

C. D. TYLER.  
Elevated Railway.

No. 223,415.

Patented Jan. 6, 1880.

Fig. 1.

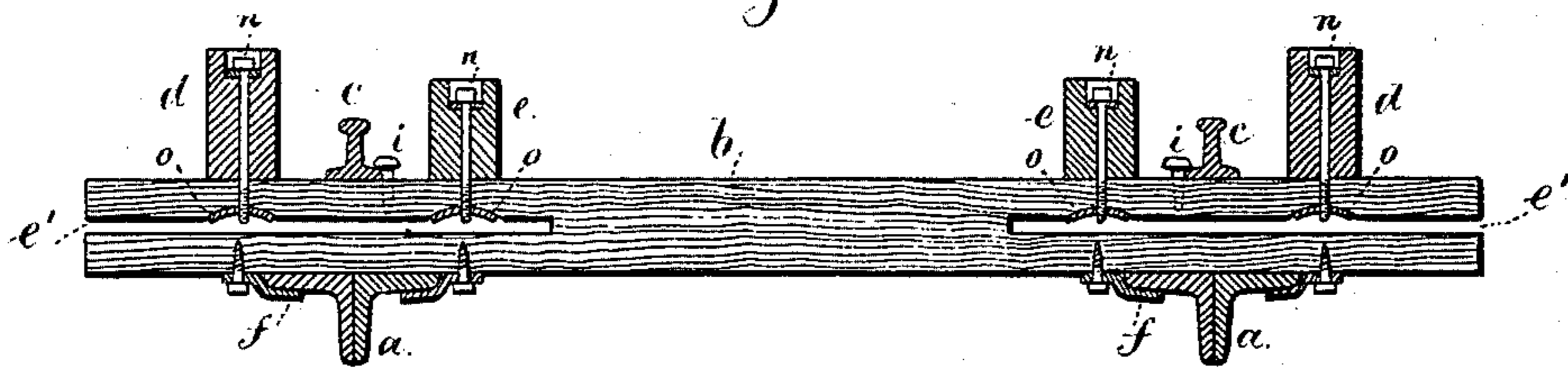
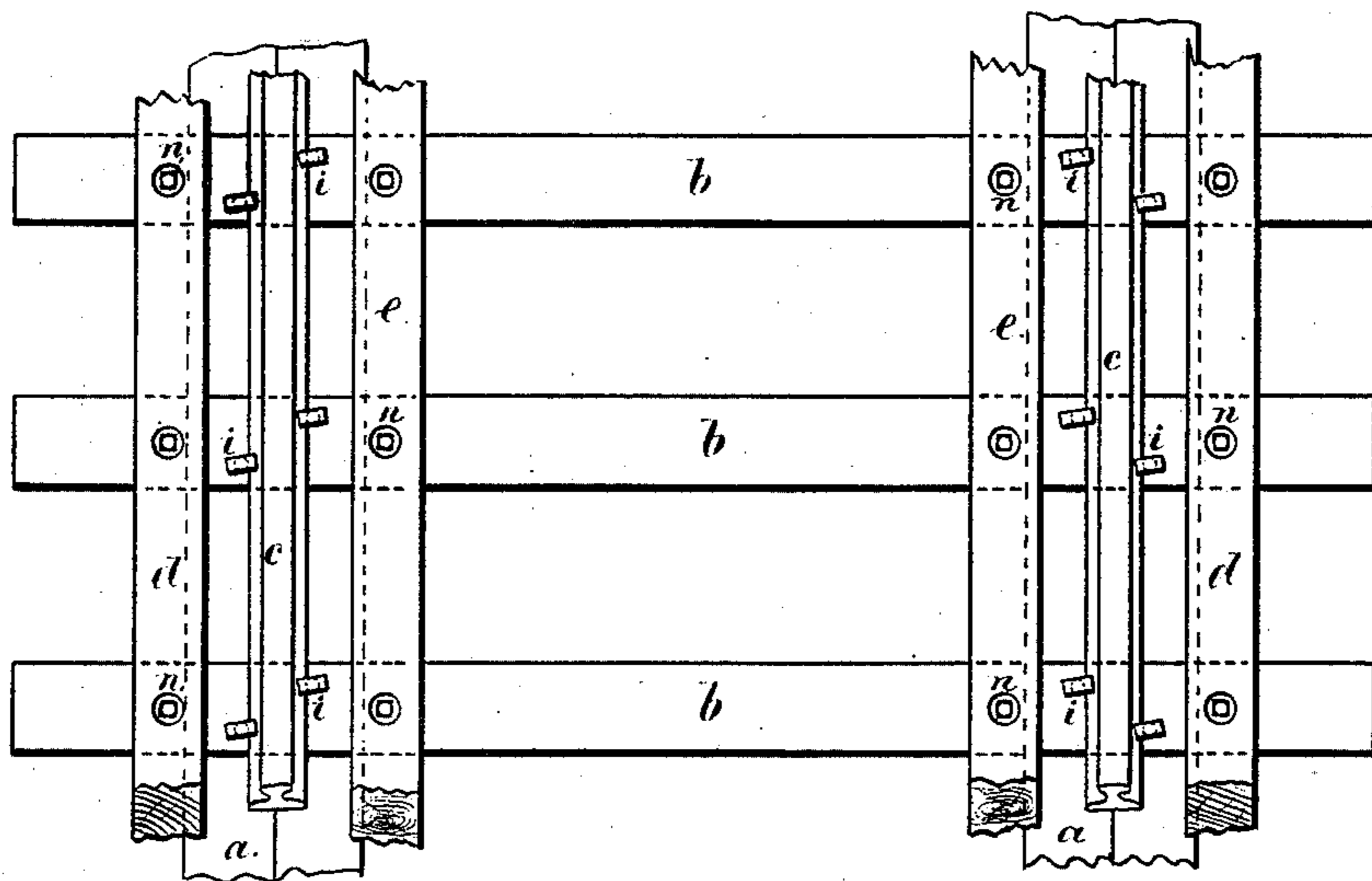


Fig. 2.



Witnesses

Chas H. Smith  
Geo. V. Pinckney

Inventor

Charles D. Tyler.  
per Samuel W. Serrell  
att'y.

# UNITED STATES PATENT OFFICE.

CHARLES D. TYLER, OF NEWARK, ASSIGNOR TO HIMSELF AND CLARK  
W. MILLS, OF POMPTON, NEW JERSEY.

## ELEVATED RAILWAY.

SPECIFICATION forming part of Letters Patent No. 223,415, dated January 6, 1880.

Application filed February 12, 1879.

*To all whom it may concern:*

Be it known that I, CHARLES D. TYLER, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Elevated Railways, of which the following is a specification.

The object of this invention is to relieve the iron structure from the concussion of passing trains, and in so doing to cause the train to run more noiselessly and with less jar or vibration, so as to reduce the wear and tear upon the structure and rolling-stock to the minimum.

In the drawings, Figure 1 is a vertical cross-section of the trackway, and Fig. 2 is a plan of a portion of the same.

The trusses or girder-beams *a a* are of any usual kind, and upon these the cross-ties *b* rest. *c c* are the track-bars; *d d*, the outer guard-rails, and *e e* the inner guard-rails. These parts, so far as described, are of any usual or desired character, except the cross-ties and attachments, to which my invention relates, as next described.

The cross-ties *b* are rather heavier than those heretofore employed, in order to obtain the required strength when the same are sawed from each end to form the opening *e'*, that is about one inch wide (more or less) and extends from each end toward the middle a distance sufficient to pass beneath the track-rails *c*, so that a spring-jaw will be formed of the wood of the cross-tie beneath each track-rail. This prevents the direct transmission to the structure of the concussion from passing trains, and causes such trains to run steadier and quieter than heretofore.

In order to attach the cross-ties to the girders *a*, I make use of the clip-pieces *f*, as heretofore usual, and secure them by wood or lag screws inserted from below up into the ties, and the track-bars are secured directly upon such cross-ties by screws *i*, having T-heads,

that are turned to catch upon the edges of the rail-base.

The rail can be removed by turning the screws with the heads parallel to the rail, and the lower edges of the heads should be beveled, so as to clamp the rail to the tie as the screws are tightened from time to time.

The bolts *n*, that secure the guard-rails, do not pass entirely through the tie, but they enter the nuts *o*, that are between the upper and lower spring-jaws.

The nuts are made with arched upper surfaces, so as to rest firmly within segmental recesses cut in the under sides of the upper spring-jaw of the cross-ties.

By this construction there is opportunity for the ends of the jaws to spring or yield without risk of injury, and the ends of the jaws would come into contact and support each other in case of undue strain, and there will not be any risk of the parts breaking.

The rigid guard-rails, being bolted firmly to the upper jaws of the cross-ties, serve to distribute the pressure at any one place upon several of the adjoining ties, thus preventing the rails being bent, and at the same time allowing of a slight yielding movement for the purposes aforesaid.

I claim as my invention—

The cross-ties for an elevated railway, each composed of one piece of wood, with jaws at each end formed by horizontal incisions that leave the middle portion of the tie untouched, in combination with the guard-rails that connect the adjacent upper jaws, the rails, and the girders, substantially as specified.

Signed by me this 10th day of February, A. D. 1879.

C. D. TYLER.

Witnesses:

WILLIAM G. MOTT,  
GEO. T. PINCKNEY.