

J. M. McDONALD.

TRUSS-BRIDGE.

No. 173,863.

Patented Feb. 22, 1876..

Fig: 1.

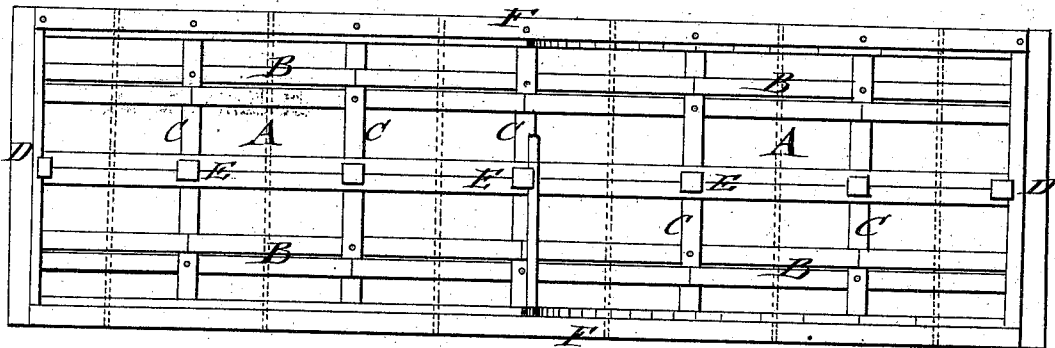


Fig: 2.

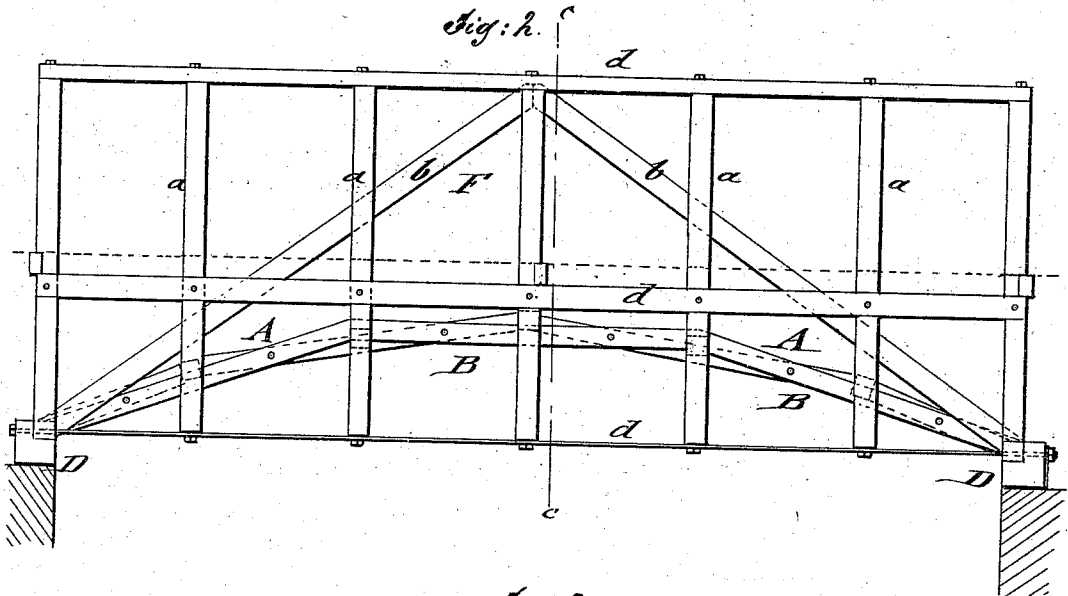
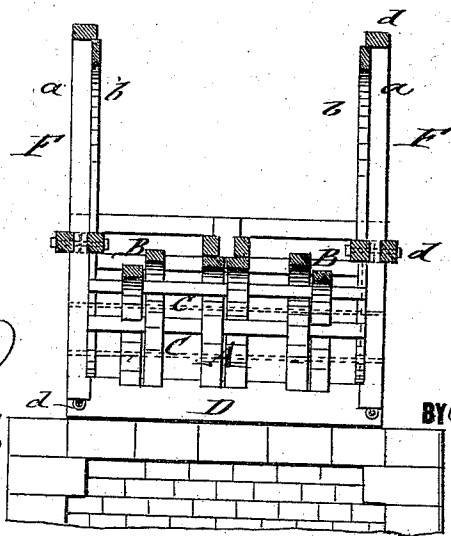


Fig: 3.



WITNESSES:

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JOSEPH M. McDONALD, OF TOMLINSON, ARKANSAS.

IMPROVEMENT IN TRUSS-BRIDGES.

Specification forming part of Letters Patent No. 173,863, dated February 22, 1876; application filed December 11, 1875.

To all whom it may concern:

Be it known that I, JOSEPH M. McDONALD, of Tomlinson, in the county of Scott and State of Arkansas, have invented a new and Improved Bridge, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a plan view, Fig. 2 a side elevation, and Fig. 3 a vertical transverse section, of my improved bridge on the line *c c*, Fig. 2.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved bridge construction, for larger and smaller spans, to be made of wood or iron; and consists, mainly, in the construction of an arch made of laterally braced and bolted pieces of alternately interlocking timber, in combination with braced and longitudinally connected side and intermediate trusses.

In the drawing, A represents the central arched part of my improved bridge, which is constructed of pieces of timber of suitable length, which are either set on edge, and brought in contact with each other, making a solid foundation, or two or more pieces may be lapped at the ends, and arranged to leave a space of suitable width between each set of timbers, the whole being laterally bound together by iron bolts at intermediate points.

The adjoining timbers B of each set or pair are so arranged that the joint of two pieces is centrally between the joints of the adjoining pieces, so as to alternate therewith, and form with the lateral cross-pieces C, passing between the center of one piece and the joint of the adjoining piece, a rigidly-interlocking arch of considerable strength, which, with suitable flooring, &c., may be employed as a separate structure, if desired.

The ends of the arch-timbers are seated into wooden or iron shoes D, secured to the abutments or piers, and the flooring and railing of the bridge placed on vertical supporting-posts E, attached to the cross-pieces of the arch.

The arch-timbers may be doubled, trebled, &c., by placing one arch on the other, for bridges with larger spans and increased strength. At both sides, and, if desired, in the center of the arch A, are trusses F, that are made of vertical posts *a*, brace-pieces *b*, and longitudinal top, intermediate and bottom timbers *d*, which are properly bolted together. The trusses F are attached to the central and terminal cross-pieces of the arch by which the connection of the arch and trusses, and at the same time the separate working of each part, is obtained. In place of the bottom pieces of the trusses, iron rods may be employed, which are looped on tenons of the lower ends of the posts. The posts are steadied by cross-ties at the top and bottom, if additional stiffness is required. The bridge forms by the arch and truss connection a compound structure of great strength, which is at the same time of simple, durable, and economical construction.

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

The combination of arch A, timbers B, cross-pieces C, shoes D, supports E, and trusses *a b d F*, all constructed and arranged as shown and described, for the purpose specified.

JOSEPH M. McDONALD.

Witnesses:

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