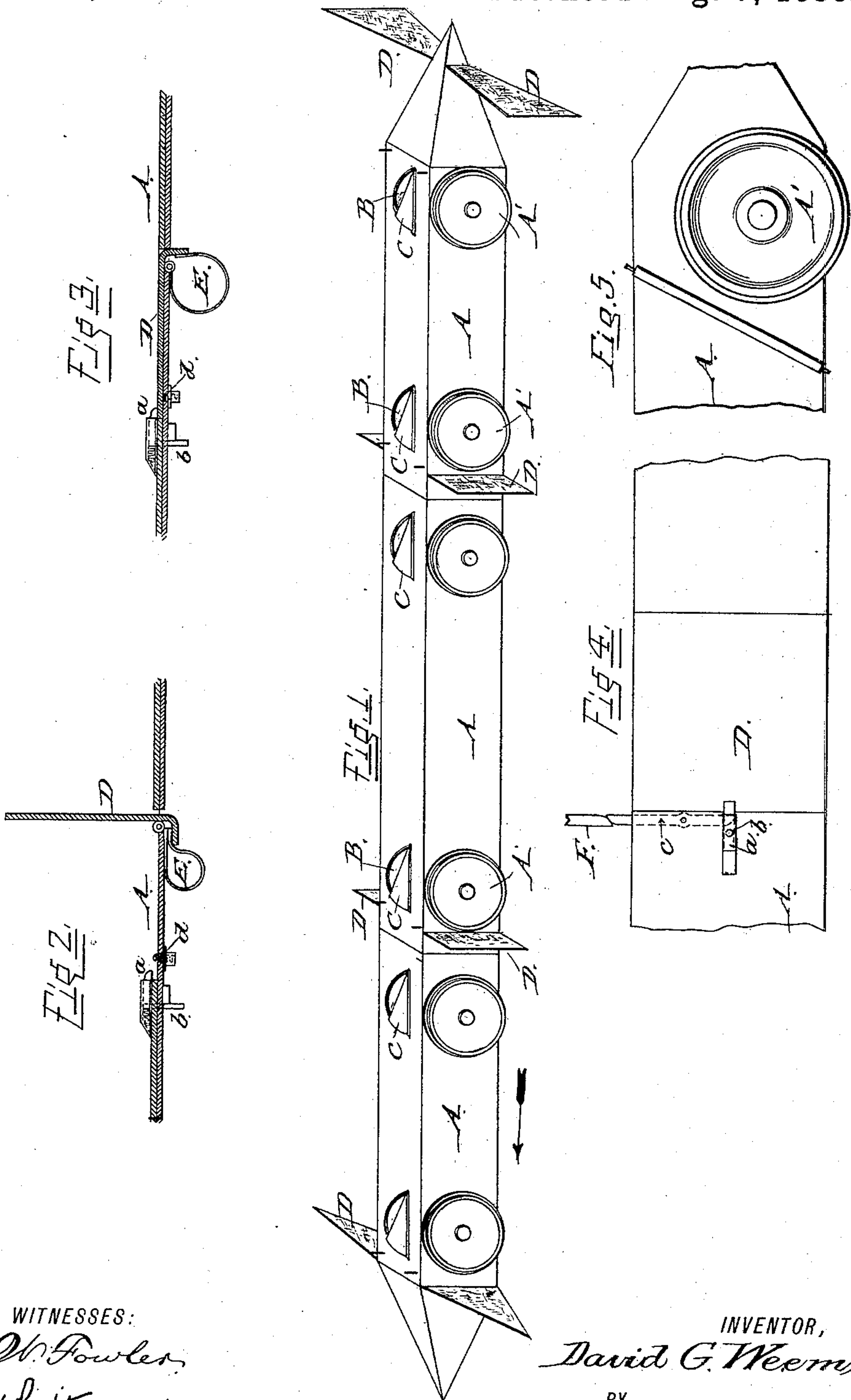


(No Model.)

D. G. WEEMS.
ELECTRIC RAILWAY SYSTEM.

No. 387,383.

Patented Aug. 7, 1888.



WITNESSES:
J. W. Fowler,
W. H. Patterson,

INVENTOR,
David G. Weems,
BY
A. H. Evans & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

DAVID G. WEEMS, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE ELECTRO-AUTOMATIC TRANSIT COMPANY OF BALTIMORE CITY, OF SAME PLACE.

ELECTRIC-RAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 387,383, dated August 7, 1888.

Application filed April 20, 1888. Serial No. 271,290. (No model.)

To all whom it may concern:

Be it known that I, DAVID G. WEEMS, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Electric-Railway Systems, of which the following is a full and clear description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a perspective view of a train of cars having my improvements attached. Figs. 2, 3, and 4 represent detailed views, to be hereinafter fully described. Fig. 5 is a modification, to be referred to.

The present invention relates to certain improvements in electric-railway systems for transporting mail and packages at a high rate of speed over a line of elevated, surface, or underground tracks or rails, using as a motive power electricity, having the motor located in a traveling car or locomotive, having attached thereto a series or train of cars, the said train being also provided with means for automatically controlling, starting, and stopping itself, as more fully set forth in a former patent granted to me January 17, 1888, numbered 376,567, on which patent, and the application filed by me March 20, 1888, Serial No. 267,802, the present invention is an improvement.

My present invention consists, broadly, in the application to the cars of the train of folding, collapsible, or other wings, adapted to be automatically thrown outward at predetermined intervals to check the progress of the train; and my invention further consists in the improved constructions and combinations of devices, which I shall hereinafter fully describe and claim.

To enable others skilled in the art to make and use my invention, I will now describe its construction and indicate a preferred manner of carrying the same out.

In the said drawings, A represents a series of cars or vehicles of any approved form, although here shown as having a square, or approximating square, cross-sectional configuration, the said cars being mounted upon wheels A', adapted to travel upon the main rails, and upper guide-wheels, B, adapted to engage the upper electrically-charged guide-rail, as more clearly disclosed in my said former patent, No.

376,567; and, if desired, the said guide-wheels B may be provided with a suitable housing, C, the purpose of which is fully described in my application previously mentioned.

To the front and rear portions of the sides of the cars and the locomotive, and, if desirable, at points intermediate of these front and rear ends, are secured wings D, of any suitable form, whose inner ends are held so as to permit said wings to be thrown outward beyond the plane of the sides of the cars and their wheels, whereby said wings offer sufficient resistance to the air to check the speed of the cars and finally stop the train.

When not in use, the wings lie close against the sides of the cars and locomotive, their free ends being held in close engagement with spring-actuated plungers *a*, while their opposite or inner ends are connected with a spring or equivalent device, E, the tendency of which is to keep the wings close against the sides of the cars.

The plungers *a* have projecting pins or lugs *b*, which are engaged by the lower ends of suitable levers, *c*, pivoted upon the cars, so that their upper or opposite ends may be engaged by suitable fixed stops, F, in the roadway, preferably alongside of the tracks and at points a suitable distance in advance of the station at which it is desired to stop the train.

Spring-cushions or other suitable devices, *d*, are adapted to be depressed by the free ends of the wings when the latter are folded in the positions shown in Fig. 3, and exert sufficient pressure against said wings that when the plungers are disengaged with their free ends the cushions force the wings away from the sides of the cars a distance sufficient to enable the air to pass behind the wings and throw them outward to the position shown in Fig. 2, in which position their inner ends serve as stops to relieve the strain upon their pintles when pivoted wings are used, and also hold them in position where they receive the full impact of the air.

When the wings are thrown outward, the spring or device E is depressed or contracted, but steadily exerts a pressure against the inner ends of the wings and in opposition to the pressure of the air against the outer ends or faces, but not sufficient to overcome the

latter pressure until the speed of the train has been greatly lessened.

From this description it will be seen that when it is desired to stop the train at a station, the stop in advance of such station is set so as to be engaged by the levers *c* on the train.

When these levers are struck by the fixed stops, their lower ends throw the plungers out of engagement with the outer ends of the wings, and the spring or cushion *d* lifts said ends away from the sides of the car. The air now rushes behind the wings and throws them to the open position in Fig. 2, in which position they remain, retarding the movement of the train. As the train lessens its speed, the resistance of the air against the wings is also lessened and the tension or spring of the device *E* overcomes the resistance of the air and automatically closes the wings against the sides of the cars, the plungers automatically engaging the wings and holding them in a locked closed position until they are again released for the next station.

In some cases it may be desirable to incline the wings from the bottom upward and backward, as shown in Fig. 5, so that the currents of air striking the wings will be discharged over the tops of the cars, and thus tend to more securely hold the cars to the tracks.

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

1. In an electric railway system for transporting mail, express-packages, &c., a train or series of cars provided with folding or collapsible wings adapted to be automatically thrown out laterally to resist the movement of the train.

2. In an electric-railway system, a series of

cars provided with pivoted wings, automatic holding devices, and pivoted levers, in combination with fixed stops on the road adapted to engage said levers and release the holding devices, whereby the wings may be thrown outward by the action of the air.

3. In an electric-railway system, the combination, with fixed stops on the line of road, of one or more cars having pivoted wings and trip-levers, and plungers for automatically engaging the wings and holding them in a closed position.

4. In an electric-railway system, the combination, with fixed stops on the line of road, and a train of cars having wings adapted to be released by said stops and intermediate devices, and to be thrown outward by the force of the air, of a yielding cushion beneath the wings adapted to effect a preliminary outward movement of the wings.

5. The cars having the wings adapted to be automatically released and thrown outward, and a spring or device adapted to exert a pressure in opposition to the force of air and to automatically close the wings when the train lessens its speed.

6. An improved electric-railway system, comprising fixed stops on the line of road, cars having wings adapted to be thrown outward by said stops and intermediate levers and plungers, yielding cushions adapted to effect a preliminary movement of the wings, and springs for automatically closing the wings when the train lessens its speed.

DAVID G. WEEMS.

Witnesses:

WM. M. PEGRAM,
GEO. B. MICHAEL.