(No Model.)

T. W. PITTS.

PNEUMATIC RAILWAY.

No. 384,333. Patented June 12, 1888.

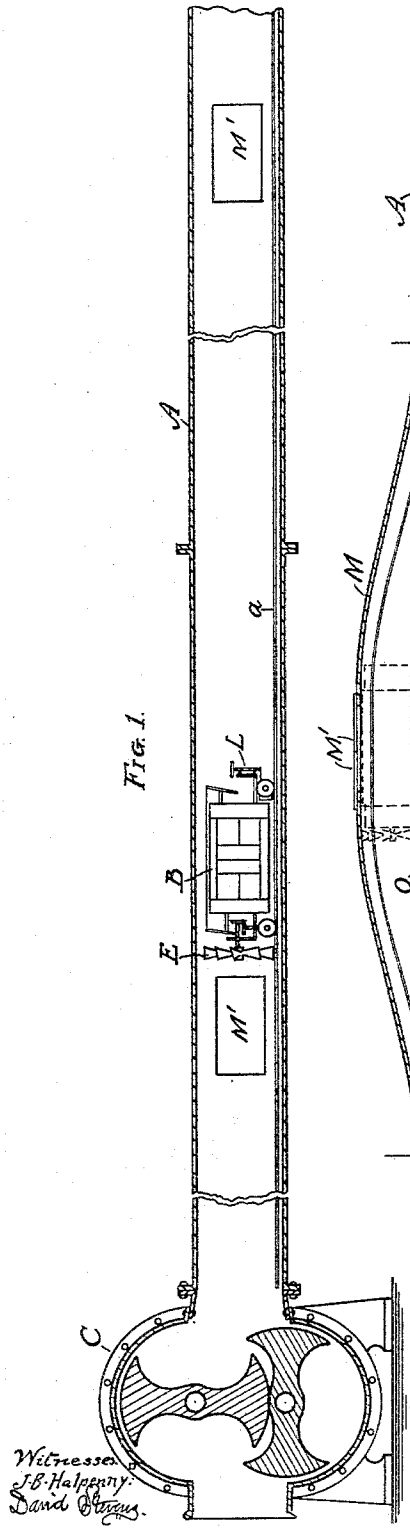


FIG. 1.

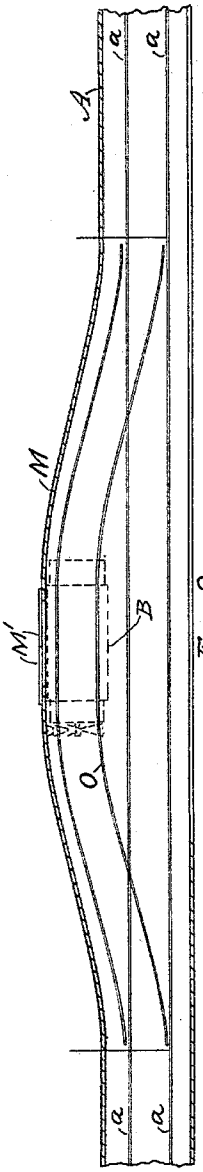


FIG. 2.

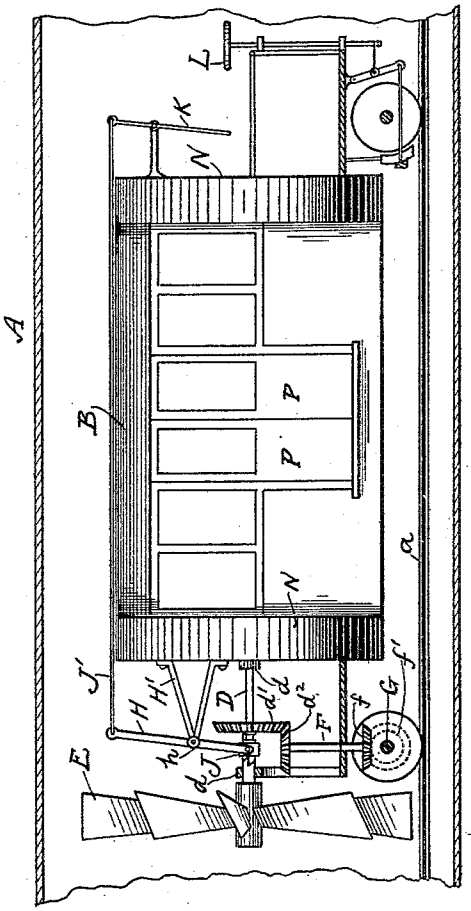


FIG. 4.

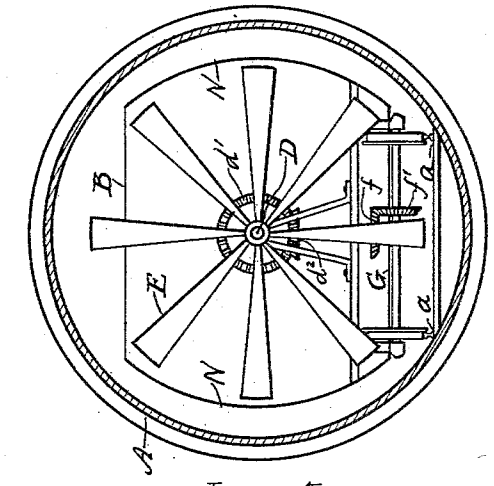


FIG. 3.

Witnesses:
J. B. Halpenny.
David Bruce.

Inventor:
Thomas W. Pitts.
By Bridley & Gilchrist.
his Attys.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

THOMAS W. PITTS, OF WOLSEY, DAKOTA TERRITORY.

PNEUMATIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 384,333, dated June 12, 1888.

Application filed October 11, 1887. Serial No. 252,001. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. PITTS, of Wolsey, in the county of Beadle and Territory of Dakota, have invented certain new and useful Improvements in Pneumatic Railways, of which the following is a description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical sectional view of a pneumatic tube, showing my improved cars therein and a compression-blower connected therewith. Fig. 2 is a detail plan view of a portion of said tube in horizontal section, showing a switch therein and a car upon said switch. Fig. 3 is an end view of said tube, showing a rear view of a car therein; and Fig. 4 is a longitudinal vertical sectional view of a portion of said tube, enlarged, and showing a side view of a car therein.

Like letters of reference indicate like parts in the different figures.

My invention relates to pneumatic railways; and my object is to so construct a railway-car, in connection with a pneumatic tube, that a series of cars may be propelled in different parts of the tube at the same time, and that one or more of said cars may be stopped or impeded in velocity without changing the velocity of the air-currents in the tube or the movement of the other cars.

A further object is to provide suitable switches whereby said cars may pass each other, if desired, and receive or unload passengers or freight, preferably without permitting the escape of air from the tube.

To this end my invention consists in the combination of elements hereinafter more particularly described and claimed.

In the drawings, A represents a pneumatic tube, preferably constructed of cast-iron and provided with tracks *a a* therein for the reception of a railway-carriage, B.

C represents a compression engine or blower, of which I purpose to employ at stated intervals, in proportion to the length of the tube, as many as are necessary to maintain the desired pressure. The tube should be enough larger in diameter than the size of the car, as shown in the drawings, to permit the air to freely pass around and by said car, as I do not depend upon the direct action of the air upon the surface of the car to propel it, for in that event but a single car could be actuated by means of a given blast of air, and, when so actuated, it would be impracticable to impede the movement of or stop the same without arresting the air-current.

Mounted in the rear of the car, upon a shaft, D, which is journaled in suitable bearings, *d d*, Fig. 4, is a fan, E, preferably of a diameter larger than that of the car. Keyed loosely to the shaft D, so as to permit of a longitudinal movement therein, is a bevel-gear, *d'*, Fig. 4, which is arranged to engage a corresponding gear, d^2, upon a vertical shaft, F, connected with the axle G by means of gears *f f'*. A lever, H, pivoted at *h* upon a bracket, H', is in turn connected with a sliding clutch, J, which serves to throw the gears d' d^2 in and out of engagement, as desired. A rod, J', connects the lever H with a corresponding lever, K, upon the front of the car, from which position the fan E may be thrown in and out of gear.

L is an ordinary brake connected with the car-wheels in the usual way to control their movement.

In order to permit the cars to pass each other at stations, if desired, as well as to discharge passengers or freight without permitting the air to escape, I enlarge the tube, as shown at M, Fig. 2, and provide one or more sliding doors, M', whereby access may be had to a car upon arriving at a station. Upon the sides at the respective ends of the car are formed lateral projections N N, Figs. 3 and 4, the edges of which are curved to form the arc of a circle having the same radius as that of the tube, as shown in Fig. 3. At each station I provide a switch, O, the tracks of which are so placed opposite the opening M' as to cause the flanges N N to fit the side of the tube upon the respective sides of the door. The entrance to the car being through doors P P, Fig. 4, in the side, persons may pass in and out while shielded from the air, which is prevented by the flanges N N from escaping, and is caused to pass by the car upon the main line of the tube.

It is obvious that either the exhaust or compression principle, or both, may be applied either by means of blowers or in any well-known way to produce a current in the tube.

Aside from the fact that a number of cars

may be propelled in different parts of the tube by the same current, a further advantage exists in the fact that a greater power may be exerted by means of the fan for propelling the car over grades.

Having thus described my invention, I claim—

1. The combination, with a pneumatic tube and means, as a compressing-engine, for producing a current of air therein, of a car and a fan mounted upon one end of said car and in operative connection with the car-axle, substantially as shown and described.

2. The combination, with a pneumatic tube and means, as a blower or compression-engine, for producing a current of air therein, of a car, a fan mounted thereon and in operative connection with the car-axle, and means, as a lever and clutch, for throwing said fan out of gear, substantially as shown and described.

3. The combination, with a pneumatic tube, of means for inducing a current of air therein, a railway-track, a lateral offset or enlargement within the tube, a switch located within said offset, doors in the side of the tube, and a railway-car provided with curved flanges at the respective ends, whereby said flanges may conform to the side of the tube when opposite to the doors, substantially as shown and described.

4. The combination of the car B, flanges N N, tube A, and a switch placed sufficiently near to the outside of the tube to permit the said flanges to touch said tube when opposite to the doors of the station, substantially as shown and described.

THOMAS W. PITTS.

Witnesses:
D. H. FLETCHER,
J. B. HALPENNY.