

# J. Boles, Jr. Truss Bridge.

N<sup>o</sup> 38,552.

Patented May 19, 1863.

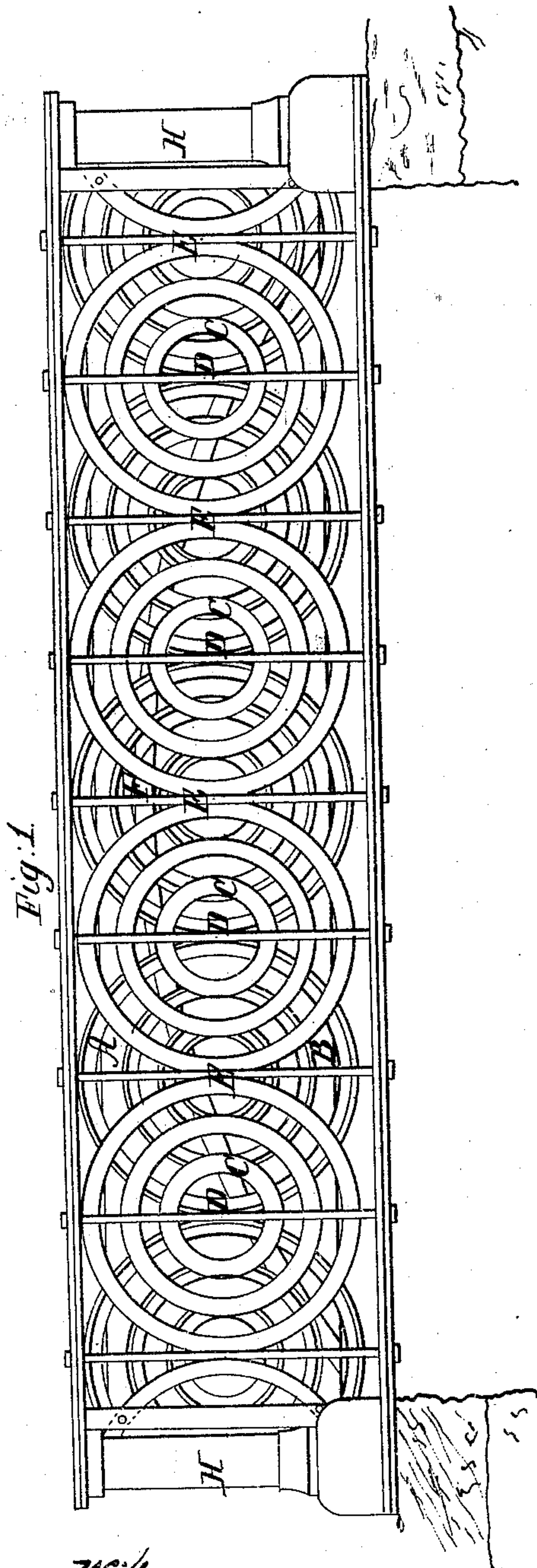


Fig. 1.

Fig. 2.

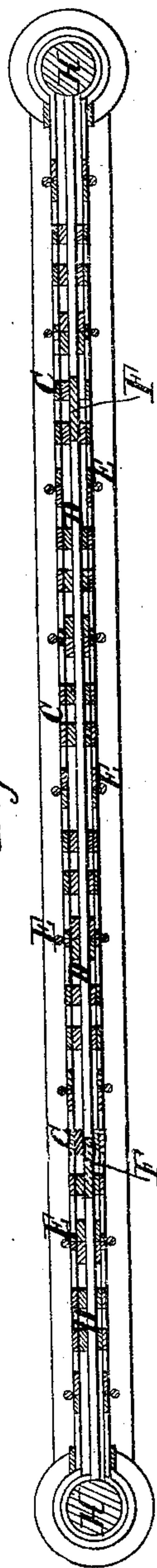
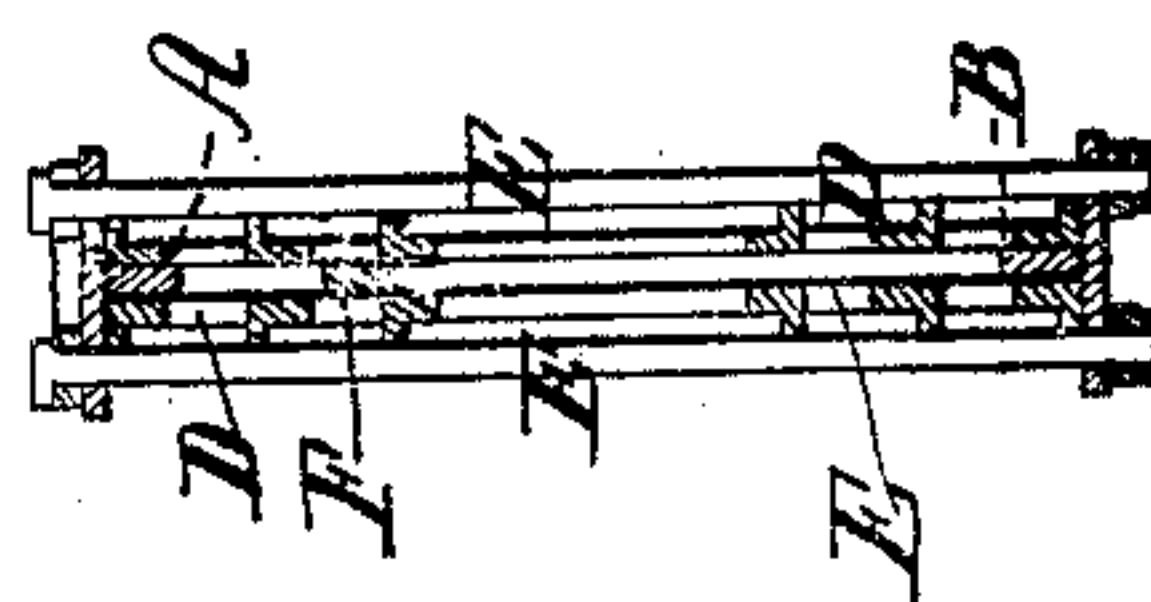


Fig. 4.



Fig. 5.



Witnesses  
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## IMPROVEMENT IN TRUSS-BRIDGES.

Specification forming part of Letters Patent No. 38,552, dated May 19, 1863.

*To all whom it may concern:*

Be it known that I, JOHN BOLES, 2d, a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Truss for Bridges, Roofs, &c.; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a side elevation, Fig. 2 a longitudinal section, and Fig. 3 a transverse section, of it.

The nature of my invention consists in a combination and arrangement of top and bottom cords, vertical tie-rods, and overlapping annuli; also, in a combination and arrangement of top and bottom cords, vertical tie-rods, overlapping or overlapping and interlocking annuli, and an arched beam, the whole being substantially as hereinafter described.

In the drawings, A and B are the top and bottom cords; C C C D D D, &c., are the annuli, while E E E, &c., are the vertical tie-rods, and F is the arched beam. The annuli are arranged in sets of two or more of them of different diameters, disposed concentrically. Each of these sets of annuli, except the two end sets of the collection, are also arranged so as to lap on two other sets. Where each annulus of one set crosses any one of another set, it may interlock with it, or it may be confined thereto by one or more nails or bolts. I prefer to make each annulus or ring of what is termed "angle-iron," in which case a ring would have the form shown in cross-section in Fig. 4. These rings may be notched at

their crossings, so as when put together to interlock with one another.

The truss, as represented in the drawings, exhibits two ranges of these sets of annuli interposed between two cords, the latter being made so as to project between the ranges. The vertical tie-rods extend from the upper cord down to and through the lower one, and are confined in place by screws and nuts arranged on their lower extremities. Between the two ranges of annuli is the arched beam F, which, at its extremities, abuts on the lower cord. This beam may be bolted to one or both ranges of the annuli at points where most convenient to connect it with them.

The truss may be finished by having posts H H arranged on its ends and between the cords, as shown in the drawings.

A truss, when made in manner as above described, will be a very substantial and stiff structure, capable of enduring both lateral and longitudinal strains with great effect and advantage.

I claim—

1. The combination and arrangement of the top and bottom cords, vertical tie-rods, and overlapping or overlapping and interlocking annuli, as described.

2. The combination and arrangement of the top and bottom cords, vertical tie-rods, overlapping or overlapping and interlocking annuli, and an arched beam, the whole being substantially as described and represented.

Witnesses: JOHN BOLES, 2D.

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