(No Model.) 2 Sheets—Sheet 1.

A. P. INGERSON.

ELEVATED RAILWAY.

No. 258,302. Patented May 23, 1882.

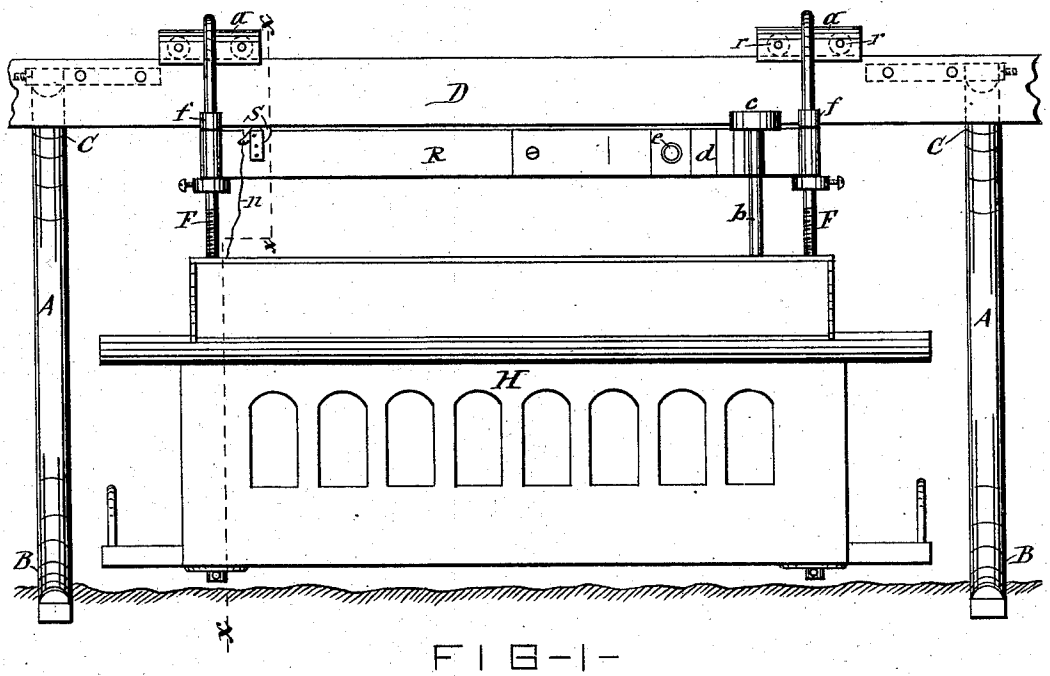


FIG-1-

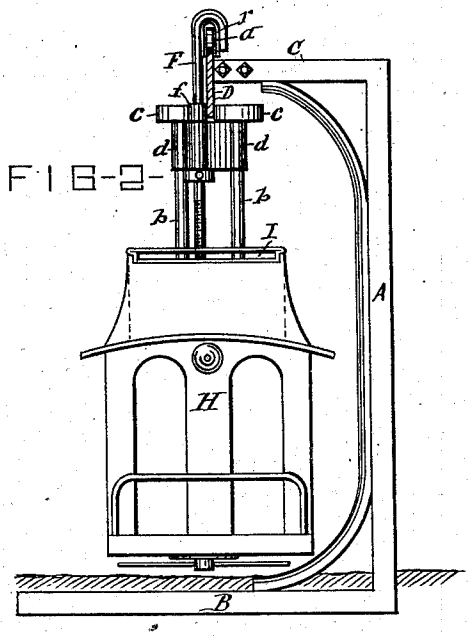


FIG-2-

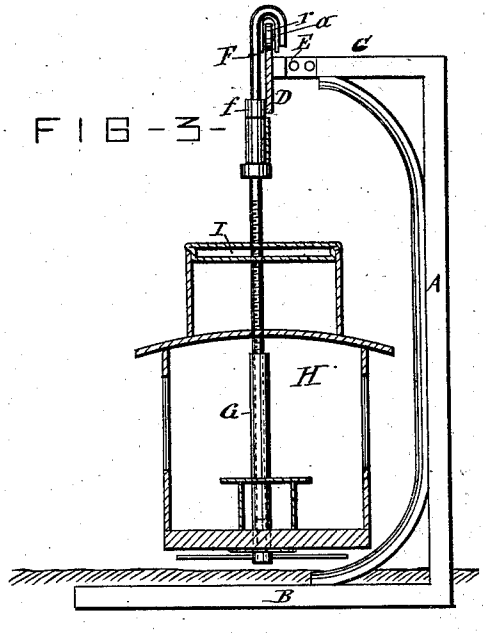


FIG-3-

WITNESSES=

Wm. L. Raymond.

C. H. Duell

INVENTOR=

Albert P. Ingerson

per Dudley, Lawrence & Hoy

his Attys.

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

(No Model.) 2 Sheets—Sheet 2.

A. P. INGERSON.

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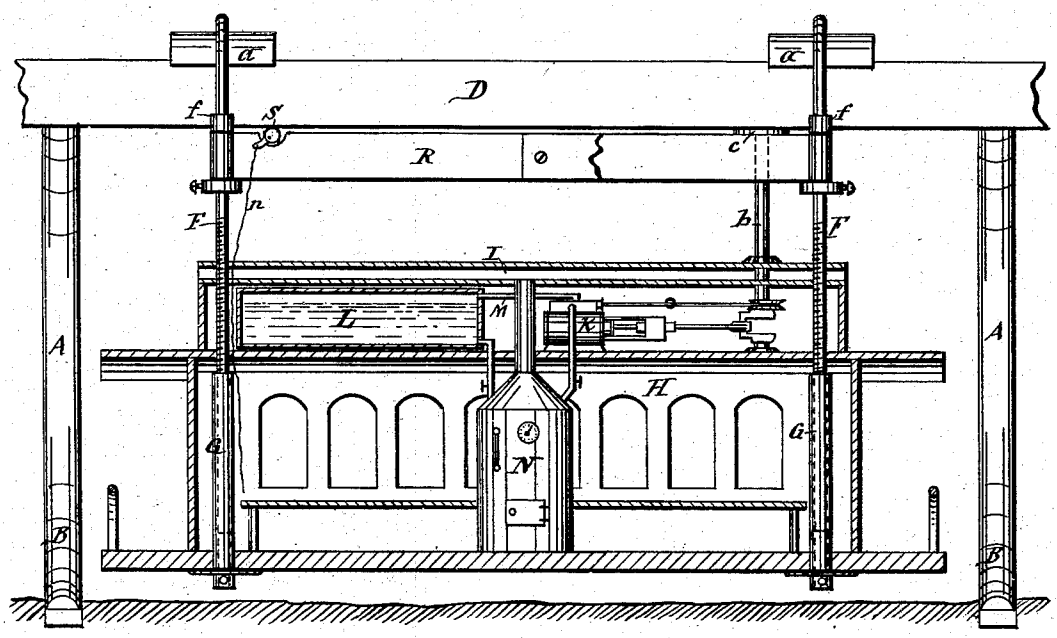


FIG-4-

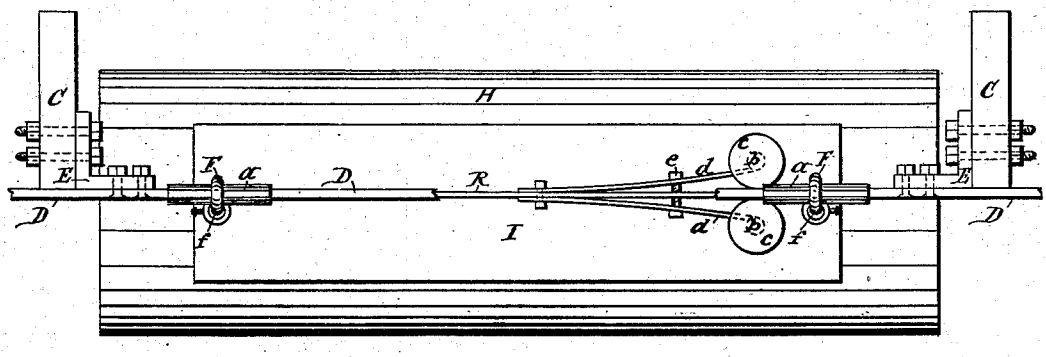


FIG-5-

WITNESSES=

Wm. L. Raymond

C. H. Duell

INVENTOR=

Albert P. Ingerson

per Dodd, Laass & Hey

his attys

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

UNITED STATES PATENT OFFICE.

ALBERT P. INGERSON, OF ELBRIDGE, NEW YORK.

ELEVATED RAILWAY.

SPECIFICATION forming part of Letters Patent No. 258,302, dated May 23, 1882.

Application filed August 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALBERT P. INGERSON, of Elbridge, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Elevated Railways, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to an improved system of elevated railways, designed to avoid the inconveniences, dangers, and impediments to the traffic of streets and highways incident to the laying of tracks upon the same, and at the same time afford to its passengers greater safety than ordinary elevated roads.

The invention also relates to the novel construction of a car specially designed for the aforesaid new system of elevated roads.

The invention is fully illustrated in the annexed drawings, where Figure 1 is a side elevation of the elevated road and its car. Fig. 2 is an end view of the same; Fig. 3, a vertical transverse section on line *x x;* Fig. 4, a longitudinal section, and Fig. 5 a top view.

Similar letters of reference indicate corresponding parts.

A A are standards, preferably of iron or steel, and provided at the base with a laterally-extended foot, B, of sufficient length to afford a bearing which sustains the standard in its upright position. The top of the standard A has a rigid arm, C, extended in the same direction as the foot B and supporting the track-rail D, which consists of plain strap-iron or steel placed edgewise and bolted or riveted to L-shaped corner-braces E, firmly secured to the arm C. In places where the track-rail has to span long distances it is to be supported at intermediate points by a suitable truss extended from standard to standard. Upon the tops of the track-rail D are mounted rollers or wheels *r r*, preferably in pairs, as shown in the drawings, each pair being journaled to a solid plate or frame, *a*, which is extended over the said rollers, so as to form a housing for the protection of the same against snow and ice. The track-rail, being placed edgewise and devoid of flanges and other side projections, is also free from the liability of becoming blocked by deposit of snow and ice on the same. Upon the housing *a* is hung the suspension-rod F, which carries on its lower end the car H, at a suitable elevation to clear all obstructions on the ground or pavement, and at the same time afford convenient access to the car.

In order to avoid the necessity of shoveling snow to clear the way for the car, I render the car adjustable in its elevation above the ground by providing the lower extremity of the suspension-rod with screw-threads and passing the same into a female-threaded sleeve, G, which is secured to the car in such a manner as to allow said sleeve to be turned, and by its engagement with the screw-threaded end of the suspension-rod F raise or lower the car, as may be desired. The suspended car is prevented from lateral vibration by a friction-roller, *f*, on the suspension-rod F, bearing on the side of the track-rail D.

K represents a steam-engine, and L the feed-water tank for said engine, both of which are located on top of the suspended car H. The steam is derived from a boiler, N, located in a convenient and suitable position in the car, and the exhaust-steam is conducted from the engine to the water-tank L by the exhaust-pipe M, extended to said tank, thereby condensing said steam and converting it into feed-water, to be used again in the boiler, and at the same time avoiding the noise incident to the discharge of steam into the air. Over the engine K and tank L is a horizontal flue, I, extended the length of the car and open at both ends. This flue communicates with the smoke-flue of the boiler and discharges the products of combustion at either end of the car, according to the draft imparted to said flue by the movement of the car.

b b represent two vertical shafts journaled in suitable bearings on the car, and having secured to their upper extremity friction-wheels *c c*, which bear respectively against opposite sides of the track-rail D. By a suitable connection between the engine K and the shafts *b b* the latter receive a rotary motion, and by the hold of their friction-wheels *c c* on the track-rail propel the car, thus dispensing with the use of extra ropes or bands heretofore extended the length of the road and engaged by grooved propelling-wheels connected with the suspended car. The upper end of the shafts *b* is sustained by a spring-plate, *d*, which is se-

cured at one end to a stout bar, R, extended from one suspension-rod to the other, the free end of said spring-plate embracing the shaft *b* and pressing the same toward the side of the track-rail with the requisite force to obtain the necessary frictional hold of the wheel *c* on the rail D. The pressure of the wheel *c* on the track-rail D can be adjusted by a set-screw, *e*, passing through the two spring-plates *d d* and through the bar R, and provided with a nut at either end, by means of which the spring-plates can be drawn toward each other.

The fuel for the boiler may be carried in boxes formed under the seats in the car.

S denotes the brake, which I design to make in the form of an eccentric or cam, pivoted on the bar R on top of the car in such a manner as to allow it to be brought to bear on the track-rail D. A rod or cord, *n*, connected with said brake and extended to a convenient point in the car, affords the necessary control of said brake.

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

1. In combination with the elevated rail D and rollers *r*, the suspension-rod F, screw-threaded at its lower end, and the female-threaded sleeve G, connected respectively with said rod and with the car, as described and shown.

2. The combination of the car H, suspended centrally from the elevated track-rail D, and propelled by frictional contact of the wheels *c* directly with said track-rail, substantially as described and shown.

3. In combination with the elevated rail D and the car H, suspended therefrom, as shown, and carrying a suitable motor, the shafts *b b*, connected with the car and its motor, and having friction-wheels *c c*, engaging opposite sides of the track-rail and maintained yieldingly in contact therewith by spring-plates *d*, as described, for the purpose set forth.

4. In combination with the elevated rail D, suspended car H, and the shafts *b b*, provided with friction-wheels *c*, the spring-plates *d*, arranged to hold the friction-wheels yieldingly against the track-rail, and provided with the adjusting-screw *e*, substantially as described and shown.

5. In combination with the elevated rail D and the car H, suspended therefrom, as shown, a brake connected to the top of the car and adapted to engage the rail D, as and for the purpose set forth.

6. The combination, with the car H, of the engine K, tank L, exhaust-pipe M, leading to said tank, and the horizontal flue I, all arranged upon the top of the car, substantially as described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 3d day of August, 1881.

ALBERT P. INGERSON. [L.S.]

Witnesses:
WM. C. RAYMOND,
C. H. DUELL.