

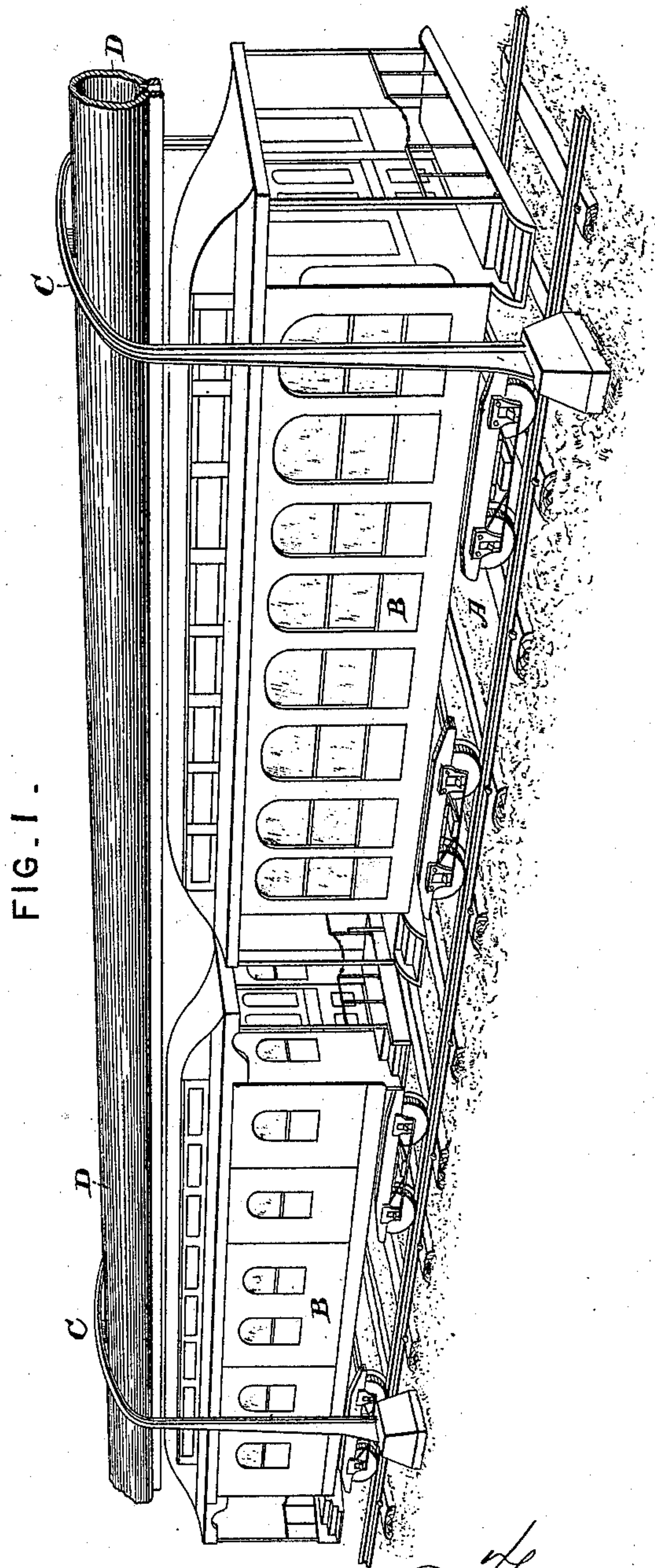
(No Model.)

4 Sheets—Sheet 1.

T. J. MAYALL.  
RAILWAY SYSTEM.

No. 384,054.

Patented June 5, 1888.



attest:  
Geo. T. Smallwood.  
Philip H. Hume

Inventor  
Thomas J. Mayall  
by A. B. R.  
his attorney.

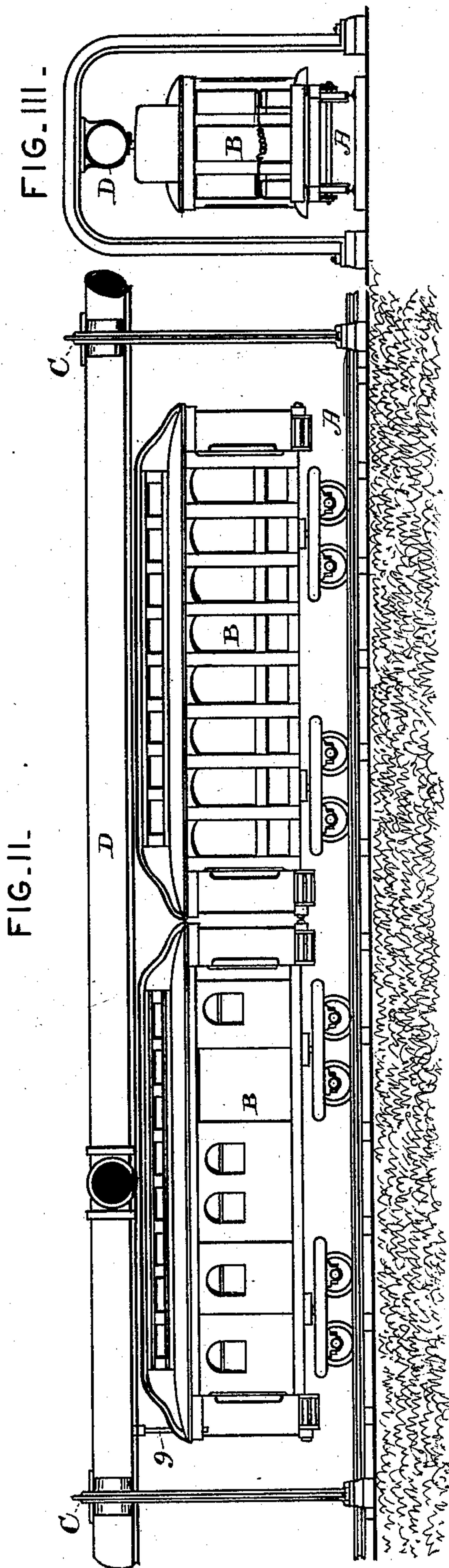
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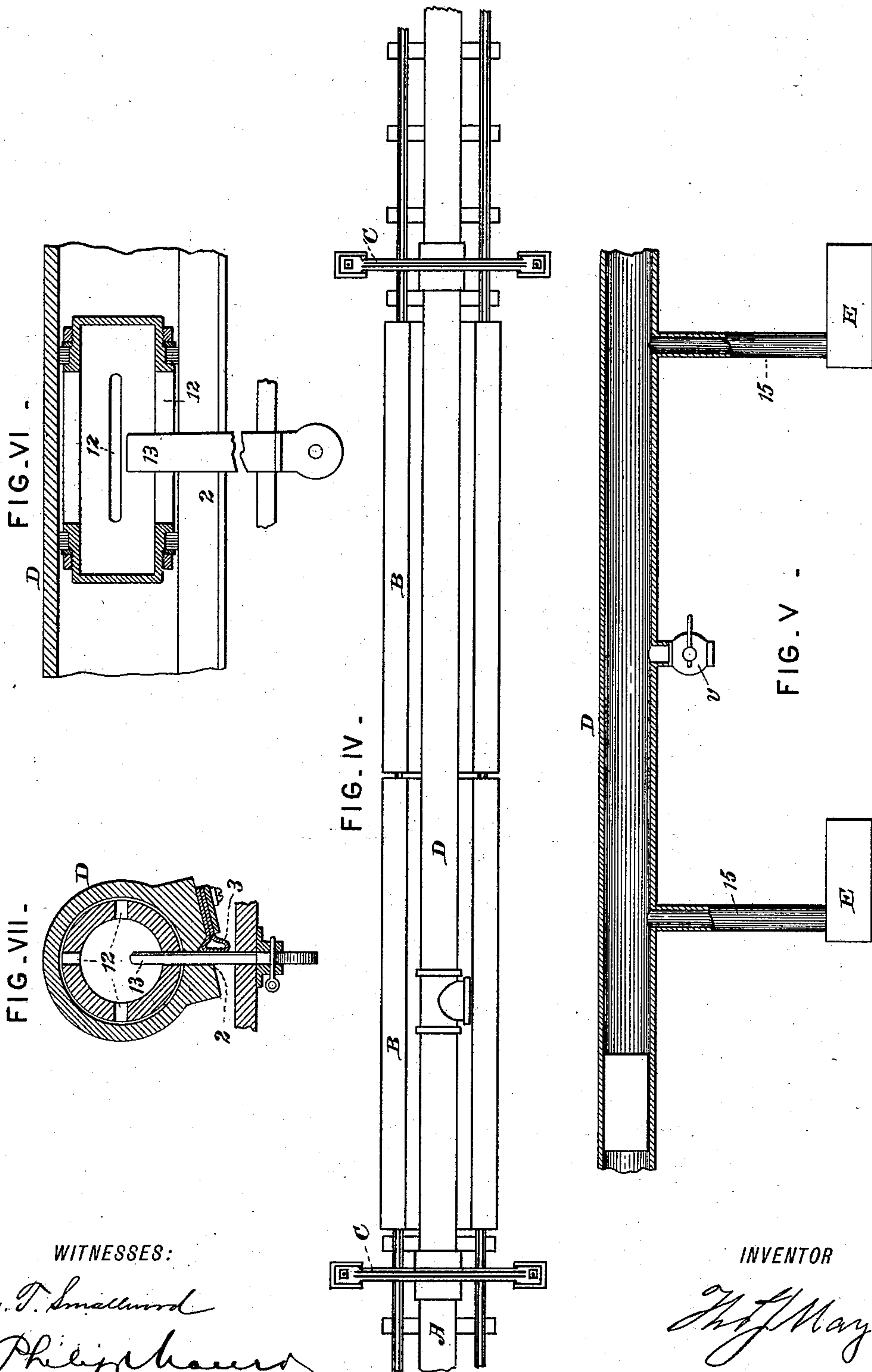
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(No Model.)

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FIG. VIII.

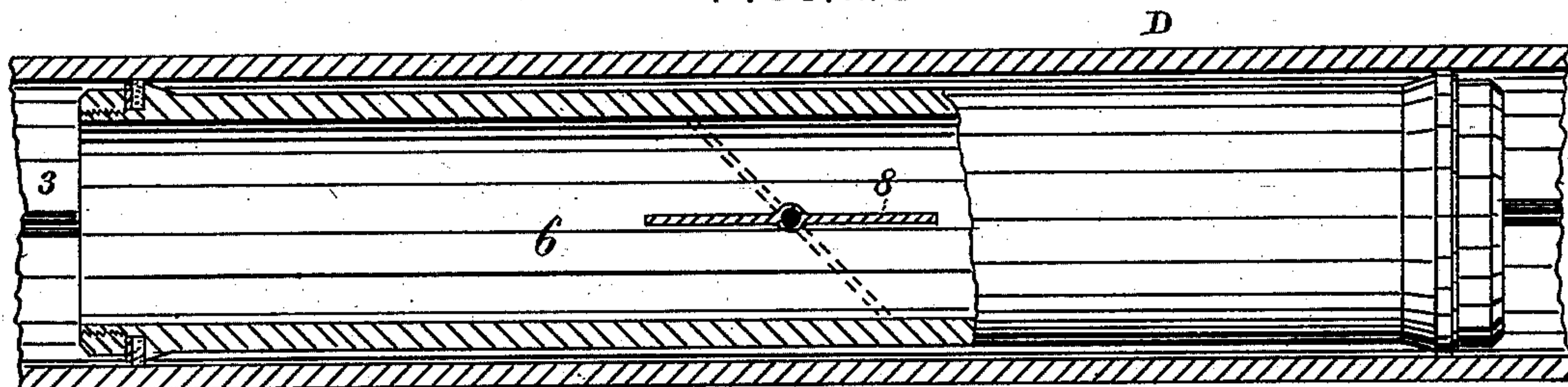


FIG. IX.

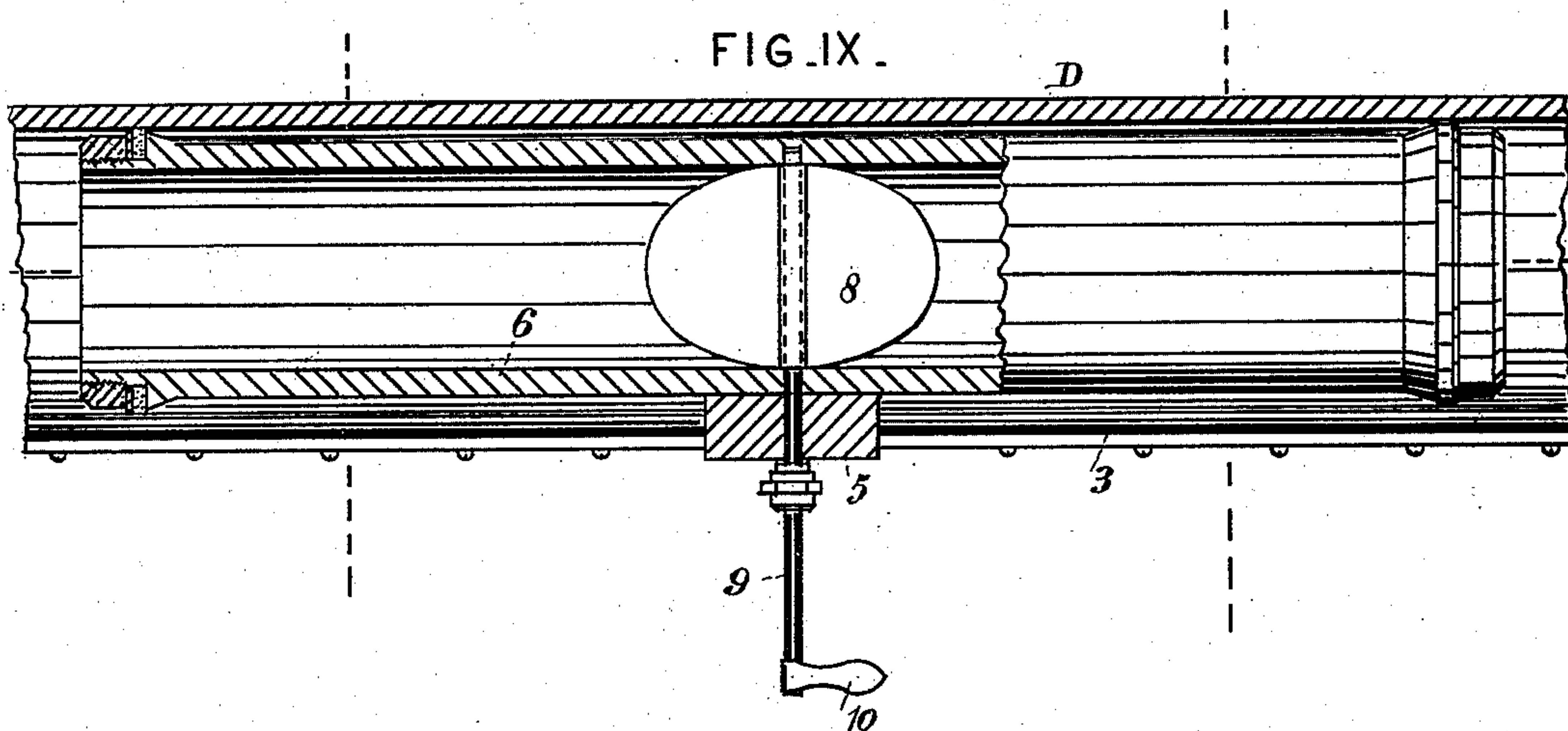


FIG. X.

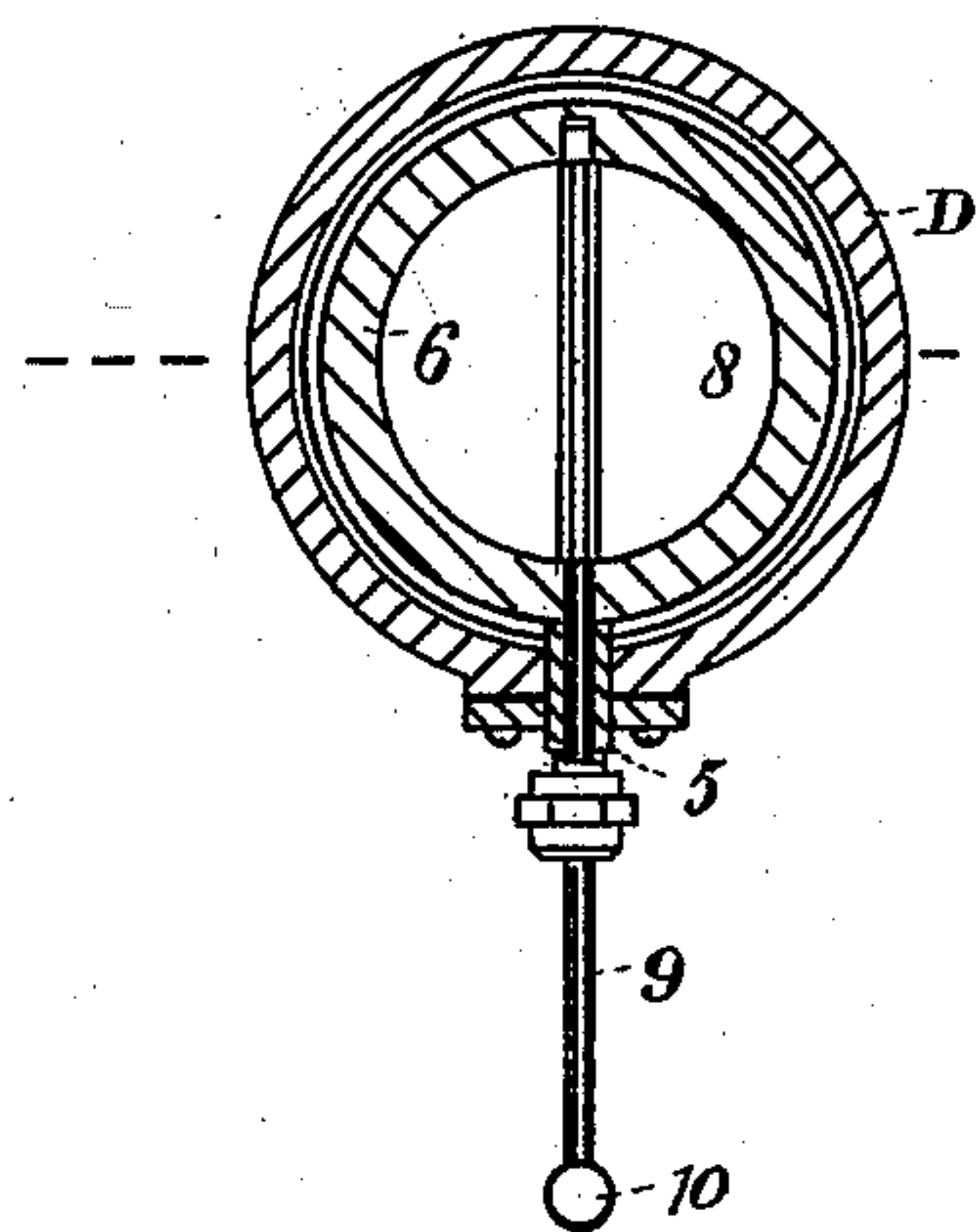
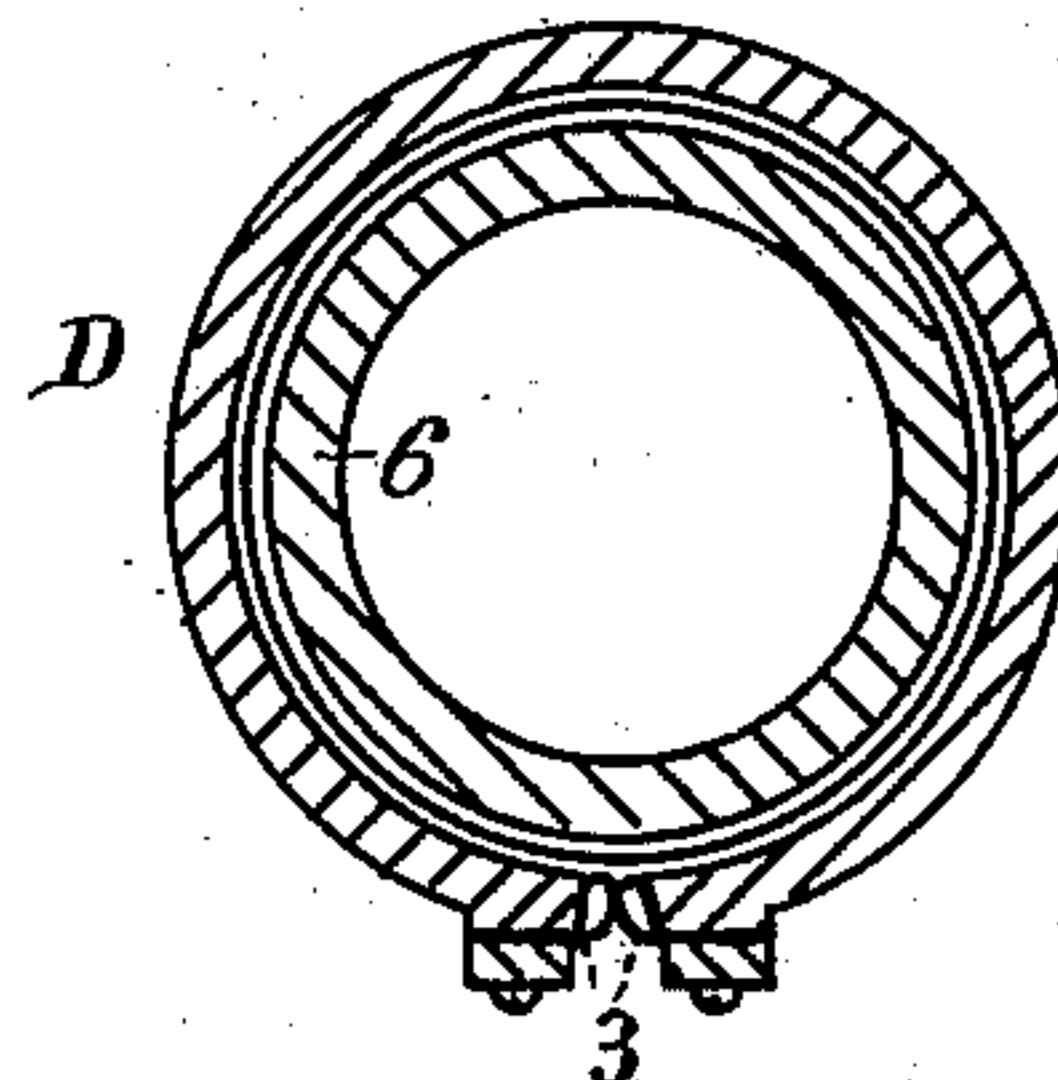


FIG. XII.



FIG. XI.



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# UNITED STATES PATENT OFFICE.

THOMAS J. MAYALL, OF READING, MASSACHUSETTS; LUCY A. MAYALL  
EXECUTRIX OF SAID THOMAS J. MAYALL, DECEASED.

## RAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 384,054, dated June 5, 1888.

Application filed June 23, 1887. Serial No. 242,307. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS J. MAYALL, of Reading, in the county of Middlesex and State of Massachusetts, have invented a new and  
5 useful Improvement in Railway Systems, which improvement is fully set forth in the following specification.

This invention has reference particularly to pneumatic-railway systems, and has for its ob-  
10 ject specially to adapt the ordinary surface roads to the use of air-pressure as the motive power. To this end the road-bed of ordinary construction is provided with a number of  
15 arches extending from one side of the track to the other. These arches support a pneumatic tube, and may also carry a series of electric wires in a suitable conduit. The tube has a slot extending its entire length, through which  
20 passes a coupling connecting the car with a carrier inside the tube. The slot is closed by a flexible packing of anti-friction material, as described in my application for improvements in pneumatic-railway systems, filed June 9, 1887,  
25 Serial No. 240,728. It is preferred, however, to have such a packing on each side of the slot, instead of on one side only, as the resistance opposed to the passage of the coupling rod or  
30 bar is thereby diminished. There are certain advantages attendant upon having the tube overhead instead of beneath the car. It is less liable to accident or injury, and the slot therein is underneath instead of on top, and therefore  
not exposed to the elements and not likely to become clogged with ice and snow.

35 The invention includes certain details of construction, as hereinafter set forth.

In the accompanying drawings, which form part of this specification, Figure I is a perspective view of cars and overhead tube; Fig.  
40 II, a side elevation; Fig. III, a cross-section, and Fig. IV a plan view of the same; Fig. V, a detail illustrating a valve and pumping-stations. Figs. VI and VII are details in longitudinal and cross-section of the tube and car-  
45 rier. Figs. VIII and IX are details in longitudinal section of a different form of tube and carrier; Figs. X and XI, cross-sections thereof; Fig. XII, a detail showing shape of coupler-  
bar.

A represents an ordinary road-bed, and B 50 railway-cars of ordinary construction. The arches C are placed at suitable intervals apart and carry at their top a pneumatic tube, D. The latter is formed on its under side with a slot, 2, extending its entire length. The slot 2 55 is normally closed by an elastic packing-tube, 3, of anti-friction material, (such as a compound of rubber, sulphite of antimony, oxide of iron, graphite, and powdered asbestos.) Preferably each edge of the slot 2 is provided with 60 such a packing, as shown in Fig. XI.

The coupler 5, which connects the bar B with the carrier 6, is brought to an edge in front and behind, as shown in Fig. XII, so that the packing-tubes 3 close tightly around it. 65

According to the construction shown in Figs. VIII, XI, the carrier 6 is provided with a pivoted valve, 8, worked by a rod, 9, terminating in a handle, 10. This valve can be closed tightly when it is desired to have the car go 70 ahead at full speed, or it can be opened more or less to diminish the speed, or to stop the car entirely.

As shown in Figs. VI and VII, the carrier 6 is permanently closed at each end. It is pro- 75 vided with a series of slots, 12, into any one of which the coupler 13 may be inserted. This coupler is removable. With this form of carrier it is necessary, in order to stop the car, to open the valves *v*, Fig. V, along the road, or 80 to withdraw the coupler 13.

The tube D is exhausted by means of a number of stationary pumps and engines, E, (see Fig. V,) located at proper intervals along the line of the railway. The arches C may also 85 be utilized for carrying electric conductors for driving the cars by electricity in case of failure of the pneumatic pressure.

It is obvious that some of the improvements described could be used without others and 90 that modifications could be made in the details of construction without departing from the spirit of the invention.

Having now fully described my said invention, what I claim, and desire to secure by Let- 95 ters Patent, is—

1. The combination, with the surface road-bed of ordinary construction and the cars

adapted to run thereon, of the arches spanning said road, the pneumatic tube carried by said arches, carriers within said tubes, and connections between said carriers and cars, 5 substantially as described.

2. The combination, with the road-bed and arches spanning the same, of the pneumatic tube carried thereby and having a slot on its under side extending the entire length of said 10 tube, and a flexible packing of anti-friction material for closing said slot, substantially as described.

3. The combination, with the pneumatic tube having a longitudinal slot, of the packing-

tubes of anti-friction material, one on each edge 15 of said slot, substantially as described.

4. The combination of the road-bed car, pneumatic tube having a slot, slotted carrier within said tube, and a coupler detachably 20 connecting said car and carrier, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOS. J. MAYALL.

Witnesses:

PHILIP MAURO,  
C. J. HEDRICK.