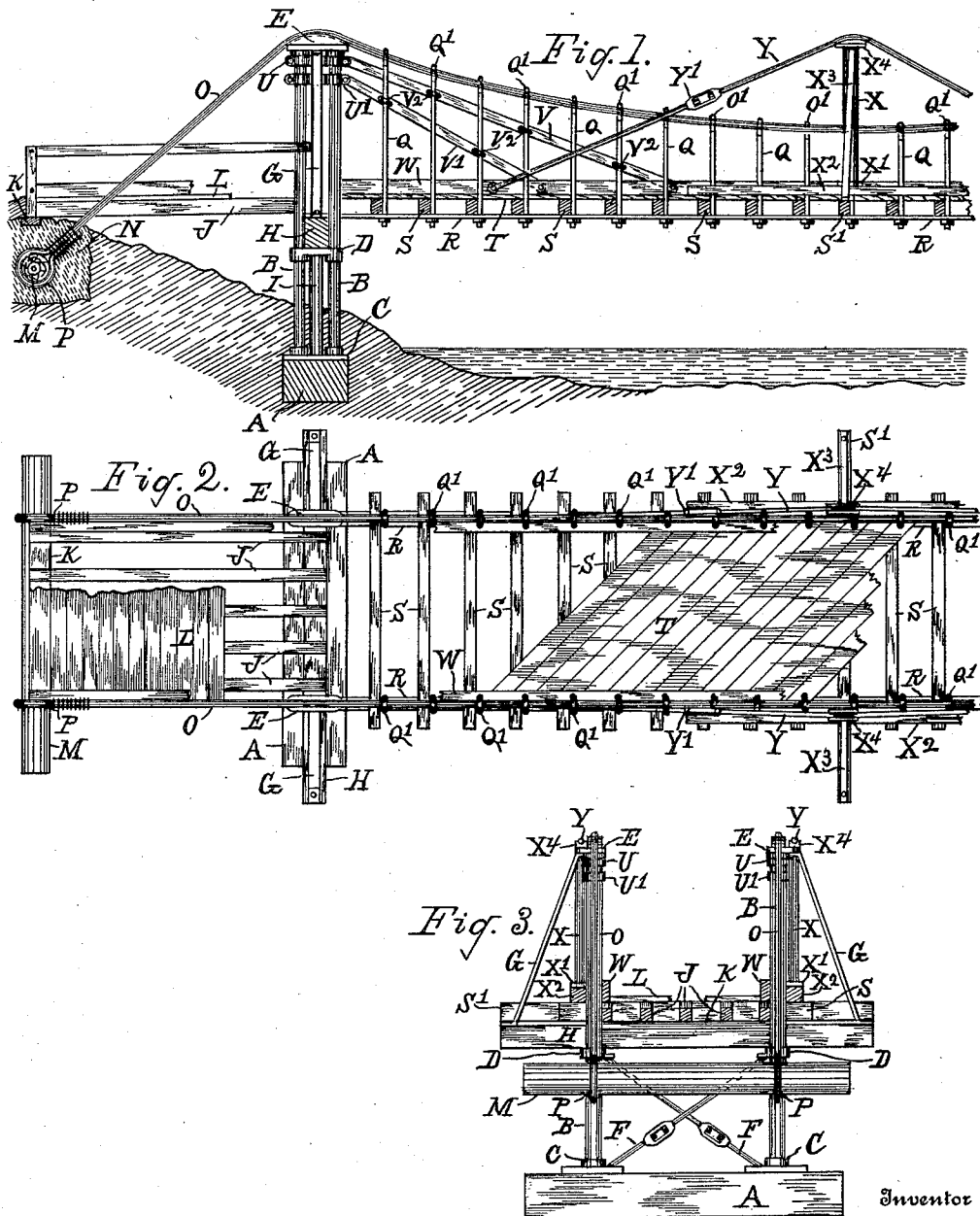


W. H. C. GREER.
SUSPENSION BRIDGE.
APPLICATION FILED DEC. 28, 1911.

1,019,458.

Patented Mar. 5, 1912.



Witnesses
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WILLIAM H. C. GREER, OF SHERMAN, TEXAS.

SUSPENSION-BRIDGE.

1,019,458.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed December 28, 1911. Serial No. 668,380.

To all whom it may concern:

Be it known that I, WILLIAM H. C. GREER, a citizen of the United States, residing at Sherman, in the county of Grayson and State of Texas, have invented certain new and useful Improvements in Suspension-Bridges, of which the following is a specification.

This invention pertains to suspension bridges, and relates particularly to mechanism for overcoming the vertical motion in floors of spans of such bridges and, furthermore, to provide a permanent anchorage for the cables.

In a former patent issued to me on the 30th day of August, 1910, No. 968,552, a suspension bridge is described and shown but does not include means for effectually bracing and anchoring the structure.

It is the object, therefore, of the present application to include these features.

With these ends in view my invention consists in the novel features of construction and combinations of parts shown in the annexed drawings to which reference is hereby made and hereinafter particularly described and finally recited in the claim.

Referring to the drawings in which similar reference letters designate like parts in the several views; Figure 1 is a side elevation of a portion of a bridge constructed in accordance with my invention; Fig. 2 is a plan view of the same, the flooring being broken away to expose the frame work; Fig. 3 is an end view.

Upon each of the opposite banks of a river or other way, upon transverse base sills A, I provide opposite pairs of parallel vertical pillars B, preferably of iron pipe; the lower ends of each resting in sockets formed in the sill plates C; the pairs being further connected and supported by means of movable cap plates D and saddles E, and they are braced at their lower ends by means of diagonal rods F, and at the top by diagonal braces G; all of which serve to maintain the pillars in rigid relative position. Extending from one to the other of the opposite towers B, and resting upon the cap plates D, is a transverse cap or sill H, the ends of which project beyond the towers some distance as shown; the cap plates being supported by the intermediate short pillars I interposed between them and the sill plates C.

J represents longitudinal beams or string-

ers which extend from the cap H to a shore sill K. Upon said beams is laid the flooring L forming an approach to the bridge at opposite ends of the span.

In the banks beyond the towers, where solid earth may be found, I form transverse ditches or anchoring pits and sink therein transverse anchors M, which may be of tough logs or of iron as may be desired, and they are embedded in a solid mass of concrete N. Extending from saddle to saddle E of the opposite towers are suspension cables O, the same being of ample strength and, as usual, sagging between their points of support. The opposite ends of these cables, that is from the towers to their extremities, decline toward the anchorage, and for the reception of the same the ground is ditched, enabling them to extend freely to the anchorage where they are provided with loops P, through which the anchoring logs pass, so that the ends of the cables become very firmly secured and cannot slip.

Q designates a series of vertical suspension rods, the same being preferably formed of round iron and varying in length, that is being longer toward the ends of the series than at the center. The rods have hooks Q¹ at their upper ends, the said hooks engaging the suspension-cables between the towers. The lower ends of these rods extend through perforations in longitudinal metal plates R which perforations are arranged at intervals agreeing with the space between the rods. The ends of the rods below the plates are threaded and nuts applied rendering the plates capable of supporting the floor beams S which rest upon them adjacent to the rods, and these beams support the road bed T.

Secured to the pillars of each tower and located one above the other, are metal clamps U, U¹. To U is secured an angle iron bar V, that extends downward diagonally for about one third of the span of the bridge where it is bolted to the inner side of the wheel guard W. From the clamp U¹, extends a similar angle bar V¹ that extends along the side of the bridge about one half the distance of that of V, where it is also bolted to the wheel guard. The bars are secured to the vertical rods Q by U stirrups V².

Located centrally of the span, and adjacent to the outside of the cables are pillars X preferably of iron pipe, and about the

height of pillars B. They rest upon plates X^1 , supported by timbers X^2 and are braced by diagonal braces X^3 secured to the floor beam S^1 . Over the saddles X^4 a truss rod Y extends diagonally to the wheel guard W to which it is secured. Turnbuckles Y^1 are provided to give the rods the desired tension. These rods, together with the braces V, V^1 reduce to a minimum the vertical vibrations of the roadway.

From the construction described it will be observed that a comparatively simple and very rigid bridge is provided with all of the parts adapted to be erected without the usual expensive false work.

What I claim, is:

In a suspension bridge, the combination with supporting pillars arranged on each bank, of cables anchored in a bed of concrete and passing over the tops of the pillars and connecting the pillars on opposite banks, a series of rods depending from the cables, horizontally disposed plates extending to

the opposite pillars, the intermediate portion of said plates being supported by the rods, transverse beams supported by the plates, a flooring carried by the beams, wheel guards bearing upon the flooring for retaining the same upon the beams, braces secured to the top of the pillars and extending outwardly and downwardly to the wheel guards to which they are secured and also connected to the depending rods, a central pillar adjacent to each of the cables, a truss rod passing over the top of each of the pillars and extending outwardly and downwardly in either direction to the wheel guards to which the ends are secured, as herein shown and described.

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

WILLIAM H. C. GREER.

Witnesses:

W. L. HAY,

LUCY FISCHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."