(No Model.) 3 Sheets—Sheet 1.

F. E. DROWN.

SUSPENDED ELECTRIC RAILWAY AND CAR.

No. 431,256. Patented July 1, 1890.

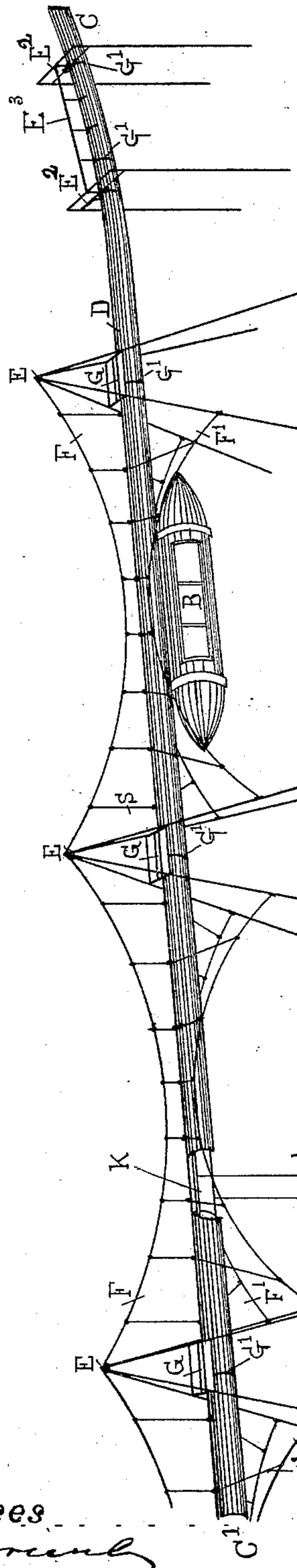

FIG 1

FIG 2

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(No Model.) 3 Sheets—Sheet 2.

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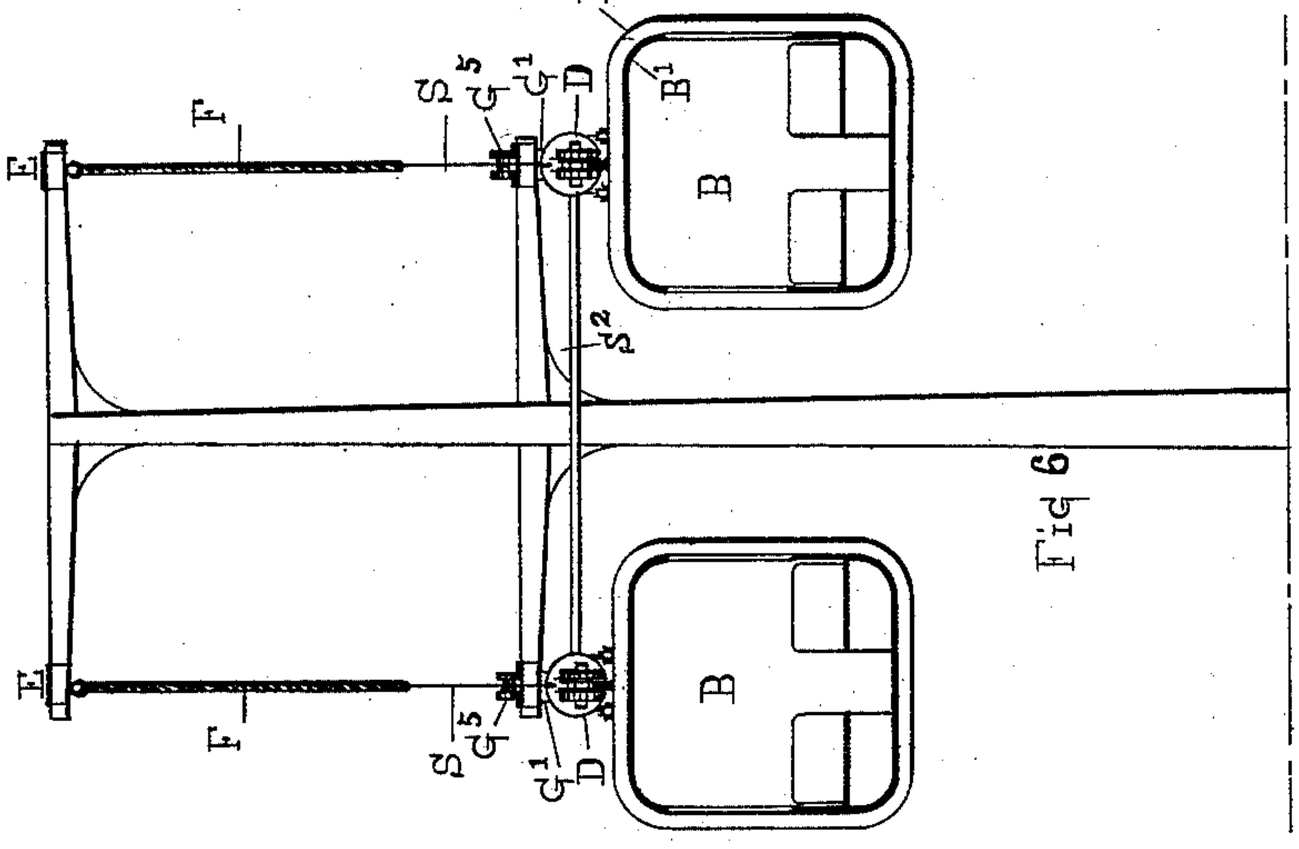

Fig 6

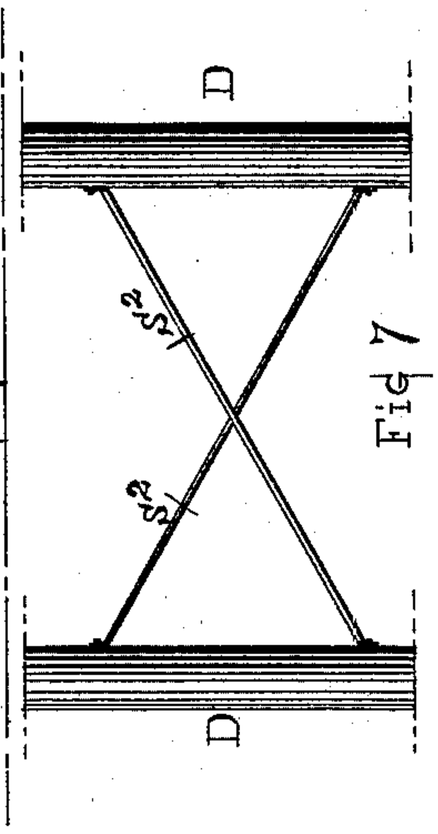

Fig 7

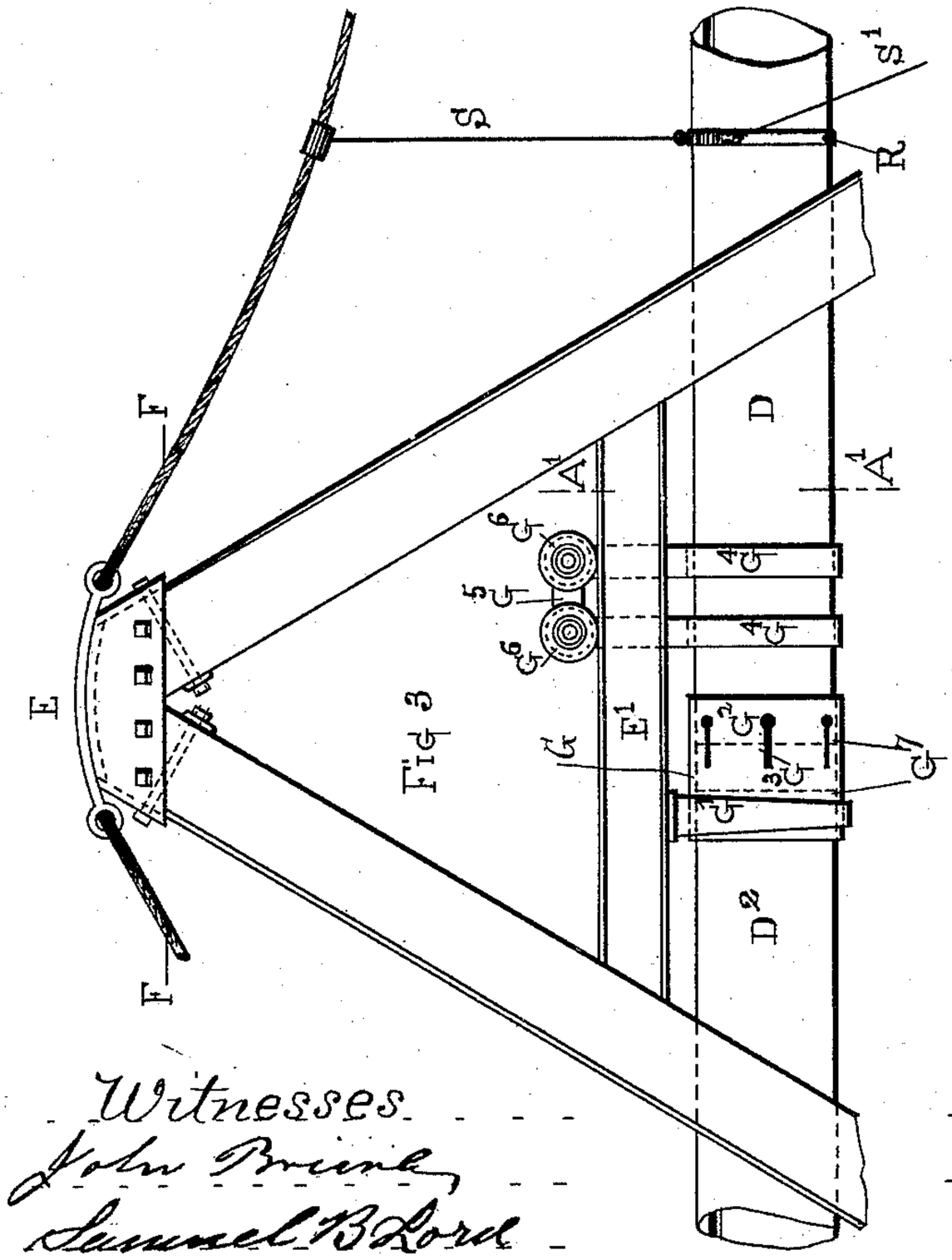

Fig 3

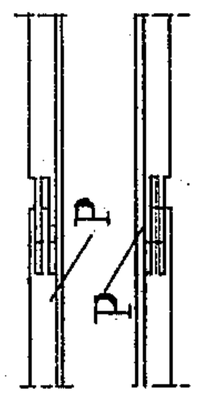

Fig 5

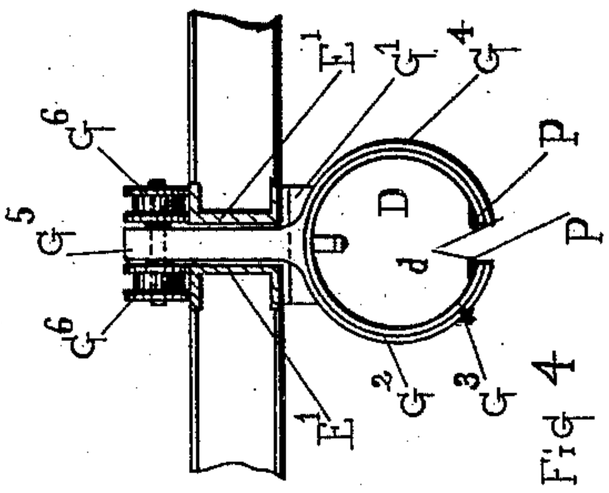

Fig 4

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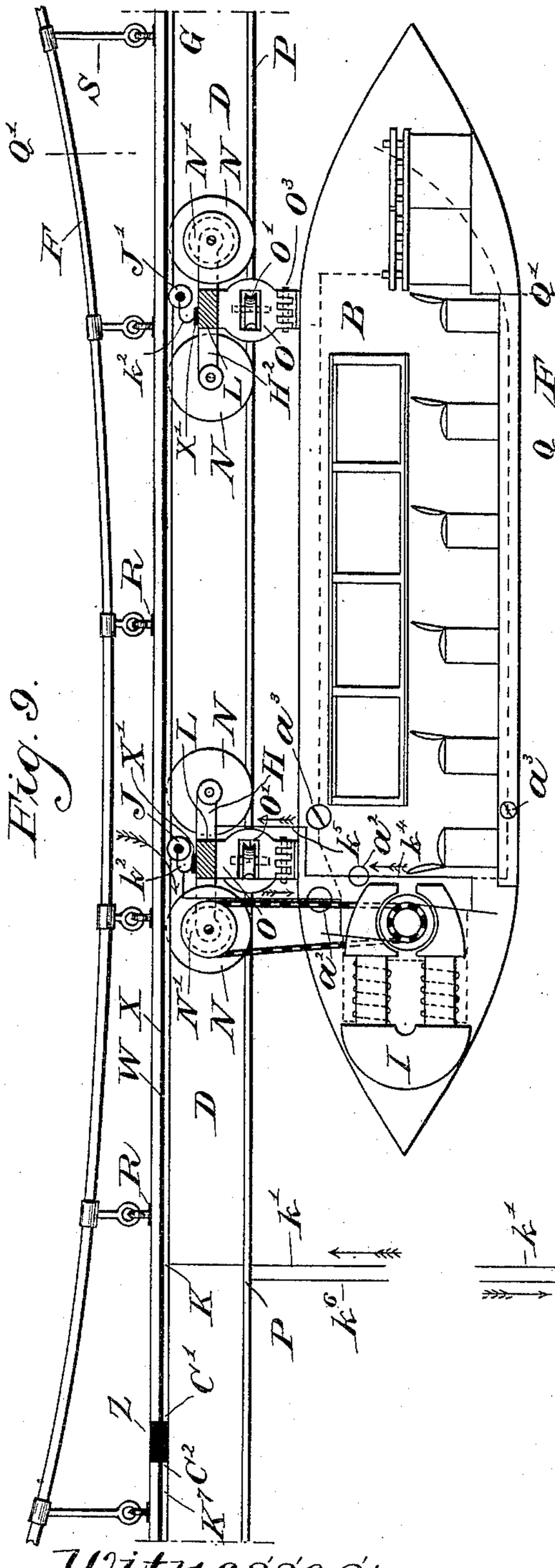

Fig. 9.

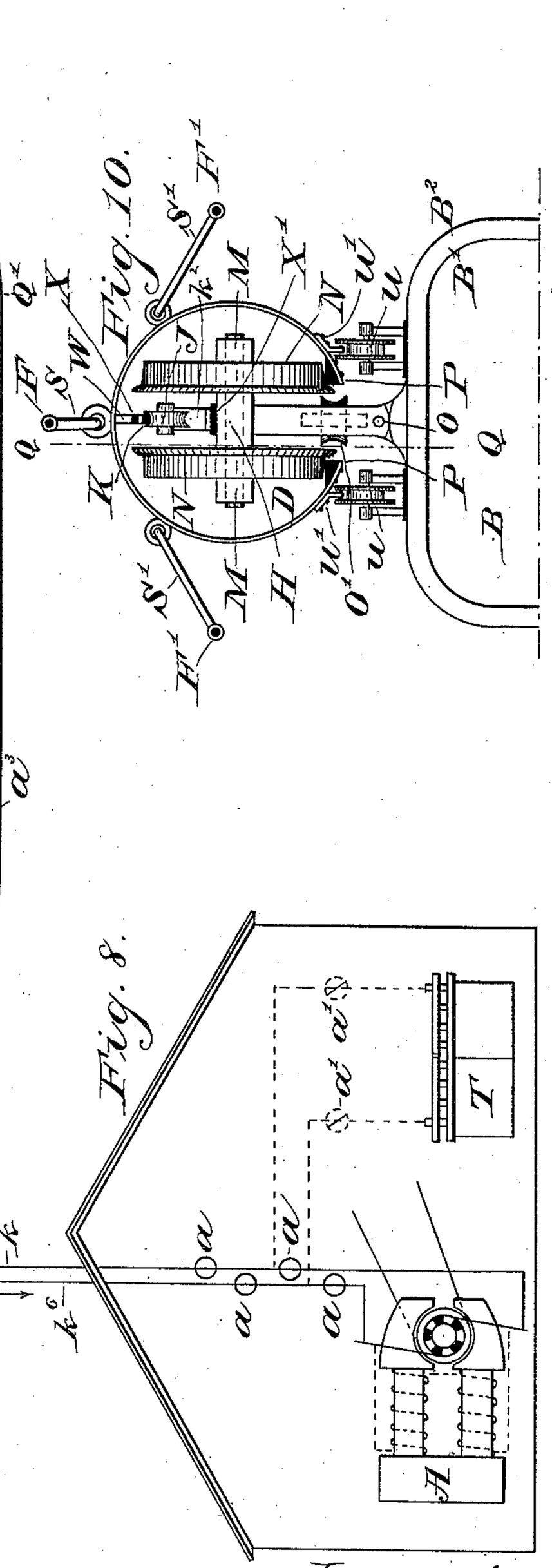

Fig. 10.

Fig. 8.

Witnesses:

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UNITED STATES PATENT OFFICE.

FREDERICK EUGENE DROWN, OF PAWTUCKET, RHODE ISLAND.

SUSPENDED ELECTRIC RAILWAY AND CAR.

SPECIFICATION forming part of Letters Patent No. 431,256, dated July 1, 1890.

Application filed April 6, 1889. Serial No. 306,217. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK EUGENE DROWN, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and useful Suspended Electric Railway and Car, of which the following is a specification.

My invention relates to a car suspended from trucks which have wheels and axles, the trucks running in a tube having in its bottom side a longitudinal opening or slot extending from end to end, through which the hangers extend that connect the car with the truck, and driven by an electric motor, the electric motor driven by electro-motive force generated at stations placed at convenient distances along the line of the suspended railway. The electric motor takes the electric current from a stationary fixed electric conductor extending parallel with the slotted tube, and insulated from same. The slotted tube is suspended by a system of cables, ties, and hangers, substantially fixed to suitable supporting structures.

The object of my invention is to provide machinery for the quick transportation from place to place of passengers, mail, and freight, whereby it will not be necessary to follow so closely the level contour of the country, thus avoiding deep cuts and fillings and expensive bridges; to provide safe and durable machinery which will not be seriously affected by any average climate or conditions of weather. I attain these objects by the machinery illustrated in the accompanying drawings, in which similar letters refer to similar parts.

Figure 1, a perspective view embracing one section of the machinery from C to C′; Fig. 2, the permanent station; Fig. 3, enlarged elevation of support E and expansion device G; Fig. 4, vertical section of expansion device G on line A′, Fig. 3; Fig. 5, plan of rails P, illustrating the dovetail-joint at expansion device G; Fig. 6, transverse vertical section of suspended electric railway and car, illustrating a modification of same, in which a double suspended railway and car are attached to a supporting structure E; Fig. 7, a plan of slotted tubes D, illustrating the horizontal struts and ties S^2, fixed to slotted tubes D; Fig. 8, enlarged view of permanent station; Fig. 9 longitudinal vertical section of the suspended electric railway and car on line Q, Fig. 10; Fig. 10, transverse vertical section of the suspended electric railway and car on line Q′, Fig. 9.

I describe my invention as follows, reference being had to the aforesaid drawings.

The dynamo A generates the electro-motive force, which is transmitted by electric conductor *k′* to the main electric conductor K, extending parallel with and insulated from the slotted tube D from C to C′, representing a distance of ten miles, more or less.

In operating, the suspended car B is passed along the suspended railway from one section C to C′ to the next adjoining section by electric conducting-wheel J, being in contact with electric conductor K, thus diverting the electric current through the electric motor I fixed to car B. After performing work in electric motor I the electric current passes out through electric conductors K^4 and K^5 to the truck H, thence by slotted tube D and electric conductor K^6 to electric generator A. I prefer to make the tube D of iron or steel, either in pieces or in sections, strengthened at P by longitudinal pieces for the wheels N of truck H to run on, and when necessary or when desirable further strengthened by transverse bands R, to which the ties S and S′ can be attached.

When the suspended-electric-railway system is arranged for the purpose of conveying a small car containing light materials, or when the supports E are in close supporting distance, as at E^2 and E^3, Fig. 1, the bands R, and in some cases the rails P, can be dispensed with; then the hangers G′ are sufficient.

When the supports E are more than a supporting distance apart, as at E, Fig. 1, I use a deflecting cable F, supporting slotted tube D, with ties S and storm-cables F′, connected to the slotted tube D with ties S′. At G the slotted tube is secured and arranged for the longitudinal expansion illustrated in Fig. 3. The broad band G^2 is fixed to the slotted tube D^2 and firmly fixed to hanger G′, which is supported at E′. The slotted tube D is arranged to slide in band G^2. The space at G^7 between the slotted tube D and D^2 shows the

amount of space. When slotted tubes D and D^2 are at limit of contraction the sliding bolt G^3 holds the slotted tube D in position. The slotted tube D is further supported and arranged to move freely by transverse bands G^4 fixed to truck G^5, having wheels G^6, which run on supports E. In the space G^7, between slotted tubes D and D^2, the rails P, Fig. 5, are dovetailed together.

I carry out my invention by placing the truck H, which has a frame L, bearings M, and wheels N, and a hanger O, to which the car B is attached, in the interior of slotted tube D, with its wheels N, having a conical face and flange, running on the edge of the slot *d* in tube D, or on rails P, which are fixed to tube D.

In the system of suspended electric railway and car illustrated in Fig. 9, I prefer to place the electric motor I in car B and connect it by driving-bands N^2 with the driven pulley N′, which is attached to wheels N of the truck H.

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

1. In a suspended-electric-railway system, the railway-track consisting of a tube D, suspended from deflected cable F by ties S, the said tube D having in its bottom side a longitudinal opening, slot *d*, extending from end to end, as set forth.

2. The tube D, suspended from deflected cable F by ties S, the said tube D having in its bottom side a longitudinal opening, slot *d*, extending from end to end, and the longinal rails P, fixed to the tube D, as set forth.

3. The tube D, having in its bottom side a longitudinal opening, slot *d*, extending from end to end, and the transverse bands R, fixed to tube D, as set forth.

4. The tube D, having in its bottom side a longitudinal opening, slot *d*, extending from end to end, and the expansion device G, fixed to tube D, and support E′, as set forth.

5. The tube D, having in its bottom side a longitudinal opening, slot *d*, extending from end to end, and the band G′, fixed to support E′ and E^2, and to the tube D, as set forth.

6. The tube D, having in its bottom side a longitudinal opening, slot *d*, extending from end to end, and the supports E, supporting deflecting cable F, the deflecting cable F, having ties S, fixed to said cable F, and the tube D, as set forth.

7. The tube D, having in its bottom side a longitudinal opening, slot *d*, extending from end to end, and the storm-cable F′, having ties S′, fixed to said cable F′, and the tube D, as set forth.

8. The tube D, suspended from deflected cable F by ties S, the said tube D having in its bottom side a longitudinal opening, slot *d*, extending from end to end, and the truck H in the interior of tube D, having a frame L, bearings M, and wheels N, as set forth.

9. The tube D, having in its bottom side a longitudinal opening, slot *d*, extending from end to end, the truck H, running in the interior of tube D, having wheels N, bearings M, and frame L, and the suspended car B, having a hanger O, extending through the slot *d* in tube D, fixed to said car B, and the truck H, as set forth.

10. The tube D, having in its bottom side a longitudinal opening, slot *d*, extending from end to end, the electric conductor K, fixed to the said tube D and insulated from same, the electric generator A, connected to electric conductor K, as set forth.

11. The suspended tube D, having a slot *d* in its bottom side extending from end to end, the truck H, running in the interior of said tube, having wheels N, arranged in pairs fixed to axles, having bearings M, and a frame L, with a hanger O, extending downward through the slot *d* and attached to car B, as set forth.

12. The tube D, having in its bottom side a longitudinal opening, slot *d*, extending from end to end, the truck H in the interior of tube D, the car B, suspended from truck H by hangers O, the electric motor in car B, and the electric conducting-wheel J, connecting motor I with electric conductor K, as set forth.

13. The tube D, having in its bottom side a longitudinal opening, slot *d*, extending from end to end, the truck H in the interior of tube D, the car B, suspended from truck H by hangers O, the electric motor I, and the driving-connection between the said motor I and the wheels N of truck H, as set forth.

14. In a suspended-railway system, the suspended tube D, having in its bottom side a longitudinal opening, slot *d*, extending from end to end, and the ties S^2, fixed to the tube D, as set forth.

15. The suspended tube D, having a slot *d* in its bottom side extending from end to end, the truck H, running in the interior of said tube D, having wheels N arranged in pairs fixed to axles having bearings M, and a frame L, with a hanger O, extending downward through the slot *d* and attached to car B, the the said wheels N having a conical face with a flange on the inner edge, as set forth.

FREDERICK EUGENE DROWN.

Witnesses:
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