

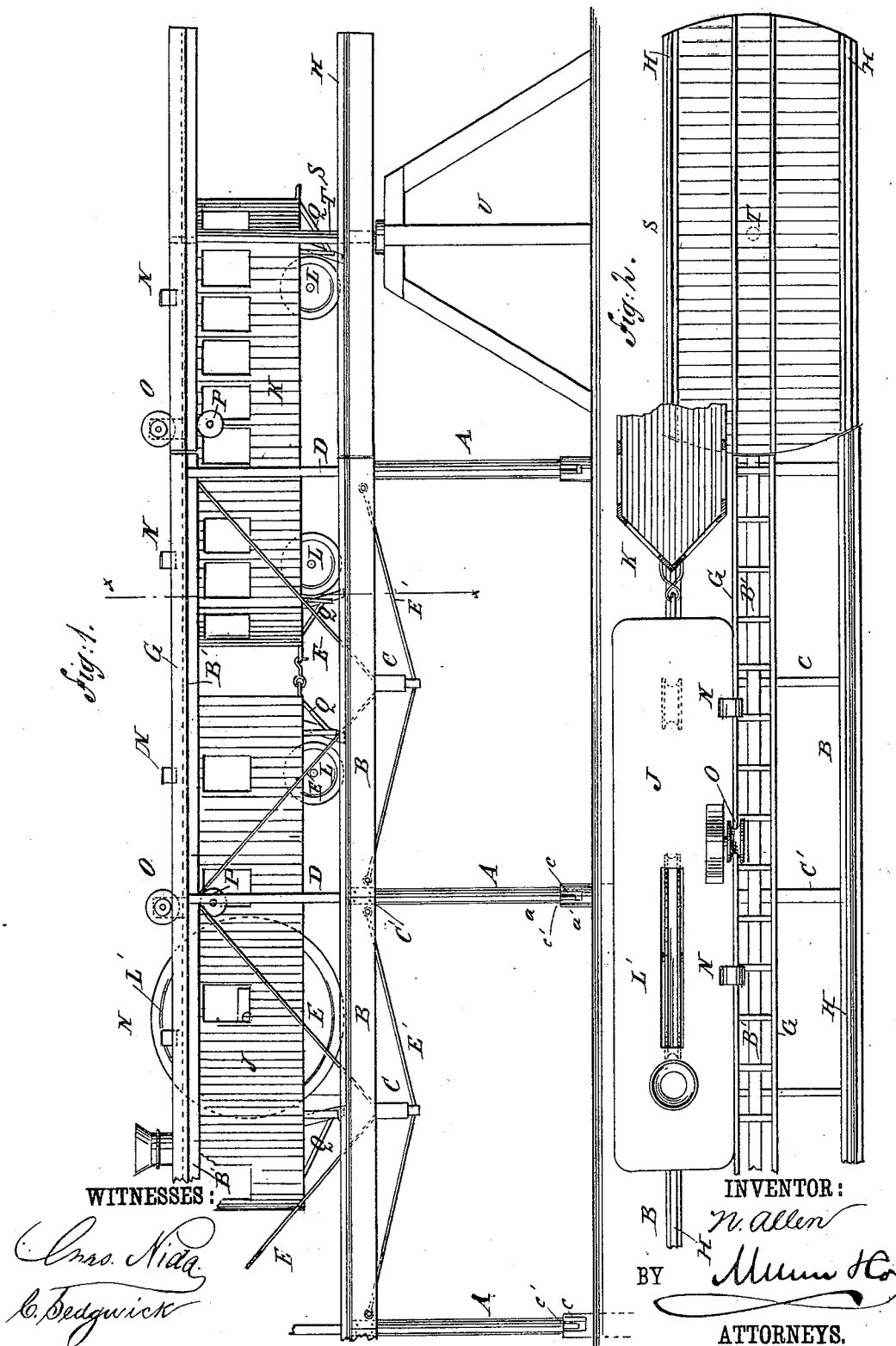
(No Model.)

2 Sheets—Sheet 1.

N. ALLEN.
ELEVATED RAILROAD.

No. 263,454.

Patented Aug. 29, 1882.



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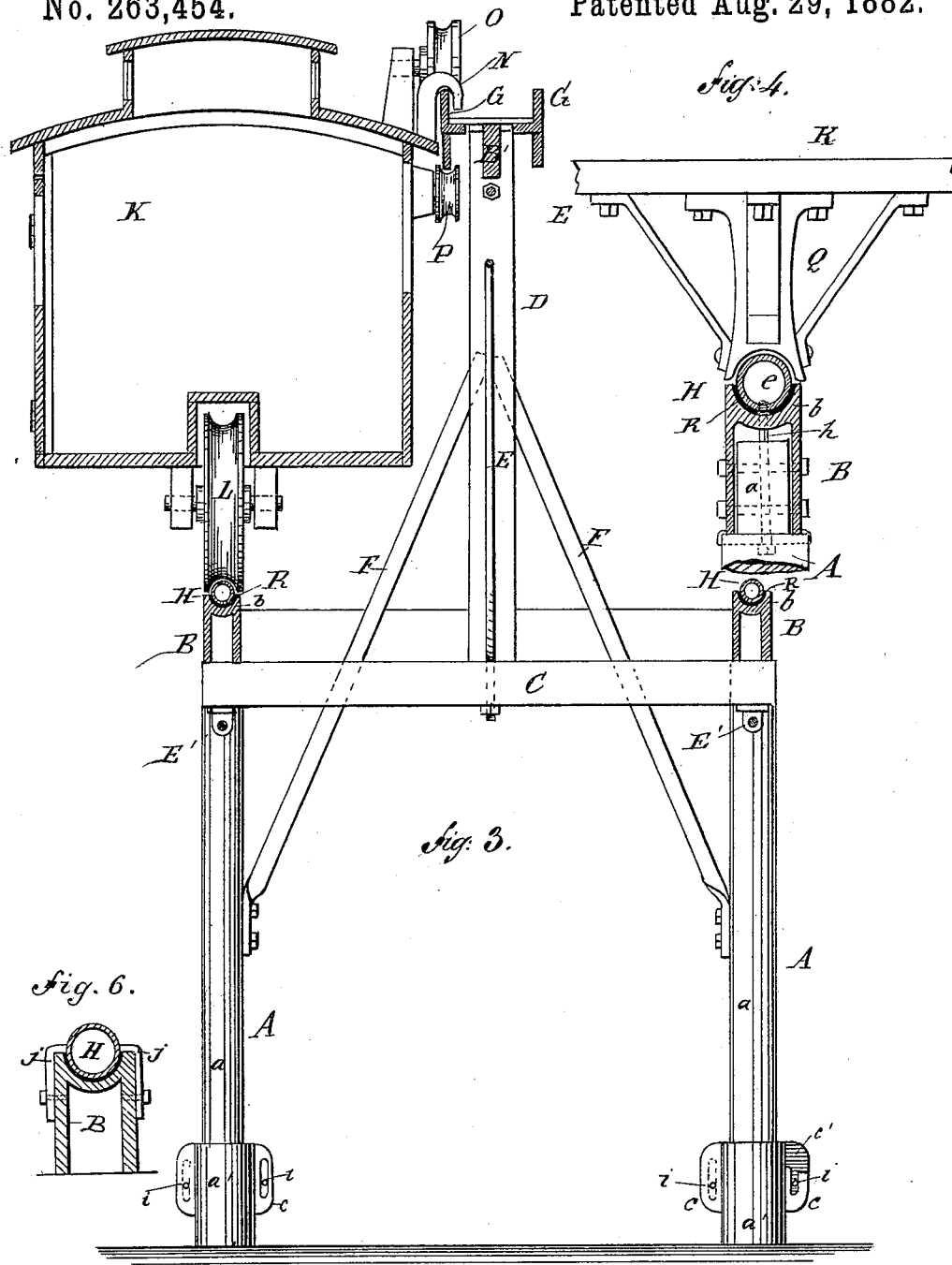
2 Sheets—Sheet 2.

N. ALLEN.

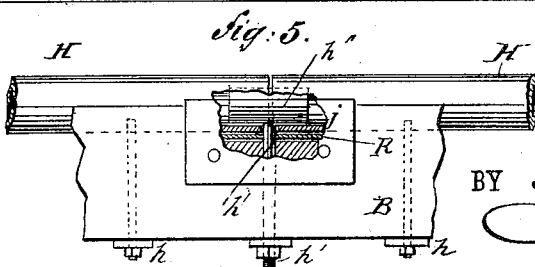
ELEVATED RAILROAD.

No. 263,454.

Patented Aug. 29, 1882.



WITNESSES:
Chas. Mida.
C. Sedgwick



INVENTOR:

N. Allen

BY

Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

NORMAN ALLEN, OF ROCKAWAY BEACH, NEW YORK.

ELEVATED RAILROAD.

SPECIFICATION forming part of Letters Patent No. 263,454, dated August 29, 1882.

Application filed March 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, NORMAN ALLEN, of Rockaway Beach, in the county of Queens and State of New York, have invented a new and useful Improvement in Elevated Railroads, of which the following is a full, clear, and exact description.

The object of my invention is such construction of elevated railroads and the locomotives and cars to be used therewith that the railroad may be made very compact and durable and built at comparatively small cost, and will be perfectly safe, and whereby it will be possible and practicable to attain a very high rate of speed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my new and improved elevated railroad and of my improved locomotive and cars, also showing the turntable. Fig. 2 is a plan view of the same. Fig. 3 is a cross-sectional elevation taken on the line *xx* of Fig. 1. Fig. 4 is a detailed view, showing the safety-strut; and Figs. 5 and 6 are detailed views, showing the manner of securing the ends of the tubular rails to the stringers.

The superstructure of my improved road is supported upon the posts *A A*, and consists of the parallel bed-pieces or stringers *B B*, reaching from posts to posts, cross-pieces *C C*, reaching from stringer to stringer, the latter being placed upon the top of the posts *A A*, the former about midway between them and under the stringers, as shown, the central posts, *D*, supported upon the cross-pieces *C'* and braced by the braces *F F* to the posts *A A*, and the beam *B'*, placed upon the said posts *D*, the whole being trussed by the truss-rods *E*, leading from the top of the posts *D* to the cross-pieces *C*, and the truss-rods *E'*, leading from the ends of the stringers *B* under the said cross-pieces *C*, as shown in Fig. 1.

G G are the guard-rails, which are secured to or formed upon the beam *B'*, and *H H* are the main rails of the track, which in this instance are tubes of steel of suitable size secured in the upper concaved surfaces or edges

of the bed-pieces or stringers *B B*, by means hereinafter described.

J represents the locomotive, and *K* represents the cars or coaches, which are supported upon the wheels *L*, which are under the center of the cars. The drive-wheel *L'* of the locomotive is made very large and passes up through the center of the housing of the locomotive, as shown in Figs. 1 and 2.

Upon the top of the cars and the locomotive the same are provided at the edge with the hooks *N N* and the guttered friction-rollers *O*, which run over and upon the upper edge of the guide-rails *G*, and upon the sides of the cars and locomotive are secured the guttered wheels *P*, which run in contact with the lower edge of the guard-rails, and thus balance and securely hold the cars and locomotive upon the track. The function of the hooks *N*, projecting over the upper edge of the guide-rail *G*, is to positively prevent the wheels from being thrown laterally from the guide-rails *G* in case any unusual side pressure is brought against the wheels, as in case of the breakage of the wheels, to hold the car on the guide-rail.

Upon the under side of the cars and locomotive, near the wheels, are secured the struts *Q Q*, which are crotched or upwardly curved at their lower ends and run in close proximity to the track, as shown in Fig. 4, and serve as safety-guards in case of the breaking of a wheel or axle to prevent the cars leaving the track, and also as brakes from friction with the track to stop the train in case of such an accident.

The rails *H H* are screw-tapped at suitable intervals along their under side, as shown at *e*, Fig. 4, so as to receive the upper screw-threaded ends of the bolts *h h* for securing the rails in position upon the stringers *B B*. To form the joint between the ends of the rails, or rather to secure the ends of the rails upon the stringers, I make use of the *T*-bolts *h'*, the upper end or head portion, *h''*, of which are round and just fit in the ends of the tubular rails, the bolt portion passing down through the stringers to receive the ordinary nuts, as will be clearly understood from Fig. 5.

j j represent plates secured to the outside of the stringers *B*, and extending above their up-

per edges at the joints of the rails, and having their upper edges bent over on the stringers, with their ends abutting against the rails.

R represents the packing, of rubber and felt or similar material, placed between the rails H H and the upper concaved surfaces of the stringers, which serves to deaden the noise of the trains passing over the track.

The posts A A are by preference tubular, and made in two parts, the upper part, *a*, and the base or pedestal part, *a'*, which sets in the ground. The upper parts, *a*, set in the upper ends of the lower or base parts, *a'*, and they are secured together by the bolts *i i* passing through suitable perforations and slots in the corresponding flanges, *c c'*, formed upon the parts of the posts. By this means the upper parts, *a*, of the posts are adapted to be adjusted vertically for leveling the track.

The turn-table S is made with double tracks to correspond with the tracks of the road, and turns upon the pivot T, held by the frame U, and is adapted to transfer the cars or locomotive from one track to the other and to receive the cars from either side or end; and two cars may be turned and shifted from one track to the other at the same time, if desired.

I am aware that a car provided with friction-rollers on its sides, running on elevated guide-rails to hold the car on the track, has

heretofore been employed, and I therefore lay no claim to such construction.

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

1. The combination, with the posts A and parallel stringers B, of the cross-pieces C C', the central posts, D, supported by braces F, the beam B, resting on said posts D, and the truss-rods E E', substantially as shown and described.

2. In an elevated railroad, the guard-rails G G, secured to a median beam, B', resting on posts D, in combination with cars and locomotives, having the hooks N N and guttered friction-rolls O P, as shown and described.

3. The combination, with the stringers B and tubular rails H, secured together by bolts *h*, of the T-bolts *h'*, having a rounded head fitting in the ends of the tubular rails, and shanks passing down through the stringers, as described.

4. The combination, with the rails and stringers, of the plates *j j*, made fast to the stringers and breaking joint with the rails to prevent said rails from lateral end displacement, as described.

NORMAN ALLEN.

Witnesses:

H. A. WEST.

C. SEDGWICK.