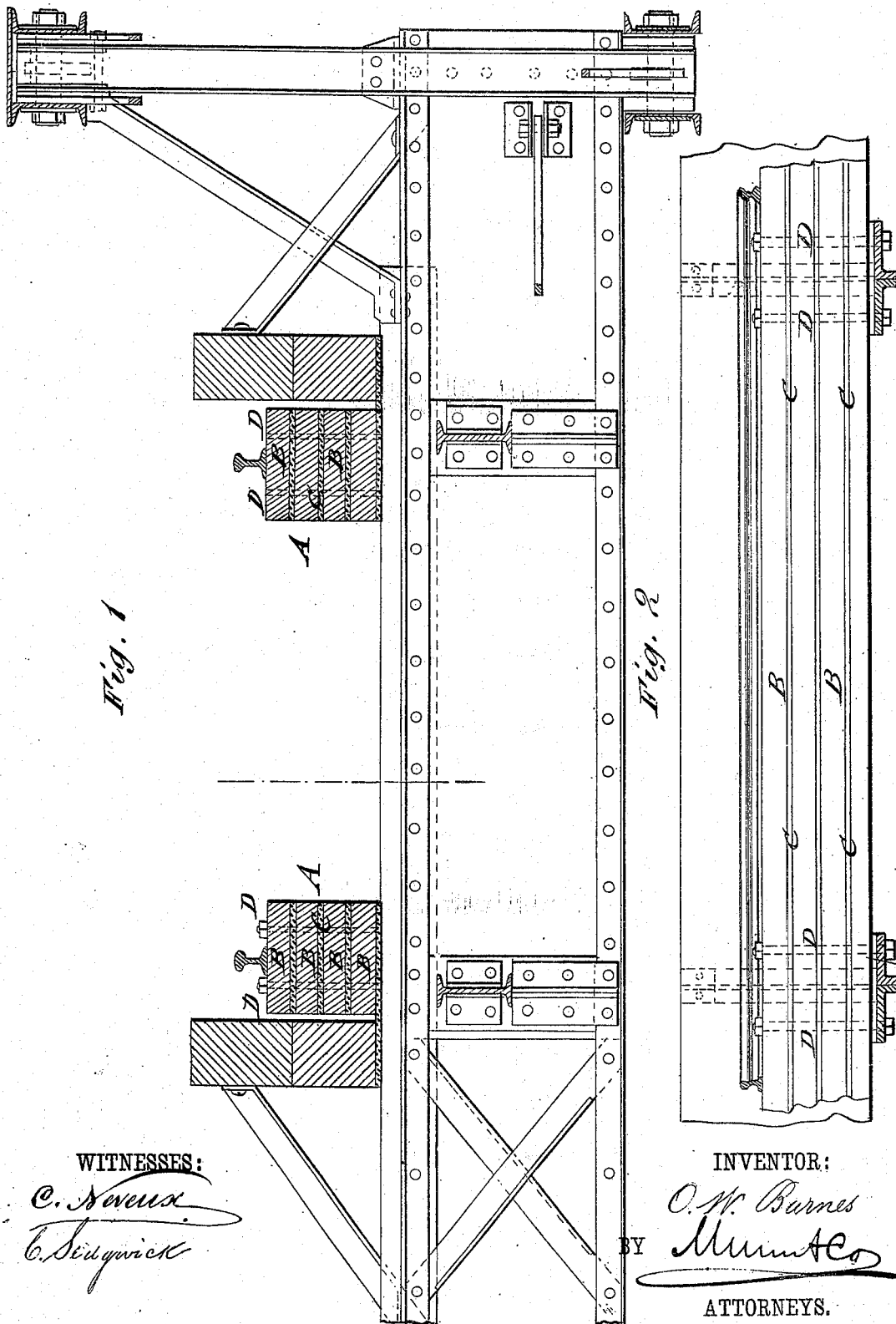


O. W. BARNES.  
Elevated Railway.

No. 217,441.

Patented July 15, 1879.



WITNESSES:

*C. Novak*  
*C. Sedgwick*

INVENTOR:

*O. W. Barnes*  
*Munn & Co*

BY

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

OLIVER W. BARNES, OF FISHKILL, NEW YORK.

## IMPROVEMENT IN ELEVATED RAILWAYS.

Specification forming part of Letters Patent No. 217,441, dated July 15, 1879; application filed August 29, 1878.

*To all whom it may concern:*

Be it known that I, OLIVER W. BARNES, of Fishkill, in the county of Dutchess and State of New York, have invented a new and Improved Girder for Elevated Railroads, &c., of which the following is a specification.

In the accompanying drawings, Figure 1 represents a vertical transverse section of the supporting-structure of an elevated railroad with my improved girder, and Fig. 2 a side view of the girder.

Similar letters of reference indicate corresponding parts.

The object of this invention is to introduce into or upon the structures which support railway-tracks—such as elevated railroads, bridges, &c.—an improved elastic girder, so that it forms a continuous support for each rail, either above or below the cross-ties, and absorbs and neutralizes the vibrations caused by the rolling-stock on said structures, while preventing also, in a great degree, the noise usually caused by the concussion of the car-wheels on the rails.

The invention consists of a compound girder that is made of different superposed sections of wood, with intermediate layers of elastic material, the sections being firmly bolted together.

Referring to the drawings, A represents my improved compound girder for elevated railroads, bridges, and other structures, which girder is composed of two or more sections, B, of oak, pine, or other suitable timber, the sections being from two to six inches thick and from six to twelve inches, or more, wide.

Between the sections B are interposed layers C, of suitable elastic material, such as felt, soft rubber, or both. The sections and layers are bolted together by screw-bolts D, and form

then a compound beam or girder, which may be of any desired cross-section and length, so as to be conveniently handled. One of these girders may be placed upon the top of each top chord of a truss, or upon the floor-beams of a bridge, or upon cross-ties resting on the top chord, or laid in any suitable position in or upon a truss. The cross-ties may be laid upon the compound girders, or, preferably, the cross-ties may be laid beneath the girders, which are then securely held in position by bolts passing through them and the cross-ties; or they may be held in place by iron ties or bolts extending from one girder to the other. The rails are then laid upon the cross-ties or upon the girders, as the case may be, and secured in the usual manner.

By the use of the compound girders a noiseless track and a diminution of vibration of all the parts of iron structures or elevated railroads is obtained, so as to render them thereby less objectionable in cities to the inhabitants of houses near the roads or bridges, and make them also more durable, as they are less exposed to vibratory strains.

The girders will form a more perfectly smooth track, and thereby diminish the resistance of moving trains, and require less locomotive power to move them.

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

An elastic longitudinal girder or railroad-support formed of alternate layers of wood and felt, as and for the purpose specified.

OLIVER W. BARNES.

Witnesses:

C. SEDGWICK,  
PAUL GOEPFEL.