

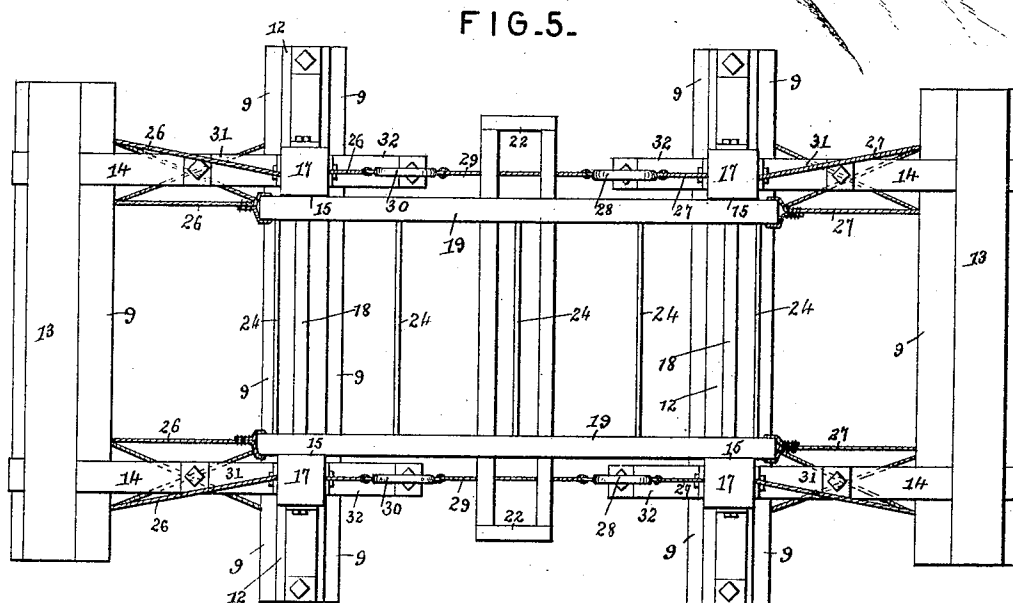
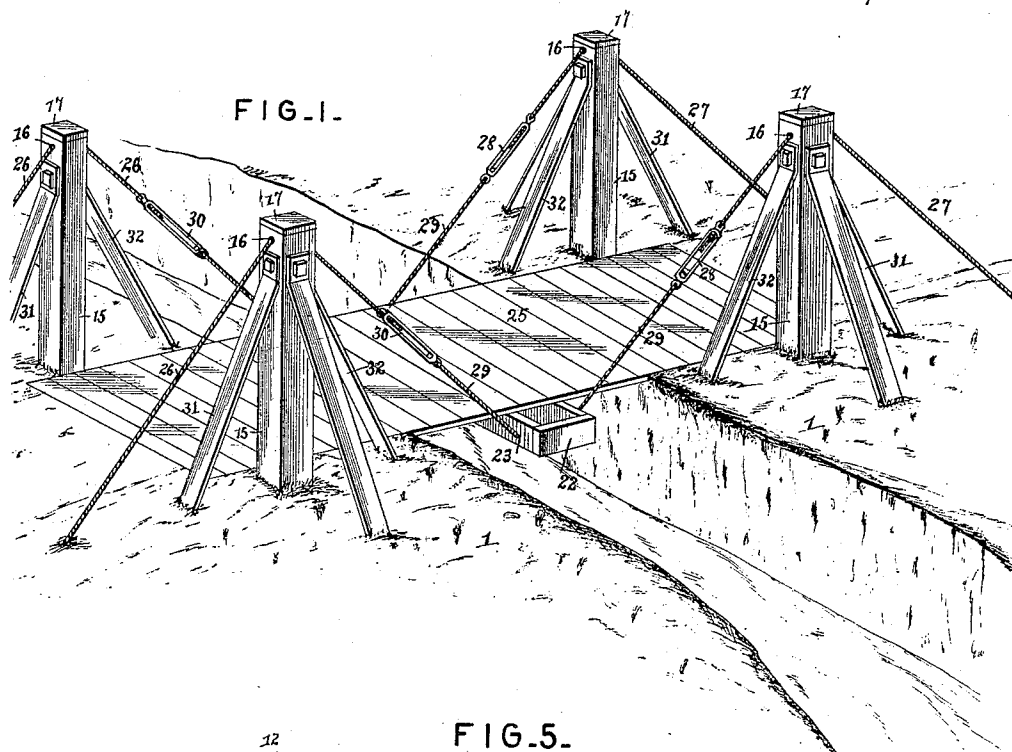
(No Model.)

2 Sheets—Sheet 1.

G. P. MILLER.
BRIDGE.

No. 467,013.

Patented Jan. 12, 1892.



Witnesses

Jas. K. McLathran
W. S. Duval.

Inventor

George P. Miller

By his Attorneys,

Cashow & Co.

(No Model.)

2 Sheets—Sheet 2.

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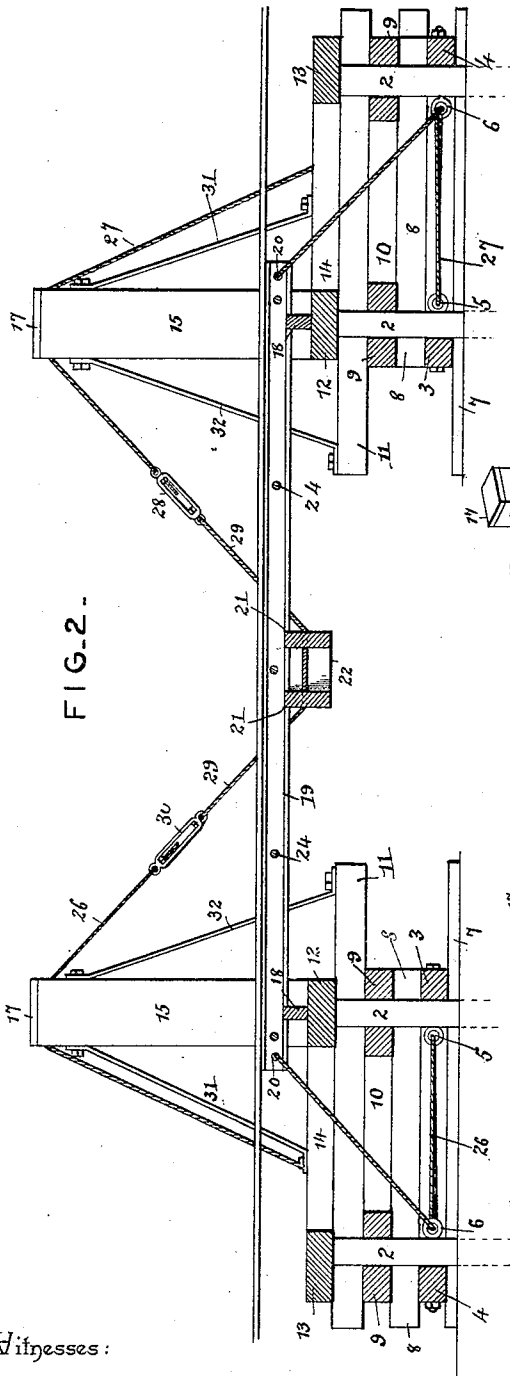


FIG-4 -

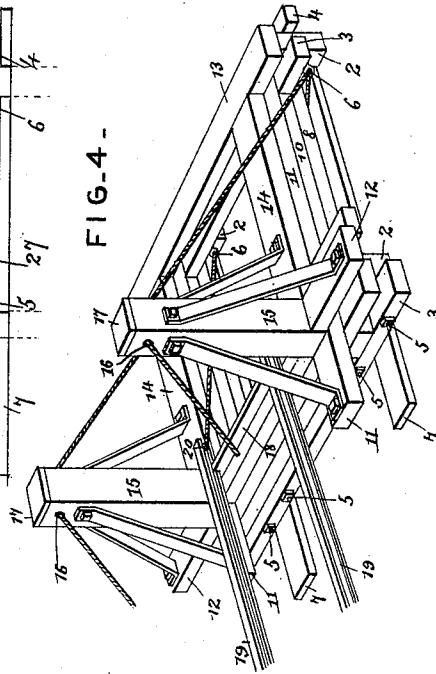
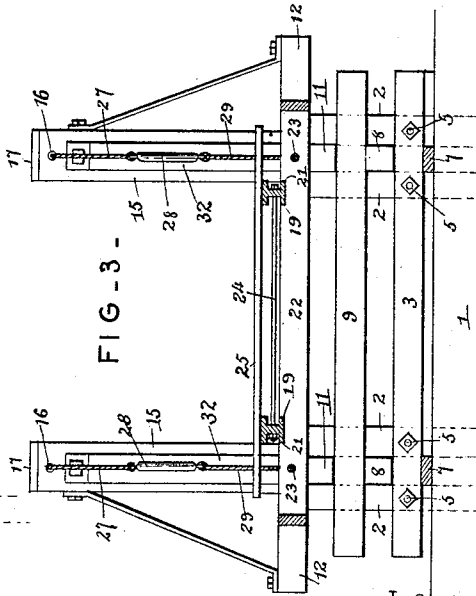


FIG-3 -



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE PARSONS-MILLER, OF HAWESVILLE, KENTUCKY.

BRIDGE.

SPECIFICATION forming part of Letters Patent No. 467,013, dated January 12, 1892.

Application filed May 7, 1891. Serial No. 391,935. (No model.)

To all whom it may concern:

Be it known that I, GEORGE PARSONS-MILLER, a citizen of the United States, residing at Hawesville, in the county of Hancock and State of Kentucky, have invented a new and useful Bridge, of which the following is a specification.

This invention relates to improvements in bridges, and especially to that class employed for spanning narrow streams, cuts, &c.; and the objects in view are to provide a bridge of cheap and simple construction, great durability, and which will require but little repair to keep it in order.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a bridge constructed in accordance with my invention. Fig. 2 is a vertical longitudinal section. Fig. 3 is a transverse section. Fig. 4 is a detail in perspective of one of the abutments. Fig. 5 is a plan of the bridge.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practice I form in the opposite banks of a stream, cut, or other space to be spanned foundations 1, which foundations are dug or excavated to a depth adapting them to receive completely the abutments of the bridge. In each corner of each foundation 1 I locate a pair of vertical parallel posts 2, the posts of each pair being located a slight distance apart. In front and in rear of the opposite pairs of posts 2 I locate transverse anchor-beams 3 and 4, respectively. The anchor-beams 3 have passed therethrough and through each of the posts 2 at the front of the excavation eyebolts 5, the eyes of which are inwardly disposed. Similar eyebolts 6 are passed through the anchor-beams 4, and through the rear pairs of posts 2. Mud-sills 7 rest upon the bottom of the foundation between the longitudinally-opposite pairs of posts 2. Between the longitudinally-opposite pairs of posts 2 and upon the anchoring-beams 3 and 4 rest longitudinal timbers 8. The transverse pairs of posts 2 are connected by cross-timbers 9, resting upon the timbers 8 and located at each side of the posts. The

spaces between the inner timbers 9 are filled by filling-timbers 10. Resting upon the front and rear pairs of cross-timbers 9, overlapping the same, and interposed between the longitudinally-opposite pairs of posts 2, are extension-timbers 11, and surmounting the posts are transverse front and rear sills 12 and 13, the spaces between which are filled by longitudinal timbers 14. Securely bolted or otherwise connected to the front sills of each abutment thus constructed is a pair of pillars 15, said pillars being located directly over the front pairs of posts 2. These pillars are preferably formed of sections of slab-iron bolted together and therefore hollow, and are filled to within a short distance of their upper ends, at which points they are provided with transverse openings 16. These pillars are each surmounted by a cap 17.

Iron girders 18 are connected to each pair of pillars and rest upon the front sills 12, and seated upon the sills and connecting the abutments is a pair of beams 19, provided at their extremities with eyes 20. At their centers the beams 19 are let into seats or notches 21, formed in a transverse supporting yoke or saddle 22, formed of slab-iron and provided near its ends with transverse openings 23, which are in line with the perforations 16 of the longitudinally-opposite pair of pillars 15.

Upon the beams 19, which, it will be observed, are connected throughout their length by suitable tie-bolts 24, is laid the surface or flooring 25 of the structure.

To each of the pairs of eyebolts 5 of each abutment are connected cables 26 and 27. These cables are crossed under the timbers 8, are passed up vertically through the eyebolts 6 of the anchoring-beams 4, and the inner cable passed up the inside of the abutment and connected to the eyes 20 of the beams 19. The outer cable passes up the outside of the abutments, through the openings 16 of the pillars, and are connected to turn-buckles 28 and 30, each pair of which is connected by a cable-suspension section 29, passing through the perforations 23 of the saddle 22 and supporting the latter. By means of the turn-buckles 28 and 30 the tension of the cables 26 and 27 may be regulated, as will be apparent.

Braces 31 extend from the filling-timbers 14 to the outer sides of the pillars, while braces 32 extend from the inner extended ends of the extension-timbers 11 to the inner 5 faces of said pillars.

After constructing the abutments as heretofore described the excavations are completely filled with earth, the surface of which is up level with the flooring of the bridge, or 10 nearly so. By thus completely burying the abutments the material (wood) of which they are constructed is preserved for a great length of time against decay. The wood from which the timbers are formed is preferably green, 15 so that decay is the longer postponed. I have found by experience that abutments may be thus cheaply constructed of green and really inferior wood, and when buried and preserved will last for a long period of time.

20 By the above I effect a great saving in expensive masonry, substituting therefor wood, and construct a bridge of great strength, durability, and simplicity, the exposed parts being of metal, and one in which the strain is 25 equalized and disposed in various directions, so that the structure as a whole is capable of withstanding all the various strains usually resulting from swollen rivers, floating ice, &c.

Having described my invention, what I claim 30 is—

1. In a bridge, an abutment consisting of pairs of posts located at the four corners of a rectangular excavation, sills 12 and 13 connecting the front and rear pairs, respectively, 35 a series of longitudinally-disposed timbers located between the posts of the longitudinally-opposite pairs, and cross-timbers interposed between said longitudinally-disposed timbers, the frame or abutment thus formed being 40 ing filled with dirt, substantially as specified.

2. In a bridge, the combination, with the

opposite abutments, each consisting of the four pairs of posts, the posts composing each pair being arranged vertical and parallel to 45 each other, the timbers connecting these posts to constitute a pen, sills surmounting the posts, and anchor-beams located against the outer faces of the inner posts, of pillars 50 mounted above the inner beams and upon the innersills and provided with openings, beams spanning the space between and resting upon the inner sills, the transverse saddle located under the beams, and cables connected to the 55 anchoring-beams, to the outer posts, passed through the openings in the upper ends of the pillars, and connected with the transverse saddle, substantially as specified.

3. In a bridge, the combination, with the opposite abutments comprising pairs of posts and timbers connecting the same to form a 60 pen, of anchoring-beams located at the outer sides of the front and rear pairs of timbers, pillars located above the inner posts, sills 65 mounted on the posts and supporting the pillars, floor-beams connecting the sills and spanning the space between the same, cables leading from the inner anchoring-beams to the outer anchoring-beams, to which latter 70 they are connected, the inner cables being connected to the floor-beam and the outer cables passed through openings in the pillars, the transverse saddle supporting the floor-beams, and cables passing through perforations in the saddle and connected to the outer 75 cables of the pillars, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE PARSONS-MILLER.

Witnesses:

EDWIN BRASHEAR,
E. O. MILLER.