(No Model.) 3 Sheets—Sheet 1.

A. BRYSON, Jr. & C. TIERS.

PORTABLE RAILWAY.

No. 421,813. Patented Feb. 18, 1890.

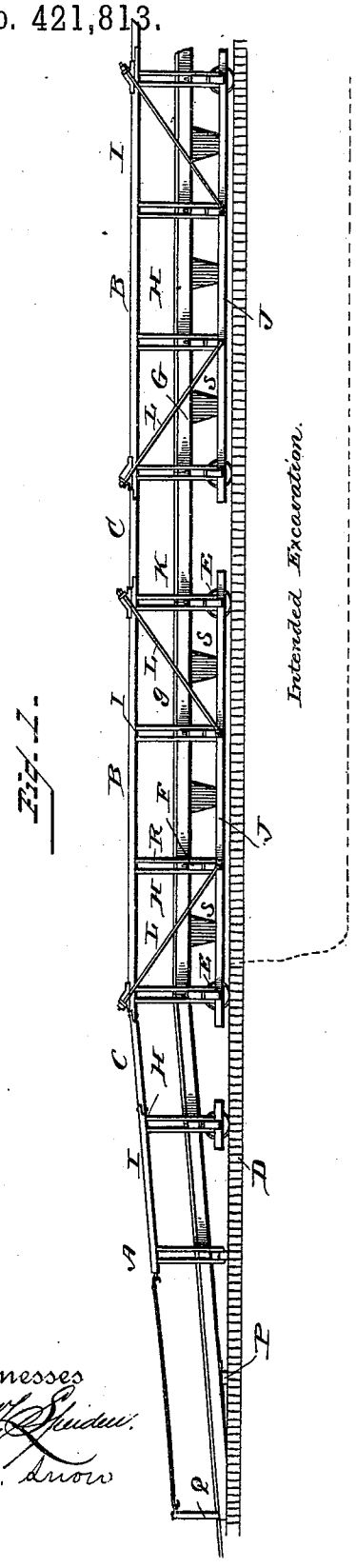


Fig. 1.

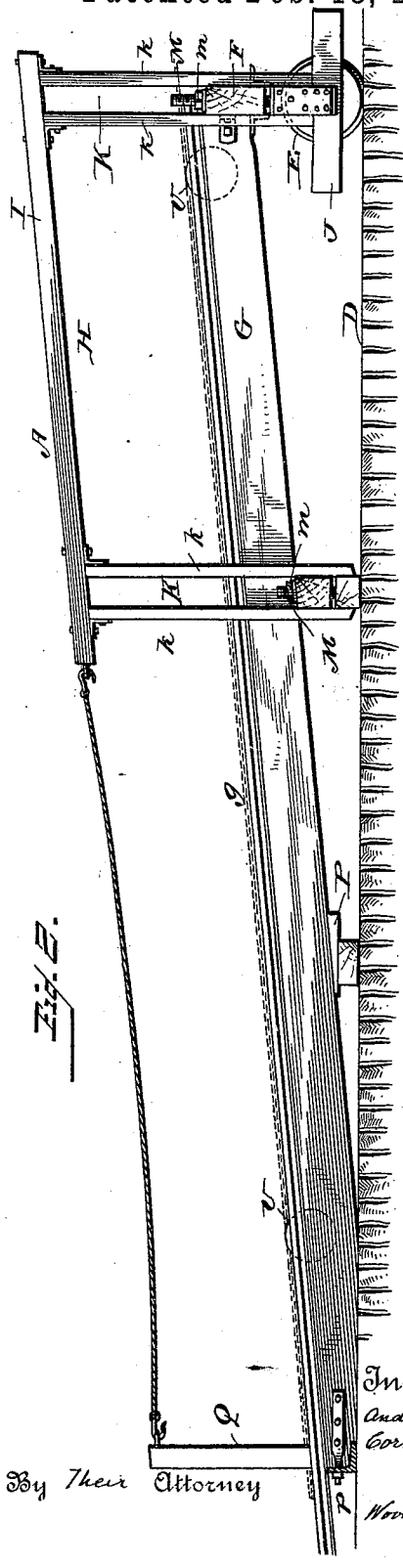


Fig. 2.

Witnesses
Wm. F. Gardner.
H. S. Snow

Inventors
Andrew Bryson Jr.
Cornelius Tiers

By Their Attorney
Woodbury Lovery

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

(No Model.) 3 Sheets—Sheet 2.

A. BRYSON, Jr. & C. TIERS

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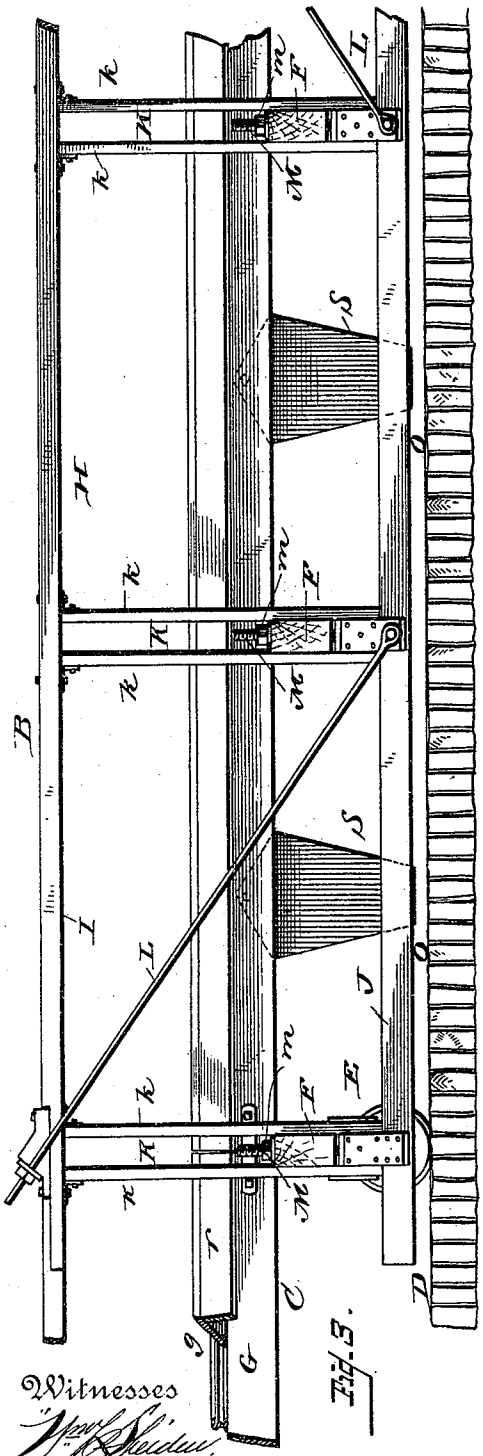


Fig. 3.

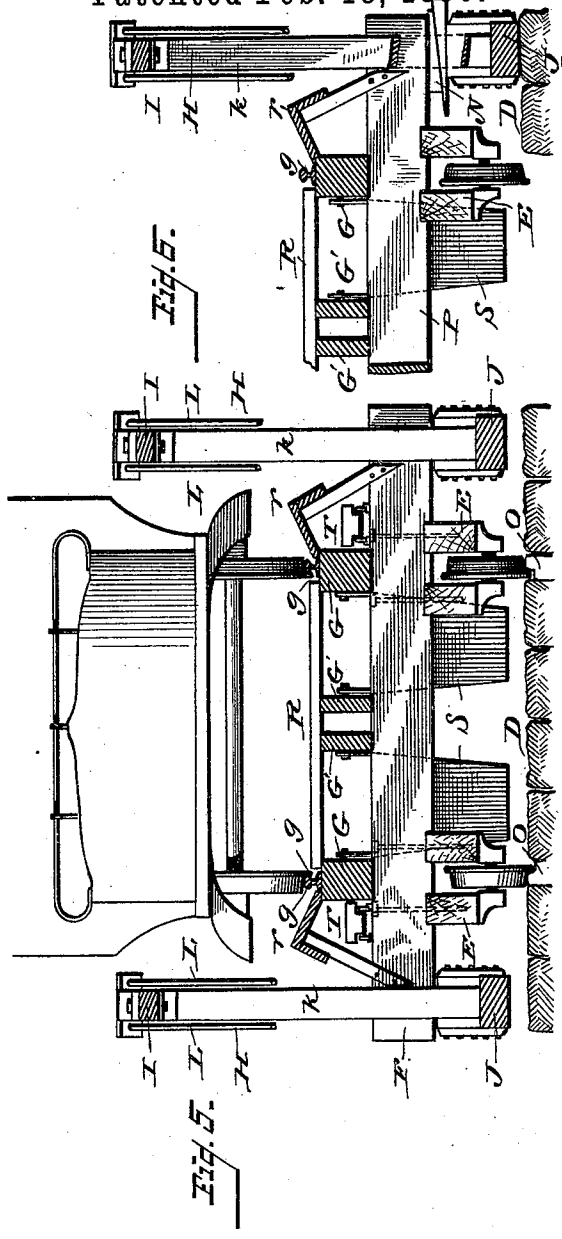


Fig. 5.

Witnesses
W. B. Sheldon
H. S. Snow.

Inventors
Andrew Bryson Jr.
Cornelius Tiers
By their Attorney Woodbury Lowery

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

(No Model.) 3 Sheets—Sheet 3.

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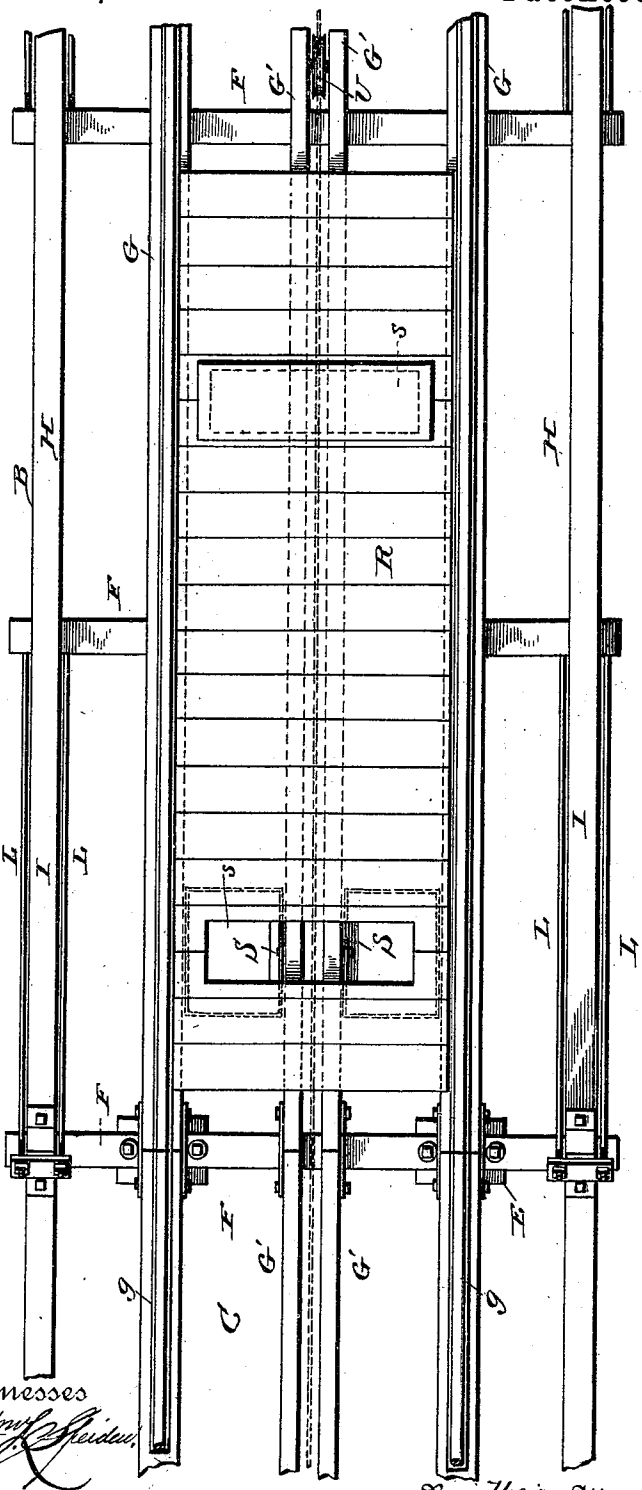


Fig. 4.

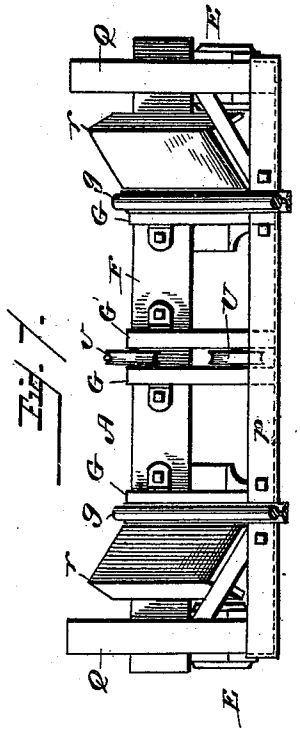


Fig. 7.

Witnesses
W. L. Sheidow.
H. A. Drown.

Inventors
Andrew Bryson Jr.
Cornelius Tiers
By Their Attorney Woodbury Lowery

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

UNITED STATES PATENT OFFICE.

ANDREW BRYSON, JR., AND CORNELIUS TIERS, OF NEW YORK, N. Y.

PORTABLE RAILWAY.

SPECIFICATION forming part of Letters Patent No. 421,813, dated February 18, 1890.

Application filed December 4, 1889. Serial No. 332,508. (No model.)

To all whom it may concern:

Be it known that we, ANDREW BRYSON, Jr., and CORNELIUS TIERS, citizens of the United States, residing at New York city, county of New York, State of New York, have invented new and useful Improvements in Portable Railways, of which the following is a specification.

When excavations are to be made under or between tracks in crowded thoroughfares, as is necessary in cable or other street railway systems requiring a conduit, the obstruction to traffic caused by the ordinary means of construction is exceedingly great and annoying, blockades of cars and other vehicles are constantly occurring, and the expense of construction is materially increased by interference and delays.

To obviate these disadvantages we have devised a movable elevated way or track upon which cars may pass at all times without interfering with the work going on below them; and our invention consists in a railway or track mounted on wheels, by means of which it can be transported, and provided with lateral adjustable trusses or supports, portable with the track, and on which, when in the desired locality, the track and truck can be raised to and maintained at any required height above the surface of the street, leaving a sufficient space between the trusses and under the track for all necessary excavations or repairs. We construct the way in suitable lengths or sections, each of which is self-supporting and movable, and we provide at each end of a section, or at the ends of a series of sections, an inclined approach from the surface of the street. In this way any desired number of sections may be connected together. After the work beneath the track has been finished the sections are uncoupled, the track is lowered onto its wheels, and the sections are removed to where needed, by horses or other suitable means, at night or any other time, preferably when the traffic may be sufficiently light to allow of it.

In the accompanying drawings, which illustrate our invention, Figure 1 is a side view of an approach and two sections coupled together prior to the elevation of the track above an intended excavation. Fig. 2 is an enlarged side view, partly broken away, of an approach. Fig. 3 is a side view, and Fig. 4 a plan view, of one of the sections. Fig. 5 is a view in cross-section through one of the track-sections, showing the rear of a car passing over the same. Fig. 6 shows the method of elevating and supporting the track, and Fig. 7 is an end view of an approach from the surface of the street.

A, Fig. 1, is the approach.

B B are sections, and C C are connecting bridges or platforms between the sections, which are removed when the latter are disconnected.

D is the street-surface.

Each section B consists of a truck E, upon which rest the cross-pieces F F, which in turn support the string-pieces G G′, with their rails *g g*, and the vertically-adjustable trusses H H. The truck E, the cross-pieces F F, and the rail-stringers are all rigidly secured together in such wise that by lifting the ends of the cross-pieces F F the truck, with its wheels and the railway above it, are raised together out of contact with the surface of the street.

Each truss H consists of a truss-beam I, a sill J, and the vertical posts K, the whole being rigidly and firmly bound together and provided with suitable braces L L.

In order to support the trusses H from the cross-pieces F in transportation and to raise and lower the truck and its track on the trusses when in place, we construct the posts K in the form of two small posts *k k*, through which the ends of the cross-pieces F project. The trusses H are then suspended from the latter by means of a bolt M, passing through the sill J and the heads of the cross-pieces F and held together by a bolt-nut *m*.

In order to raise the track upon the trusses H, the section B having been carried to its intended location, the trusses are disconnected from the cross-pieces F by removing the nut. The sill J then drops down and rests upon the surface D of the street, and the truck and track are raised by means of wedges N N, Fig. 6, driven home between the sill and the heads of the cross-pieces F, the latter being retained in place and rising vertically between the guide-posts *k k*, thus bringing the weight of the track and truck upon the sills

and lifting the wheels from the surface track O O. The approach A, which is made as short as possible, is of similar construction, with the exception that the truck E extends only under one end of the string-pieces G G′, the other end of the string-pieces resting upon the surface to form a connection with the surface-track O O. The truss H also extends only part way under the end of the track which connects with the section B, as that end only requires to be raised, the lower portion of the approach being supported by a block and wedge, as shown at P, when necessary.

In place of the usual cross-piece F, the string-pieces of the surface end of the approach A are bolted to an iron cross-piece *p* of the same length, and having two vertical posts Q Q at its heads to serve as guards.

In order to transport the approach, two wheels mounted upon a suitable axle may be run under its surface end, the string-piece resting upon it, and the entire approach thus carried on the truck E and the surface end wheels.

Thus far we have described what we consider the essential elements of our invention—namely, an approach and a movable section having an adjustable truss. Where, however, it is desirable to lengthen the track, we provide a connecting-bridge C, consisting of the string-pieces G G′ and rails *g g*, the string-pieces being suitably secured together by cross-ties, and rest it upon the neighboring ends of the trucks, as shown in Fig. 1. We may also provide a flooring R, having projecting edges *r r* to act as guards, and which may be extended outwardly to the trusses H. We prefer to have these guards *r r* inclined upwardly, as shown, Fig. 5, as they thus afford more room for throwing out materials from the pit beneath the track and for the admission of light and air.

To facilitate access to the excavation through the flooring R, we provide at suitable intervals pivoted hoppers S S, having trap-doors *s s*, which are kept closed, except at such times as materials are passed down through them. They are preferably placed between the rails, as in Fig. 4, or may be located at any suitable place. In place of hoppers we may also provide, when desirable, a conveyer T, or conveyers arranged on either side of the track on the cross-pieces F, as shown in Fig. 5, or by removing the central string-pieces G′ G′ and strengthening the floor-planks, conveyers may be laid in that space between the track-stringers G G.

Should it become desirable to bring materials to be placed in the work in cars, we provide means to move the regular cars by means of a cable passing over pulleys U U and operated by a stationary engine located at any suitable point. In this case the floor can be entirely removed, if desirable, and the horses can meet the cars at the other end of the approach. A cable service may also be used, extending to the head of the incline A, for drawing the cars upon the approach.

In order to remove the way when the work of construction going on beneath it has been completed, the wedges N N are removed and the trusses H H suspended from the trucks E by screwing up the nuts *m* on the bolts M, the bridges C are also removed, and the sections are then transported on their truck-wheels by any convenient power.

We do not limit ourselves to the particular details of the construction of the truck, track, and trusses shown in the drawings, as they may be greatly varied without departing from the spirit of our invention. Neither do we limit ourselves to the use of wedges alone for raising the track on the trusses, as the same may be accomplished in many well-known ways, as by levers and toggles or hydraulic or screw jacks. Neither do we limit ourselves to the particular form of hoppers or of conveyers shown in the drawings, nor to their particular location; neither to a track having projecting guards, as shown, since any of or all of these features may be dispensed with. Neither do we limit ourselves to the use of our way in combination with a car-track, as it is obvious that it can also be used as a passage-way for other vehicles. Neither do we limit ourselves to the employment of a truck or wheels for transporting our way, as the sections bridging the track or trench may be so constructed, without departing from our invention, as to be carried by other means than by wheels; but

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a portable way, trusses or frame-work for supporting the same, and a device for raising and lowering the way upon the trusses, substantially as described.

2. A portable elevated road consisting of a movable way and adjustable trusses movable with the way, whereby the latter can be raised and supported upon the trusses when in place and lowered again for transportation, substantially as described.

3. The combination of an elevated way, trusses adjustably connected to the way, and a truck whereby the way and truck may be raised and supported upon the trusses and again lowered for transportation, substantially as described.

4. The combination of a truck E, cross-pieces secured to the truck, and adjustable trusses suspended from the cross-pieces, and a device for lifting and lowering the cross-pieces on the trusses, whereby the truck can be supported on the trusses and again lowered and the trusses supported from the cross-pieces for transportation, substantially as described.

5. The combination of the truck E, the cross-pieces F F, the car-track supported thereon, the adjustable trusses H H, suspended from the cross-pieces and having the guide-

posts *k k*, between which move the heads of the cross-pieces, and a device for raising and lowering the trusses, substantially as and for the purpose described.

6. The combination of the truck E, the cross-pieces F F, the car-track and the conveyers supported thereon, the adjustable trusses H H, suspended from the cross-pieces and having the guide-posts *k k*, between which move the heads of the cross-pieces, and a device for raising and lowering the trusses, substantially as and for the purpose set forth.

7. The combination of the truck E, the cross-pieces F, the car-track, flooring, and conveyers supported thereon, the hoppers S S, having the trap-doors *s s* located in the flooring, the adjustable trusses H H being supported from the cross-pieces and having the guide-posts *k k*, between which move the heads of the cross-pieces, and a device for raising and lowering the trusses, substantially as set forth.

8. An approach to an elevated way or track, consisting of a platform having one extremity resting upon the street-surface and the other extremity attached to a truck having supporting adjustable trusses, whereby the extremity of the platform may be raised or lowered for transportation, substantially as described.

9. The combination of a section of a portable way or track, consisting of a truck, cross-pieces, trusses suspended therefrom, and a device for raising and lowering the same, with a portable approach having one extremity resting upon the surface of the street and the other extremity supported on a truck having cross-pieces, trusses suspended therefrom, and a device for raising and lowering it, the whole substantially as described.

10. In a portable elevated way, the combination of the portable vertically-adjustable approach A, the portable vertically-adjustable section B, and the bridge C, substantially as described.

11. The combination, with an elevated portable way, as described, of pulleys and a cable, substantially as and for the purpose set forth.

12. The combination of a portable way, a flooring to the way, and dependent hoppers accessible through the flooring, substantially as and for the purpose set forth.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

ANDREW BRYSON, JR.
CORNELIUS TIERS.

Witnesses:
ALEXANDER H. TIERS,
JOHN H. SLATTERY.