A. CLARKE.

Dust-Arrester for Railroad Cars.

No. 204,134. Patented May 28, 1878.

FIG. 1

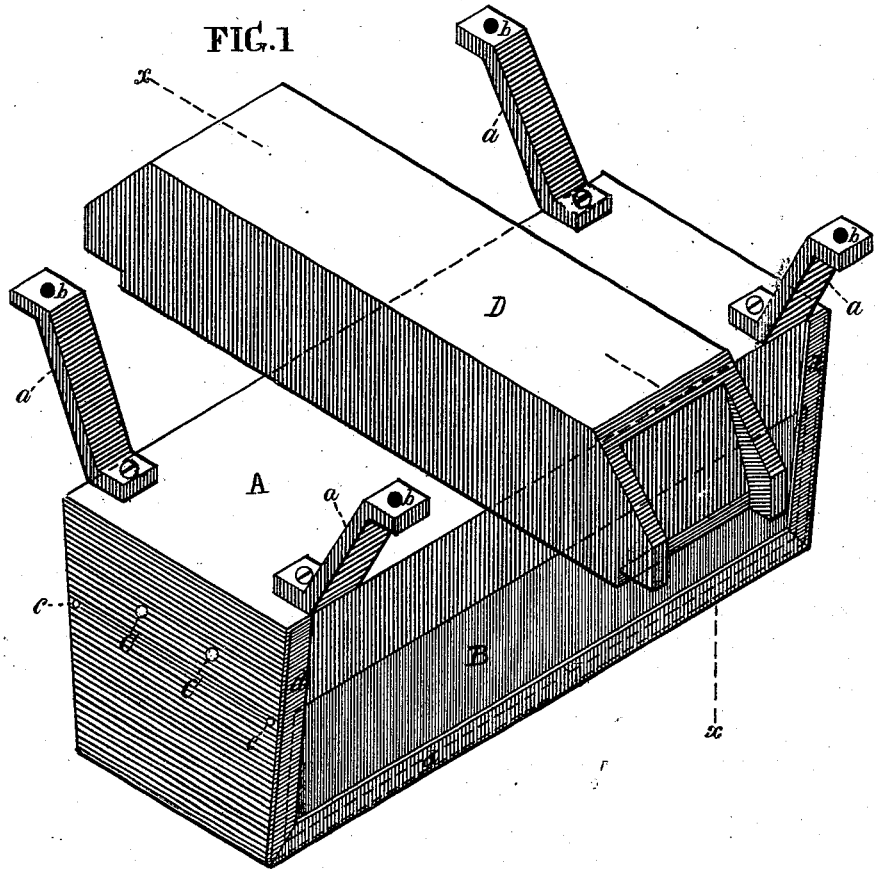
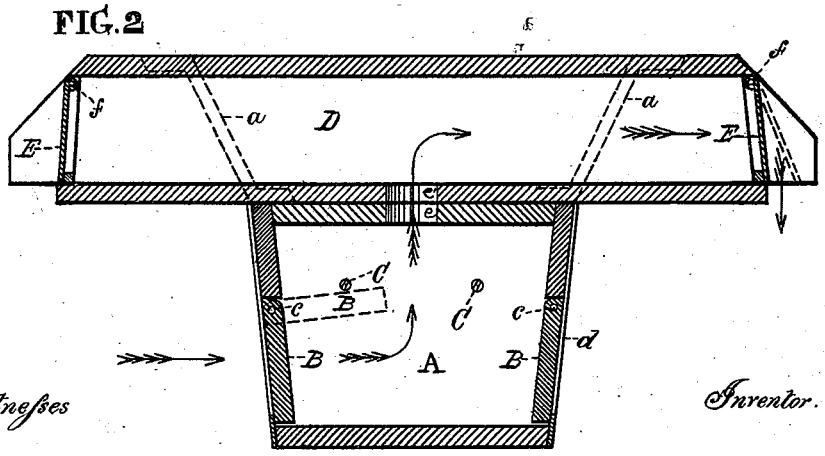


FIG. 2



Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED CLARKE, OF ATLANTIC CITY, NEW JERSEY.

IMPROVEMENT IN DUST-ARRESTERS FOR RAILROAD-CARS.

Specification forming part of Letters Patent No. **204,134**, dated May 28, 1878; application filed May 8, 1878.

To all whom it may concern:

Be it known that I, ALFRED CLARKE, of Atlantic City, in the county of Atlantic and State of New Jersey, have invented a new and useful Improvement in Dust-Arresters for Railroad-Cars, of which the following is a specification:

The object of my invention is to arrest the dust which is usually drawn into the windows of the cars by the movement of the train by means of a simple apparatus automatically adjusted by the movement of the train, so as to perform its function, when the cars are running in either direction, of collecting the dust and discharging it, in a condensed state, upon the road-bed, thus preventing its rising when discharged beneath any of the cars and rushing into the windows of cars in their rear.

The nature of my invention consists of a dust-gathering box or case beneath each car-body, arranged at right angles thereto, and having at its opposite sides, at right angles to the longitudinal direction of the car, a door opening inwardly and in combination with said case, and on the top of the same a trunk arranged longitudinally with the car, and provided with a door at each end opening outwardly, the said trunk having an open communication with the dust-gathering box or case by means of one or more openings through the top of the case and the bottom of the box, so that when the train is in motion the front door of the dust-gathering case is opened inwardly by the force of the air against its outside surface, and the rear door is kept tightly closed, and hence the dust which rushes with the air into the case is forced up into the above-mentioned trunk; and as the pressure of the air at the front of the trunk upon the outer surface of the front door tightly closes the same the current is forced to the rear end of the trunk, and, the dust being thrown with considerable force against the inner surface of the door, the latter is partly opened, and the dust in a condensed state falls through the door opening upon the road-bed, and, being condensed when discharged from each car, is not drawn into the windows of any of the cars in their rear.

In the accompanying drawings, Figure 1 is an isometrical perspective view of my improved dust-arrester. Fig. 2 is a vertical section of the same at the line *x x* of Fig. 1.

Like letters of reference in both figures indicate the same parts.

A represents a box or case, which is provided with hangers *a a a a* securely fastened to its top. The upper ends of the hangers have flanges *b*, through which screw-bolts pass in confining the case to the bottom of a car-body, the case being arranged equidistant from the trucks. B B are doors at opposite sides of the case. They are hung at their top edge on pivots *c*, upon which they have a partial turn, and when they are down in their closed position they bear against the casing-strips *d*. The ends of the case A are on an inward incline from the top, as represented in the drawings, so that the doors, when in their closed position, by the force of their gravity, close tightly upon the casing. There are longitudinal rods C C, the ends of which are permanently connected with the ends of the case, which act as stops to prevent a too great upward movement of the doors when forced open, as represented in Fig. 2. D is a trunk, arranged crosswise of and on top of the case A, and is fastened to the bottom of the car in any convenient manner, or, if desired, to the top of the case A. The top of the case has a hole, *e*, which connects with the hole *e'* in the bottom of the trunk, to admit of the passage of dust into the latter from the case A. The trunk is open at each end, and is provided with doors E E, which are hung on the rods *f f*. They are opened outward when forced by the inward current in the direction opposite to the movement of the train, but are closed by the current of air forced upon their fronts, respectively, by the forward movement of the train. When brought to their closed position they bear against the ledges *g*, as seen in Fig. 2, and in order to press tightly thereon the ledges incline outward to the bottom of the trunk from a perpendicular position.

All of the cars are provided with a dust-arrester, as above described, and when the train is not moving both doors of the case A and also of the trunk D are closed by their gravity, as shown in full lines in Fig. 2; but when the train is running in the direction indicated by the arrows the pressure of the exter-

nal air brought to bear against the then front door B of the case forces it open inwardly, as indicated by dotted lines, and presses the opposite door at the other side of the case tight against the casing-strips *d*, and thus prevents the escape of the dust forced by the current of air except through the openings *e* and *e'* in the top of the case and the bottom of the trunk into the latter, whence it is caused to rush with considerable force; and as the front door E of the trunk, by the immense pressure of the air upon it, increased by the movement of the train, is greater than that upon the rear door E from without, the latter door is caused to open outward by the inner current of air, and to remain partly open during the movement of the cars, so that the dust that is caused to pass into the trunk through the case A, as it is thrown with much force against the rear door, after striking it, falls in its condensed state upon the road-bed. When the train runs in the opposite direction, the front and rear doors in that state of the cars assume the like position above described—that is to say, in whatever way the train moves the door of the case in front of the movement is opened inward, and the door at the opposite side is closed, and the front door of the trunk is closed and the rear door opened.

I claim as my invention—

1. The dust-gathering case A, having doors B B at opposite sides opening inwardly alternately, according to the movements of the train, one door being closed while the other is open, and having one or more holes in its top for the escape of dust into a suitable discharging-receptacle, the case being adapted to be connected with the bottom of a car-body, substantially as and for the purpose set forth.

2. The trunk D, having doors E, adapted to open outward, one being opened while the other is closed, in combination with the case A, having doors B B to open inward, there being one or more holes or openings in the bottom of the trunks communicating with like openings in the top of the case A, substantially in the manner and for the purpose set forth.

ALFRED CLARKE.

Witnesses:

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