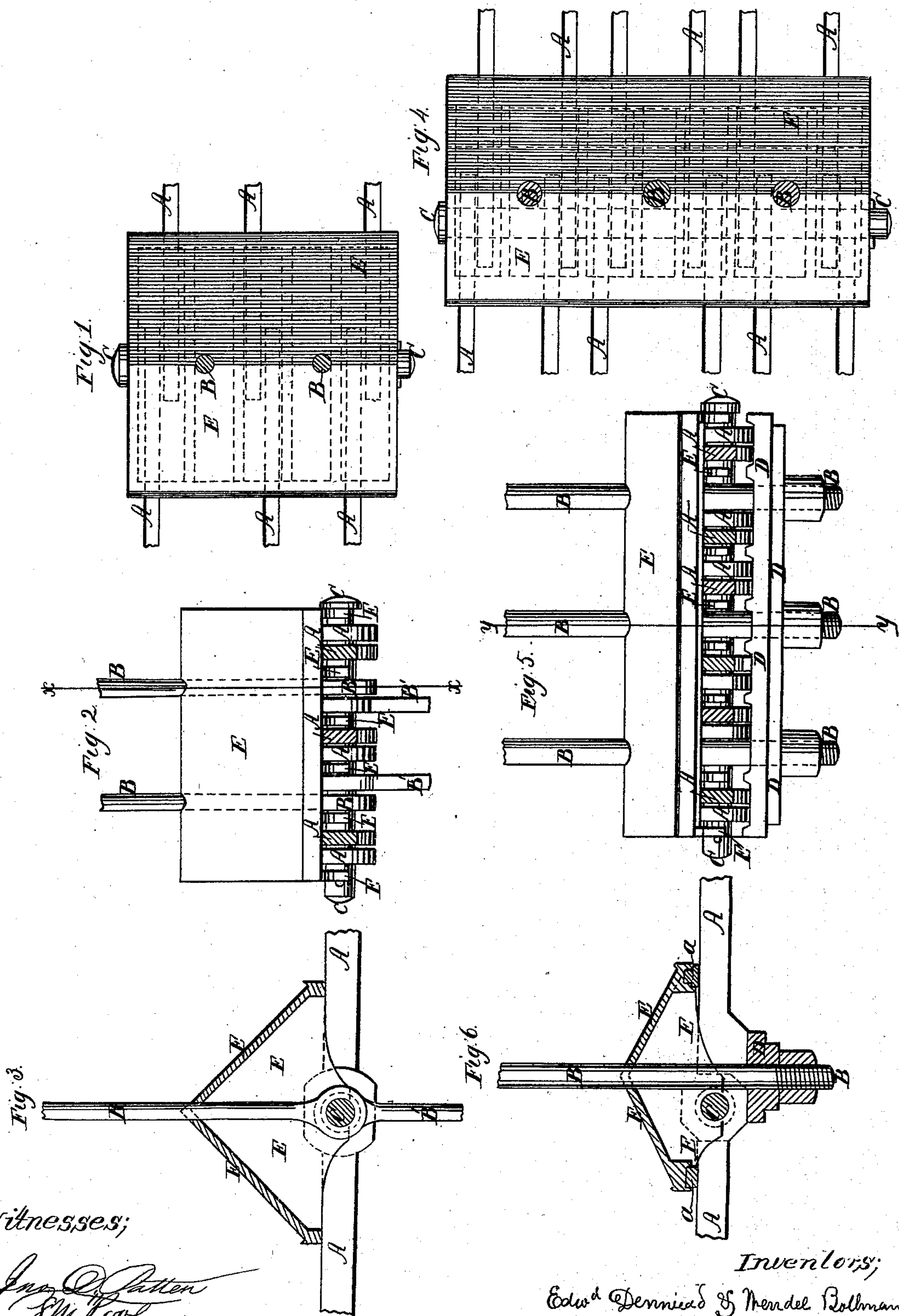


*Denniead & Bollman.*

*Truss Bridge.*

*N<sup>o</sup> 78,073.*

*Patented May 19, 1868.*



*Witnesses;*

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*Inventors;*

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# United States Patent Office.

EDWARD DENMEAD, OF MARIETTA, GEORGIA, AND WENDEL BOLLMAN,  
OF BALTIMORE, MARYLAND.

*Letters Patent No. 78,073, dated May 19, 1868.*

## IMPROVEMENT IN BRIDGES.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, EDWARD DENMEAD, of Marietta, in the county of Cobb, and State of Georgia, and WENDEL BOLLMAN, of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in the Construction of Bridges; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a top plan of so much of a bridge as will illustrate our invention.

Figure 2 represents an elevation of the same, and

Figure 3 represents a vertical cross-section, taken at the red line *x x*, of fig. 2.

Figures 4, 5, and 6 represent, by similar views, a modification of the general plan, fig. 6 being a vertical cross-section, taken at the red line *y y* of fig. 5.

Similar letters of reference, where they occur in the several separate figures, denote like parts in all of the drawings.

Our invention consists, first, in supporting the angle-irons of the bridge upon bolts which pass through the chords, instead of upon the chords, as heretofore done.

And, secondly, our invention consists in the interposition, between the angle-irons and the chords, of rubber, felt, wood, or any other elastic cushion, to break the suddenness of the contact and strain between said two parts when heavy loads are passing.

To enable others skilled in the art to make and use our invention, we will proceed to describe the same with reference to the drawings.

A A represent a series of iron chords, and B B suspension-rods, such as are used in bridge-building. In figs. 1, 2, 3, we have shown the chords as supported by a bolt, C, which passes through eyes wrought therein, said bolt C being suspended to the top chords by the suspension-rods B B, and the bearer suspended thereto by separate rods, B'. In figs. 4, 5, 6, we have shown the chords A as resting upon a bearing-piece or pieces, D, which bearing-piece or pieces are held by the suspension-rods B. Either form of sustaining the chords may be used, as may be preferred. Our invention does not relate to the chords or suspension-rods, or the mode of uniting them.

Through the chords, as shown at 4, 5, 6, there is passed a bolt, C, but it is not a bearing-bolt for the chords, as that in the plan shown in figs. 1, 2, 3. The bolts C, in both modifications of construction, are used for a support for the angle-irons E, which heretofore have been supported upon the chords, which is found to be objectionable. When, as is shown at figs. 1, 2, and 3, the bolt C is suspended to or by the rods B, and the rods B' suspended to the bolt C, then the angle-iron E can be supported on said bolt in a central position, or by bearings in a vertical plane to its centre; but, when the suspension-rods B pass by the chords, and extend down to the bearing-piece D, to support it, as in figs. 4, 5, 6, then the bolt C must be placed at one side of these suspension-rods, and the angle-iron E, in that case, would have its support outside of its central line, as seen in fig. 6, but nevertheless it is a bolt-support, instead of a chord-support, and makes a better bearing for the angle-iron, and relieves the chords; and, to still further relieve the angle-iron and chord of the sudden weight or jar of a heavy load, we place an elastic substance, *a*, between the angle-iron and the chords, which cushions the load and strain, and relieves the structure of jar. This interposed substance may be wood, rubber, felt, or any other durable yielding substance that will ease of the suddenness of the strain without, by its crushing, allowing the two iron surfaces to come in contact. Wood set into grooves in the angle-irons serves a very good purpose.

Having thus fully described our invention, what we claim therein as new, and desire to secure by Letters Patent, is—

1. Supporting the angle-irons E upon a bolt, instead of upon the chords, substantially as and for the purpose described.

2. We claim, in combination with angle-irons supported upon a bolt, instead of upon the chords, the interposing, between said irons and chords, of an elastic cushion, substantially as and for the purpose described.

EDWARD DENMEAD,  
WENDEL BOLLMAN.

Witnesses to EDWARD DENMEAD:

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Witness to WENDEL BOLLMAN:

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