERS, NEW YORK.

FAN FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 510,681, dated December 12, 1893.

Application filed January 26, 1893. Serial No. 459,786. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. DOUGHERTY, a citizen of the United States, residing at Yonkers, county of Westchester, State of New York, have invented certain new and useful Improvements in Fans for Railway-Cars, of which the following is a specification.

The object of my invention is to provide a fan to be carried by a railway car or other vehicle and the motive power for which fan will be derived by the circulation of air caused by the passage of the car or vehicle.

The invention consists in a fan located within the vehicle combined with another fan located on the outside thereof, said fans being connected together so that as the latter fan is propelled the one within the vehicle will be operated.

The invention also consists in the novel details of improvement and the combinations of parts that will be more fully hereinafter referred to and the novel features pointed out in the claims.

Referring to the accompanying drawings which form a part of this specification:—Figure 1 is a side elevation of my improved fan in position on a car or vehicle, a portion of the latter being in section. Fig. 2 is an enlarged plan view, partly broken through the mechanism connected with the fan located on the outside of the car or vehicle a portion of the device being omitted to show the working parts, and Fig. 3 is a vertical cross section of the same.

In the accompanying drawings, the letter A indicates a portion of the car or vehicle, say the roof thereof.

B indicates a revolving head or turret suitably mounted thereon and adapted to turn on its vertical axis. For the purpose of providing for the ease of motion I have shown the head or turret B as mounted upon a base B^2 suitable ball bearings B^3 being provided as shown in Fig. 3 for the purpose of reducing friction, but the manner of supporting the head or turret B to rotate upon the top of the car or vehicle can be modified as desired.

The head or turret B carries several arms C that are provided with fans or wind blades D so arranged that as the wind strikes them, they will be turned and cause the head or turret B to turn on its longitudinal axis. For the purpose of permitting the blades or fans D to be turned on the longitudinal axes to present different degrees of inclination to the air, the rods C are shown passing through and journaled in bearings or bushings E carried by the head or turret B.

E^2 are gear wheels carried by the arms C within the head or turret B and adapted to mesh with toothed racks F carried by a frame or block G located within the head or turret B and adapted to have vertical movement therein whereby when the racks F are raised or lowered the arms C will be turned on their longitudinal axes thereby turning the blades D at any desired angle. But the precise means shown for turning the arms C and blades D may be varied if desired.

From the head or turret B depends a tube or rod H that passes within the car or vehicle A and at its lower part is shown journaled in a suitable bracket H^2 carried by the car or vehicle whereby the tube or rod H may have rotary motion on its longitudinal axis being turned by the head or turret B. To the rod or tube H are connected fans or blades I which may be of any suitable or desired construction for agitating the air.

J is a suitable lock adapted to lock the rod H to the frame H^2 by the bearing H^3 carried thereby to prevent rotation of the rod or tube H when desired.

L is a rod shown passing through the tube H and provided at its lower end with a ball or handle H^2 and at its upper end connected with the frame or block G whereby the latter may be raised or lowered by operating the rod L from within the vehicle. By this means, the fans or blades D can be readily adjusted from within the vehicle without the necessity of operating them on the outside of the car or vehicle.

In order to secure the frame or block G in any desired position, I provide the rod L with a suitable lock that may connect it with the tube H or other suitable part as shown in Fig. 1. The lock I have shown consists of a rack *l* on the rod L to be engaged by rod or bolt *m* on the tube H but this construction may be varied to suit the desired purposes.

By means of my improvements, when the car or vehicle travels, the fans or blades D

will be turned by contact with the air thereby rotating the head or turret B which by turning the tube H will rotate the fans or blades I within the car or vehicle thus agitating the air within the same. If the fans or blades D should rotate too fast it is merely necessary to raise or lower the rod L to present the said fans to the air at a different angle.

When it is desired that the fans or blades I should not rotate, the fans or blades D should be turned horizontally to present their narrow edges to the air and for further security the lock J will be caused to hold the tube H from rotation.

The device is simple in construction, easily operated by any person and a particular advantage is that no special power appliances are needed for operating the fans I.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination with a car or vehicle, of a fan or blades carried thereby on the exterior thereof, a tube or extension connected with said fan or blades and passing within the vehicle, and a fan or blades connected with said tube or extension and driven thereby, and a longitudinally movable rod in said tube, and means between said rod and said fan or blades for turning said blades at desired angles, and a lock for positively connecting the rod with the tube, substantially as described.

2. The combination of a hollow rotative head or turret, a fan or blades carried thereby and another fan or blades connected with the latter fan and driven thereby, and means within said hollow head for turning said blades on their pivots, and a lock for positively connecting said parts together, substantially as described.

3. The combination of a rotative head or turret, a fan or blades connected therewith and a tube or extension depending therefrom with a fan or blades connected with said tube or extension, a rod within said tube and means connecting said rod with said blades for turning the latter on their pivots, and means for positively locking said rod to said tube, substantially as described.

4. The combination with a set of fans or blades, and means for turning them simultaneously at different angles, of another set of fans or blades connected with the first mentioned set of fans, and means connecting the two sets of fans or blades for positively locking the two sets of fans or blades together in the desired position relatively to each other, substantially as described.

5. A rotative head or turret, fans or blades having arms journaled in said head or turret and gears on said arms combined with a block or head carrying separate gears to engage respectively with the first mentioned gears, a rod to operate said block and gears, a tube connected with said head or turret and a fan or blades connected with said tube and driven thereby and means for locking said rod and tube together in the desired position, substantially as described.

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