

# R. Montgomery Truss Bridge.

No 25,210.

Patented Aug. 23, 1859.

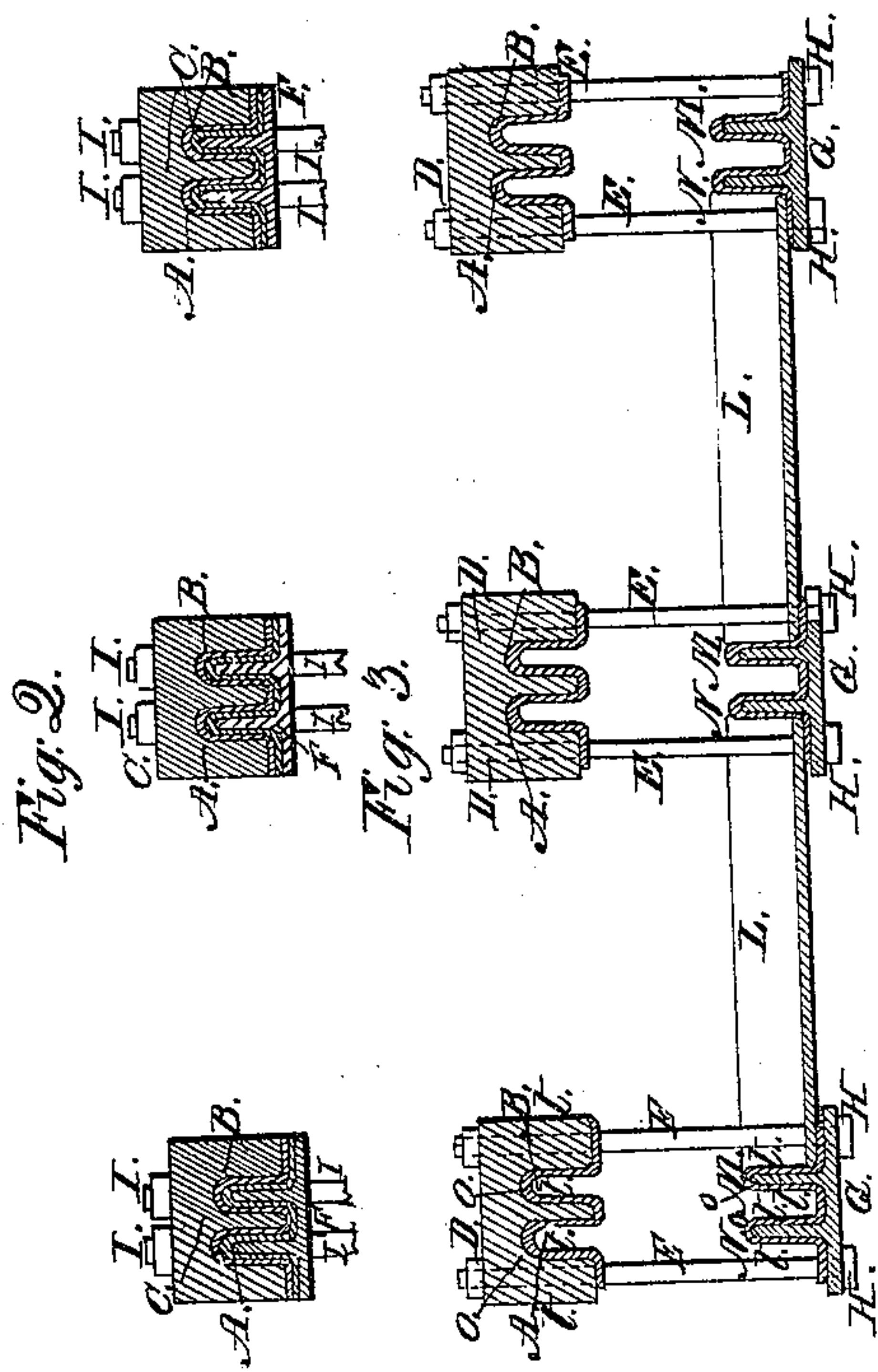
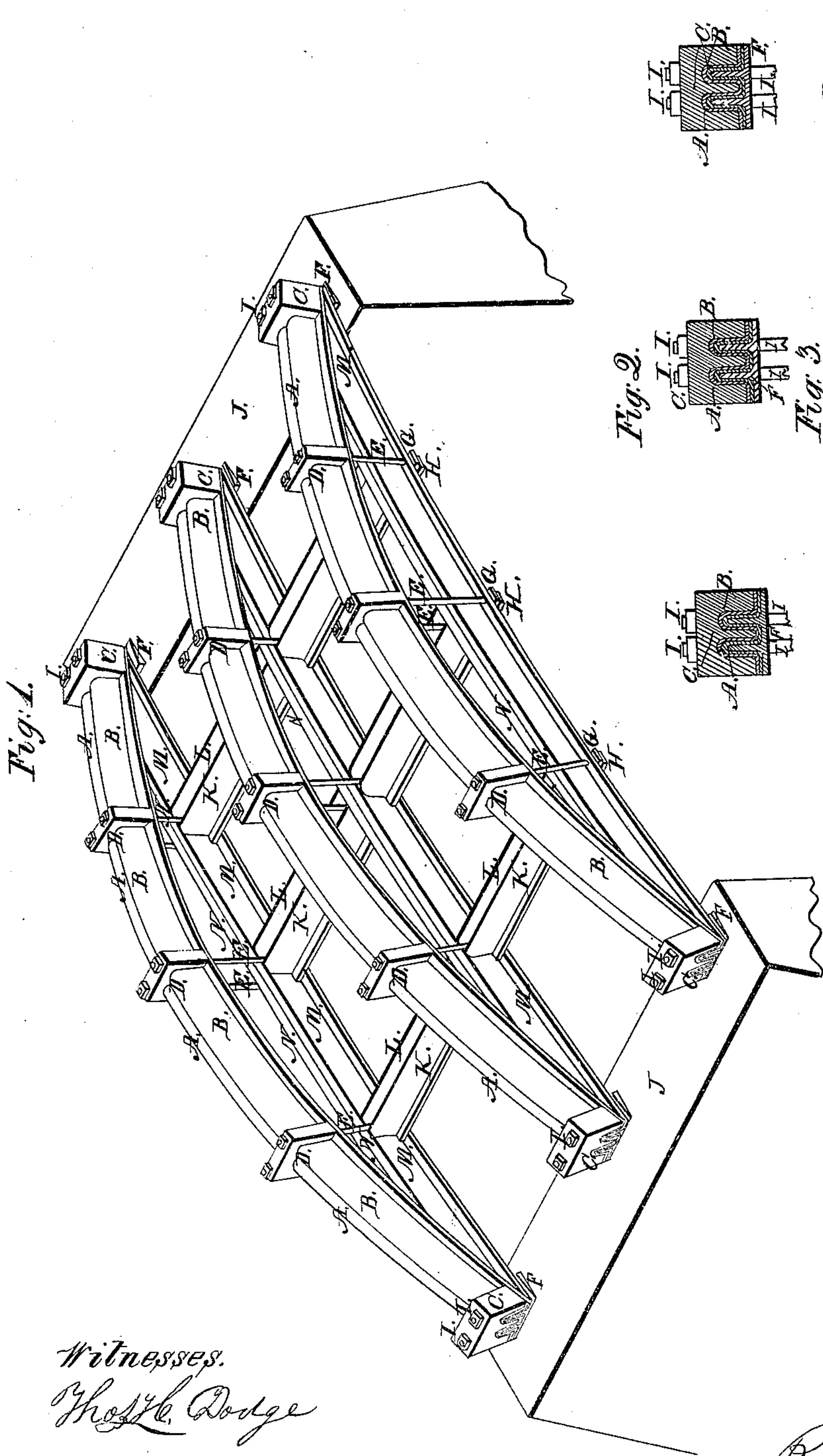


Fig. 4.

Witnesses.  
Thos. H. Dodge  
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# UNITED STATES PATENT OFFICE.

R. MONTGOMERY, OF NEW YORK, N. Y.

## CORRUGATED IRON BRIDGE.

Specification forming part of Letters Patent No. 25,210, dated August 23, 1859; Reissued November 1, 1870, No. 4,172.

*To all whom it may concern:*

Be it known that I, RICHARD MONTGOMERY, of the city, county, and State of New York, have invented an Improved Mode of  
5 Constructing Corrugated Iron Bridges; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference  
10 marked thereon, so as to enable others skilled in the art to make and use my invention.

Figure 1, of the accompanying drawings represents a perspective view of a bridge  
15 constructed on my improved plan; Fig. 2, is a cross section through the blocks C, C, C, parallel with and immediately in front of the bolts I; Fig. 3, is a cross section through the bridge passing through the blocks D, D,  
20 D, parallel with and immediately in front of the bolts E; Fig. 4, is a cross section through one of the cross rails K L.

The bridge as shown in the drawings represents a single span between two abutments  
25 J, J, and consists of three parallel systems of combined arches A B, N M, but it will be understood that any other number of these systems of arches may be used. Each of these systems of arches is composed of one  
30 arch A B, on top and another arch M N, of larger radius below the first one. Both arches of each of these systems are made of corrugated metal the peculiar corrugation of which is plainly shown in Figs. 2 and 3.  
35 The corrugations of the lower arch M N, are such as to fit into the corrugations of the upper arch A B, at both ends which rest on the abutments J, J, and where the two arches meet. The ends of each of these systems of arches rest on bedplates F, project-  
40 ing from the upper surface of the abutments. These bedplates F, have vertical projections which fit into the bottom part of the corrugations of the arches M N, and blocks C, are provided with suitable recesses so as to fit  
45 over the corrugations of the arches A B, as seen in Figs. 1, and 2, and bolts I, pass through the blocks C, through the ends of the arches A, B, and M N, and through the  
50 bed plates F, into the abutments, the whole forming a most substantial connection of the ends of the arches. Between each two of the blocks C C, belonging to one system of arches are three or more blocks D, at  
55 equal distances from each other and similar

in shape to the blocks C, so as to fit over the corrugations of the upper arches A B, while each of the blocks D, has a corresponding bottom plate G, underneath and fitting into the corrugations of the lower arches M N; 60 the bottom plates G, being similar to the bedplates F.

Suspension bolts E, pass through the blocks D, through the flanges of both arches A B, and M N, and through the bottom 65 plates G, the bolt heads H, being below the bottom plates G; all as represented in Figs. 1, and 3. Thus the two arches of each system are united in such a way that their relative position is unchangeable and so that 70 they form a superstructure of great strength.

The three systems of arches represented in the drawings are connected by cross rails L K, and L K, which are also corrugated (see Fig. 4,) similar to the arches. These 75 cross rails rest with their ends upon the flanges of the lower arches M N, immediately above the bottom plates G, and the bolts E, pass through their ends so that they will actually be supported by said bolts, as 80 will be seen in Figs. 1, and 3. These rails K L, K L, serve to support the flooring of the bridge while at the same time they tend to steady and hold the different arches together. 85

It will also be observed that the portions o, o, of the corrugated arches are thicker than at the sides t, t, so that the greatest strength is obtained with a given weight of metal. 90

Having described my improved bridge, what I claim therein as new and desire to secure by Letters Patent, is:

1. The combination of the corrugated arch A B, with the corrugated arch M N, constructed and arranged in relation to each other substantially as described and shown. 95

2. The combination of the peculiarly formed blocks C, and bed plates F, with the abutment ends of the arches A B, and M N, 100 substantially as and for the purposes set forth.

3. The combination of the blocks D, and bottom plates G, with the cross rails K L, and arches A B, and M N, substantially as 105 and for the purposes described.

R. MONTGOMERY.

Witnesses:

THOS. H. DODGE,  
J. QUINCY ADAMS.