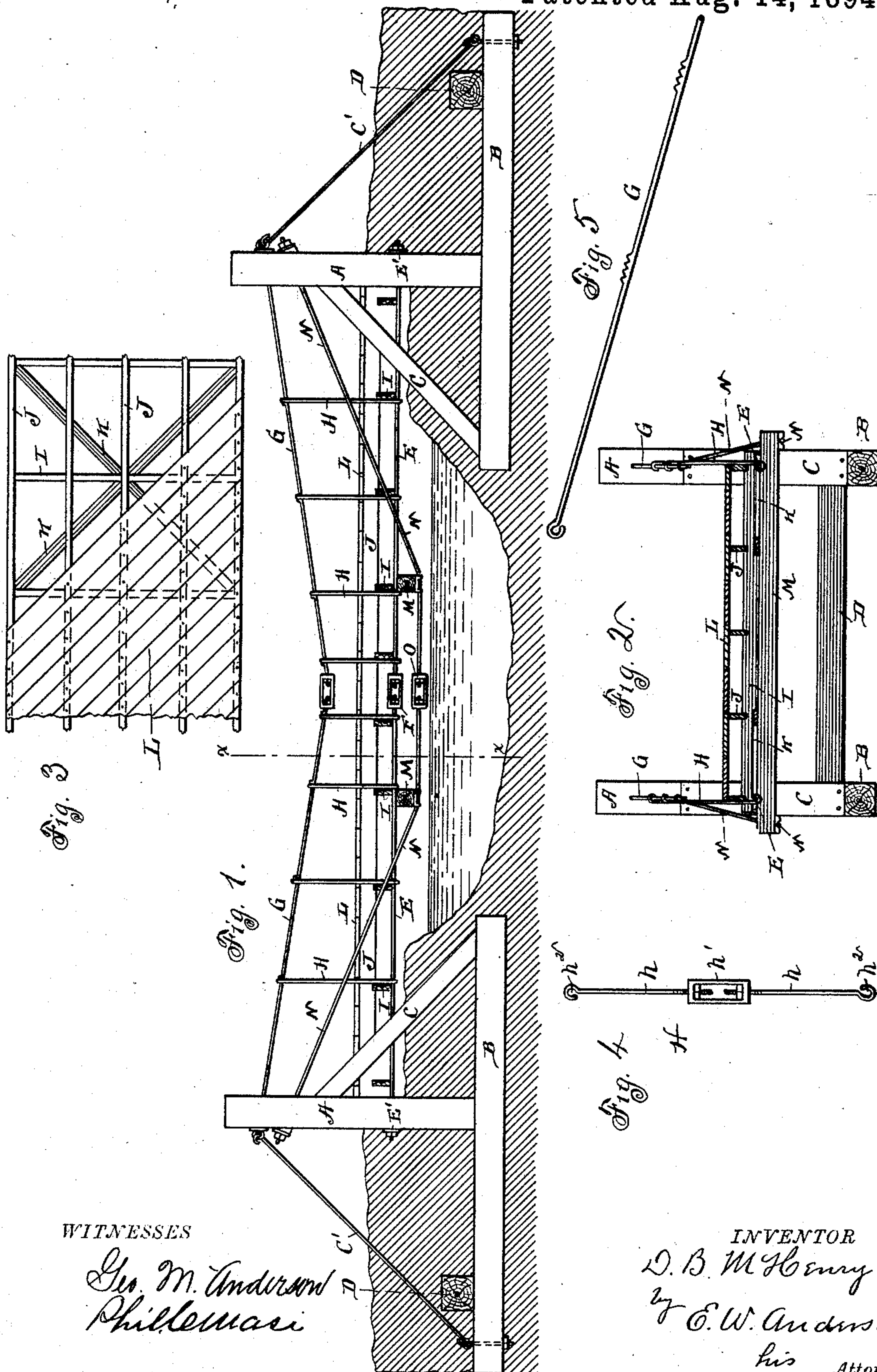


(No Model.)

D. B. McHENRY.
SUSPENSION BRIDGE.

No. 524,486.

Patented Aug. 14, 1894.



WITNESSES

Geo. M. Anderson
Phillemari

INVENTOR

D. B. McHenry
by E. W. Anderson
his Attorney

UNITED STATES PATENT OFFICE.

DAVID B. MCHENRY, OF GRENADA, MISSISSIPPI.

SUSPENSION-BRIDGE.

SPECIFICATION forming part of Letters Patent No. 524,486, dated August 14, 1894.

Application filed February 13, 1894. Serial No. 500,034. (No model.)

To all whom it may concern:

Be it known that I, DAVID B. MCHENRY, a citizen of the United States, and a resident of Grenada, in the county of Grenada and State of Mississippi, have invented certain new and useful Improvements in Suspension-Bridges; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side elevation of a bridge embodying my invention. Fig. 2 is a transverse vertical section on the line $x-x$, Fig. 1. Fig. 3 is a plan view of a portion of the bridge with the flooring partially removed. Fig. 4 is a detail view showing a modified form of hanger, and Fig. 5 is a similar view of a portion of one of the upper suspension-rods.

This invention has relation to certain new and useful improvements in suspension bridges, and it consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the appended claims.

My object is to provide a bridge of the above named character, designed for comparatively short spans, of greatly simplified construction and capable of being erected at a comparatively small cost, the parts being so constructed and combined as to unite the maximum of strength with the minimum of lightness.

Referring to the accompanying drawings, the letters A, A, designate the piers or abutments, which are usually constructed in the following manner: Sunk in the ground under each pier at the proper distance from each other, are two mud sills B, B, which lie parallel with the length of the span, and which are anchored in any suitable manner. These sills form the supports for the upright posts or piers A, A, which are secured thereto, and braced by the heavy struts C, C, on the span side. C', C' are anchor rods from the posts to the mud sills. The two mud sills may be connected by suitable trusses or beams D.

E, E, designate the lower horizontal longitudinal suspension rods one at each side, whose end portions pass through the struts C, uprights A, A, and through bearing plates E', and are secured by nuts, or in any other approved manner. Each of said rods is formed in two or more sections united by turn buckles F.

G, G, designate the upper suspension rods, also formed each in two or more sections, connected in the same manner as the rods E, E, and also secured in the uprights. These rods G, G, are not parallel with the lower rods, but have a downward curve to the center.

The rods G and E on each side are connected by a series of hangers H. For spans of less than thirty feet, these hangers may consist simply of a rod having a hook at each end for engagement with the respective suspension rods. For spans of over thirty feet, the hangers should however be constructed as shown in Fig. 4, in two sections h, h , connected by a turn buckle h' , and having eyes h^2 for engagement with the suspension rods. The upper rods are usually corrugated where they are engaged by said eyes in order to prevent slipping of the hangers.

The rods G, G, form the supports for a series of transverse floor joists I, upon which rest longitudinal floor beams J. The joists I are braced by diagonal crossing braces K. The flooring boards L are laid obliquely on the floor beams J.

M, M, are two truss beams extending transversely underneath the central portion of the span, and supported by suspension rods N from the piers. The said rods are usually made each in two or more sections, connected at the center or at equal distances therefrom by a turn buckle O. The longitudinal floor beams J, J, have a support in the struts C, C.

It will be observed that by the employment of the parallel beams M M, placed at some distance apart, a secure support is provided for the central portion of the bridge, and arching of the lower suspension rods or cables is avoided. Also that the suspension chains N extend directly to the piers, which receive directly the strain of said cables, and thus does away with the necessity for the additional cables to which similar rods have sometimes

been attached, and reducing the number of parts required without detracting from the strength.

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

1. In a suspension bridge, the piers, the lower horizontal suspension rods, the upper suspension rods, the series of hangers connecting said upper and lower rods upon each side, the parallel transverse central beams M M, at some distance from each other, and suspension rods N supporting said beams, and connected directly to the piers, substantially as specified.

15 2. In a suspension bridge, the combination with the piers or abutments, of the lower sus-

pension rods E, E, the upper suspension rods G, G, the hangers H connecting the upper and lower suspension rods, the transverse floor joists supported directly upon the rods E, E, the floor beams supported upon said joists, the diagonal braces for said joists, the central truss beams M, M, and their suspension rods N, said rods N, and the rods E, E, and G, G, being formed each in sections connected by turn buckles, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID B. MCHENRY.

Witnesses:

C. T. WOOD,
R. B. RICE.