

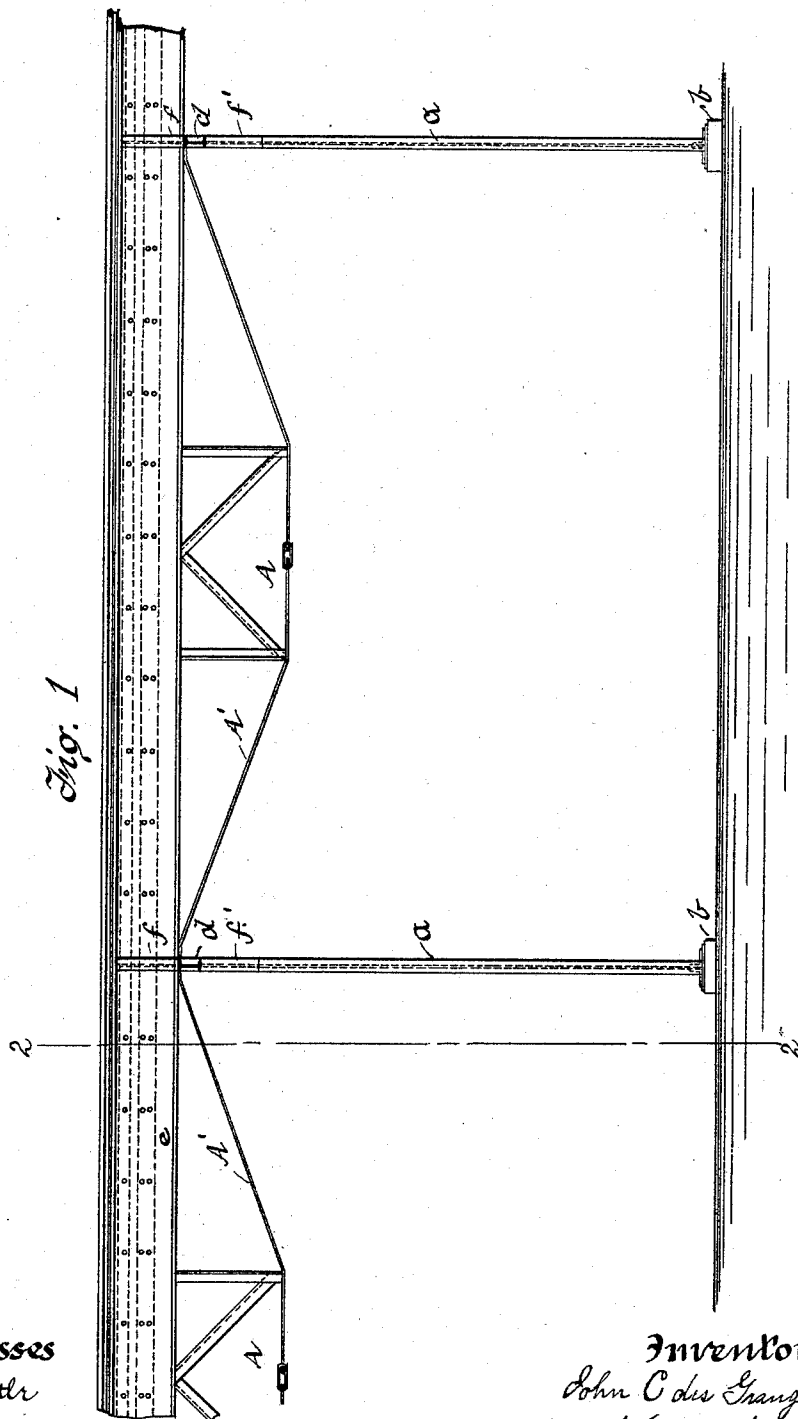
(No Model.)

2 Sheets—Sheet 1.

J. C. DES GRANGES.
ELEVATED RAILWAY.

No. 527,236.

Patented Oct. 9, 1894.



Witnesses
L. W. B. Little
Robert C. Totten

Inventor
John C. Des Granges
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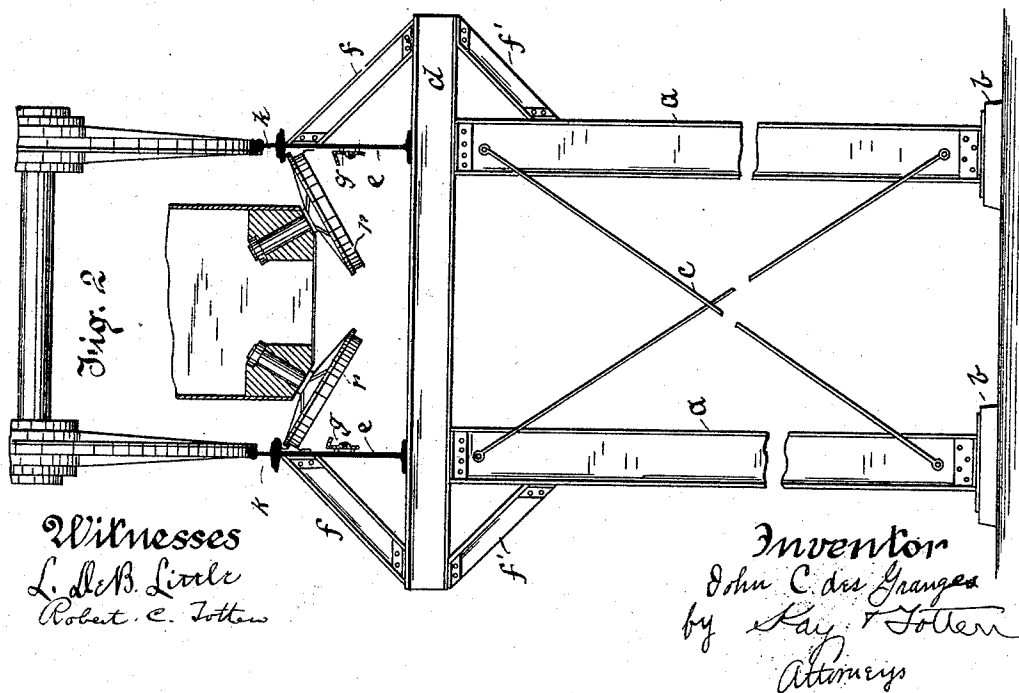
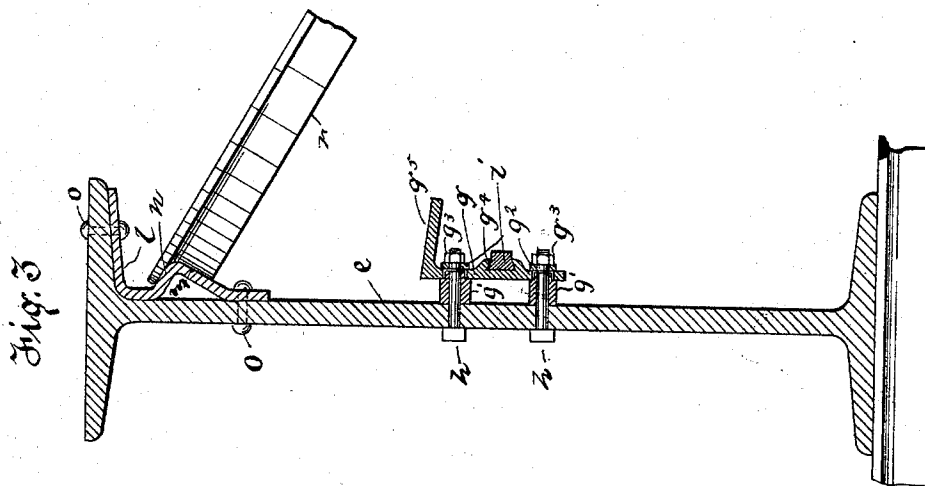
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UNITED STATES PATENT OFFICE.

JOHN C. DES GRANGES, OF PITTSBURG, PENNSYLVANIA.

ELEVATED RAILWAY.

SPECIFICATION forming part of Letters Patent No. 527,236, dated October 9, 1894.

Application filed May 21, 1894. Serial No. 511,936. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. DES GRANGES, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Elevated Railways; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the construction of elevated railways.

In the accompanying drawings Figure 1 is a view in side elevation of an elevated structure embodying my invention. Fig. 2 is an enlarged section on the line 2—2 Fig. 1. Fig. 3 is an enlarged view of one of the girders.

My invention is adapted to be employed in connection with a car or vehicle such as set forth in Letters Patent No. 518,565, granted to Charles C. Burton, April 17, 1894.

The structure consists of the posts or uprights *a*, preferably formed of rolled I beams, supported on the foundations *b*. The posts *a* may be braced by the rods *c*. Resting on the posts *a* with their ends projecting beyond said posts are the transverse caps or cross-beams *d*. The cross-beams *d* are also preferably formed of rolled I beams, and are secured to the posts *a* in the ordinary manner by angle iron and rivets. Supported on the cross-beams *d* are the girders *e* in the form of large I-beams and riveted to the said cross-beams *d*. To support the girders *e* braces *f*, *f'* are employed. The upper braces *f* are riveted at their upper ends to the girder *e* just below the upper flange thereof, and are inclined from that point to or adjacent to the end of the cross-beam *d* to which they are riveted. The brace *f'* is secured to the lower face of the cross-beam *d* at or adjacent to the end thereof and is inclined inwardly and secured to the post *a*. This provides a very strong brace for the girders, and being on the outside thereof, leaves the space between the girders unobstructed, which is an important feature when used in connection with the style of car set forth in the above mentioned Letters Patent. Any suitable struts *A* may be employed between the posts *a*, said struts being supported by the tie-rods *A'*, as shown in Fig. 1.

Longitudinal strips *g* extend along the inner faces of the webs of the girders *e*, and

are secured to the same by means of bolts *h*. In order to properly insulate said strips from the girders the bolts *h* pass through the insulating blocks *g'* interposed between said girders and strips. A ring *g²* of insulating material insulates the nut *g³*. A dove-tailed seat *g⁴* is formed in the strip *g* to receive the conductor *i* along which the trolley wheel travels and by which electricity is supplied thereto. The conductor *i* of copper or other suitable material may be forced into the seat *g⁴* and when in place therein remains secure without the aid of other fastening devices. The strips *g* are further provided with the flanges *g⁵*, preferably slightly inclined. These flanges shed off the water and prevent its falling onto the conductor *i*. In this manner the conductor is thoroughly insulated so that in case of rain the current is not wasted by being carried off by the water. This is a great advantage where the conductor carries a very high voltage and very high speed is to be attained.

The supporting rails *k* for the wheels of the car are laid along the top flange of the girder *e*, while just beneath said flange on the inner faces of said girders are the guide or bearing rails *l*. The guide rails *l* are preferably rolled to the section shown enlarged in Fig. 3. They have the straight face *m* with which the tread of the guide wheel engages, and the face *n* practically at right angles thereto against which the flange of the guide wheel bears. The guide rails *l* may be secured to the girders *e* by the rivets *o*. This form of guide rail presents a bearing face which will guide the wheel without liability of its slipping therefrom, and as the face *n* is substantially at right angles to the face *m*, a very strong bearing face for the tread of the wheel is obtained, and the wear and tear on the guide rails is greatly reduced. The guide wheels *r* of the drawings are similar to the ones employed in connection with the car set forth in the hereinbefore mentioned Letters Patent. In my construction of the elevated structure the wheels of the car run upon the track *k* while the guide wheels *r* are below the track *k* and within the space between the girders *e*. By having the supporting rails *k* above the guide rails and at the top of the structure the width of the car

need not be limited to the space between the girders *e*, as in cases where the supporting rails are below the top of the girders, but the width of the car may be increased if desired.

5 What I claim as my invention, and desire to secure by Letters Patent, is—

1. An elevated track supporting structure comprising supporting posts, cross beams resting on said posts and having their ends projecting beyond said posts, rail supporting girders on said cross-beams and braces extending outwardly from the upper portions of said girders to the projecting ends of said cross-beams, substantially as set forth.

2. An elevated track supporting structure comprising supporting posts, cross-beams resting on said posts and having their ends projecting beyond said posts, rail supporting girders on said cross-beams and braces extending outwardly from the upper portions of said girders to the projecting ends of said

cross-beams and from said projecting ends inwardly to said posts, substantially as set forth.

3. The combination of supporting posts, longitudinal I-beams supported thereby, supporting rails on the upper flanges of said I-beams, and guide rails secured beneath said flanges on the inner faces of said beams, substantially as set forth.

4. The combination of supporting posts, longitudinal I-beams supported thereby, supporting rails on the upper flanges of said I-beams, guide rails secured beneath said flanges on the inner faces of said beams, said guide rails having faces *m*, *n*, substantially as set forth.

In testimony whereof I, the said JOHN C. DES GRANGES, have hereunto set my hand.

JOHN C. DES GRANGES.

Witnesses:

ROBT. D. TOTTEN,
ROBERT C. TOTTEN.