No. 729,591. PATENTED JUNE 2, 1903.

P. P. JACOB.

BRIDGE ANCHOR.

APPLICATION FILED FEB. 26, 1903.

NO MODEL.

Fig. 1.

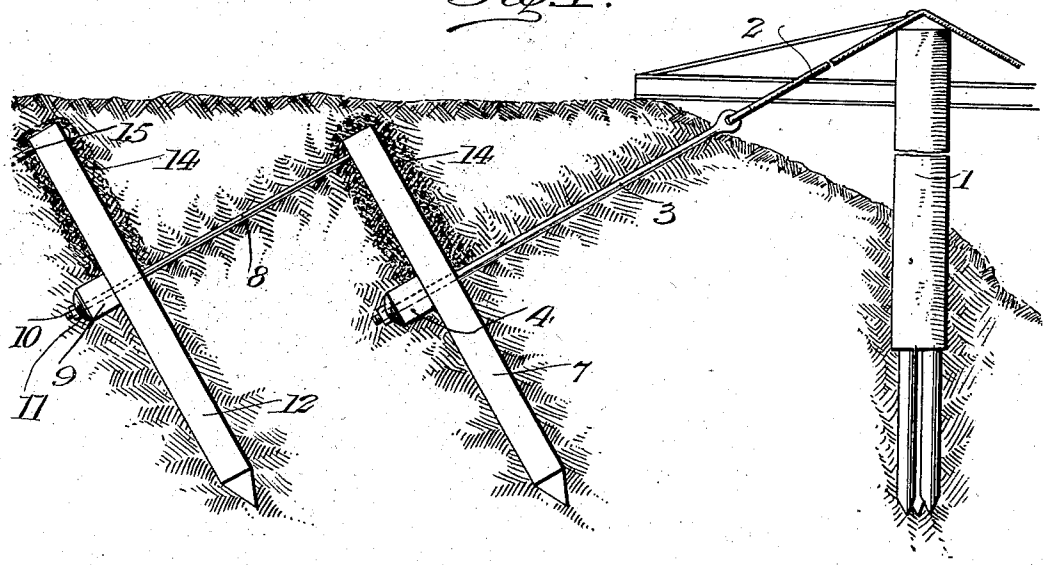
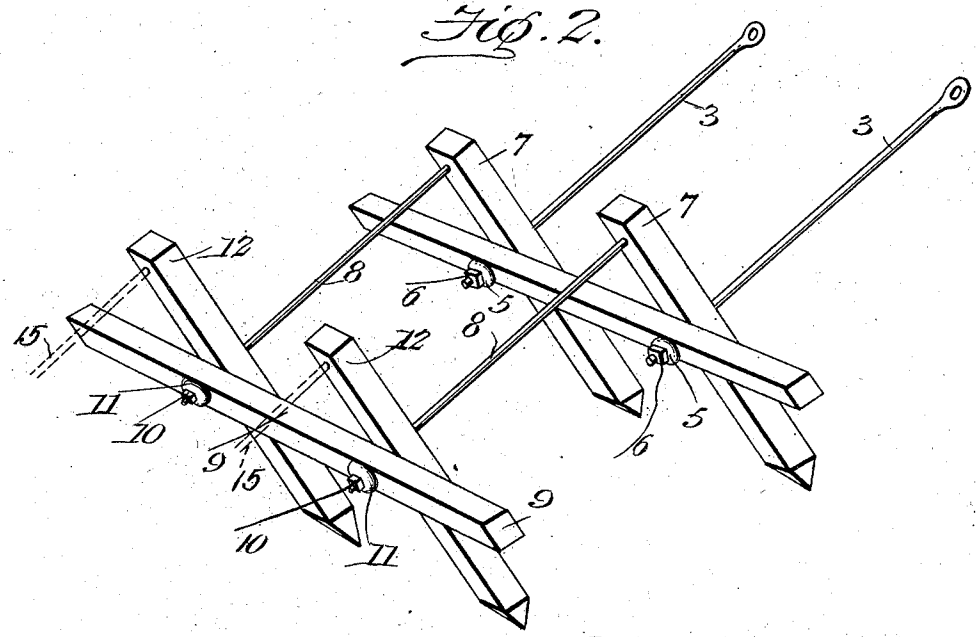


Fig. 2.



Witnesses
E. F. Stewart.
Wm. Baggers

Preston P. Jacob
Inventor
by C. A. Snow & Co.
Attorneys

No. 729,591. Patented June 2, 1903.

UNITED STATES PATENT OFFICE.

PRESTON PEYTON JACOB, OF CLINTON, MISSISSIPPI.

BRIDGE-ANCHOR.

SPECIFICATION forming part of Letters Patent No. 729,591, dated June 2, 1903.

Application filed February 26, 1903. Serial No. 145,279. (No model.)

To all whom it may concern:

Be it known that I, PRESTON PEYTON JACOB, a citizen of the United States, residing at Clinton, in the county of Hinds and State of Mississippi, have invented a new and useful Bridge-Anchor, of which the following is a specification.

This invention relates to anchors for cable or suspension bridges; and it has for its object to provide a device of this class which shall possess superior advantages in point of simplicity, ease of manipulation, and general efficiency.

With these ends in view my invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view taken through the bank at one terminal of the bridge equipped with my improved anchoring device. Fig. 2 is a perspective detail view of my improved anchoring device.

Corresponding parts in both figures are indicated by similar numerals of reference.

In the construction of cable or suspension bridges it is customary to provide at each bank two or more towers or pillars to support the suspension-cables. One of these towers has been shown in Fig. 1, where it is designated 1, the special construction of this element forming no part of my present invention.

In Fig. 1 of the drawings is also shown the end of one of the suspension-cables 2, which passes over the top of the supporting-tower 1. The ends of the suspension-cables are connected each with an iron rod 3, two of which appear in Fig. 2 of the drawings, said rods passing obliquely into the ground and through a timber 4, disposed horizontally in a trench of suitable depth at right angles to the rods 3, which are firmly connected with said timber by means of washers 5 and nuts 6 or in any other suitable manner. The timber 4, which is usually known as the "dead-man," may be of any suitable dimensions, according to the dimensions of the structure which is to be supported; but a comparatively short and light timber may be used, for the reason that, as will be presently seen, a plurality of such timbers are to be employed in the construction of my improved anchor.

In front of the timber or dead-man 4 a couple of piles 7 are driven obliquely at right angles to the rods 3 and preferably closely adjacent to the outer sides of the latter. The upper ends of said piles being inclined upwardly for some distance above the timber 4, it is obvious that said piles will serve to counteract any tendency on the part of said timber to work upwardly or toward the surface.

Through the upper ends of the piles 7 I pass brace-rods 8, which extend obliquely in a downward direction parallel to the rods 3 and through a second horizontally-disposed timber 9, which is located at a suitable distance from the timber 4 and parallel thereto. Nuts and washers 10 and 11 are employed for securing the brace-rods 8 in position. Piles 12 are driven obliquely in front of the timber 9 about like the piles 7 to prevent forward or upward displacement of the timber 9.

The upper ends of the piles 7 and 12 may be embedded in concrete, as shown at 14, to protect them against decay. The remaining parts of the device I do not deem it necessary to protect in this manner, although I reserve the privilege of employing such additional protection, especially for the timbers 4 and 9. I also reserve the privilege of substituting for the wooden timbers or piles, or both, structural iron or any other suitable material whenever it shall be deemed necessary to take such special precautions against decay.

Dotted lines (designated 15 in Fig. 2 of the drawings) indicate additional brace-rods, which may be employed for connecting the upper ends of the piles 12 with an additional timber or dead-man, and an indefinite number of such timbers, piles, and connecting-rods may be employed, according to the span of the bridge under construction and the weight which is to be supported. This of course will be readily understood by those skilled in the art to which my invention appertains.

In the construction of bridges heretofore a single timber called the "dead-man" has been customarily employed, such timber being placed in a horizontal trench and connected with the cables either directly or by means of intermediate rods. In order to in-

sure the desired resistance, it has usually been found necessary to place such timber in a trench of considerable depth, and it has sometimes been reinforced by a number of piles, usually driven vertically. In the latter case the expense of pile-driving has been considerable, owing to the difficulty of driving the piles as the earth becomes compacted.

By my invention excavation to any considerable depth is rendered unnecessary. Comparatively few piles are required, and these are driven obliquely, as set forth. The first set of piles—that is, those nearest the bridge-abutment—prevent the upward dislocation of the timber 4, and said piles are greatly reinforced by the second timber and set of piles, which must be dislocated before the first set will move, as is obvious from the construction set forth. By using additional horizontal timbers and sets of piles and brace-rods structures involving great weight and length of span may be successfully anchored without resorting to excavations of great depth, and any part of the anchoring device will therefore be readily accessible at any time for the purpose of making necessary repairs. It is obvious that the various parts are to be proportioned according to the strain to which they will be subjected. Thus, for instance, the first set of brace-rods 3 will usually be made much stronger than those of the succeeding sets; but I do not wish to be understood as limiting myself in these respects. On the contrary, I reserve the right to any changes and modifications which may be resorted to without departing from the spirit of my invention or sacrificing the utility of the same.

Having thus described my invention, I claim—

1. In a bridge-anchor, the combination of the suspension-cables, a horizontally-disposed timber, brace-rods connecting the latter with the ends of the cables, and piles driven obliquely in front of the horizontal timber closely adjacent to the outer sides of the brace-rods.

2. In a bridge-anchor, the combination of the suspension-cables, a horizontally-disposed timber embedded in the ground, brace-rods connecting said timber with the ends of the cables, piles driven obliquely in front of the horizontal timber closely adjacent to the outer sides of the brace-rods, and concrete caps or coverings for the ends of said piles that project above the horizontal timber.

3. An anchor for suspension-bridges comprising a plurality of horizontally-disposed timbers embedded in the ground, piles driven obliquely in front of said timbers, brace-rods connecting the first timber with the suspension-cables, and auxiliary brace-rods connecting the upper ends of each set of piles with the horizontal timber in rear thereof.

4. A bridge-anchor comprising a plurality of horizontally-disposed timbers, a plurality of obliquely-disposed piles in front of said timbers, brace-rods connecting the front timber with the suspension-cables, and auxiliary brace-rods connecting each horizontal timber, except the front one, with the upper ends of the piles driven in front of the timber next in advance thereof.

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

PRESTON PEYTON JACOB.

Witnesses:
F. G. MARBLE,
H. L. HERRING.