

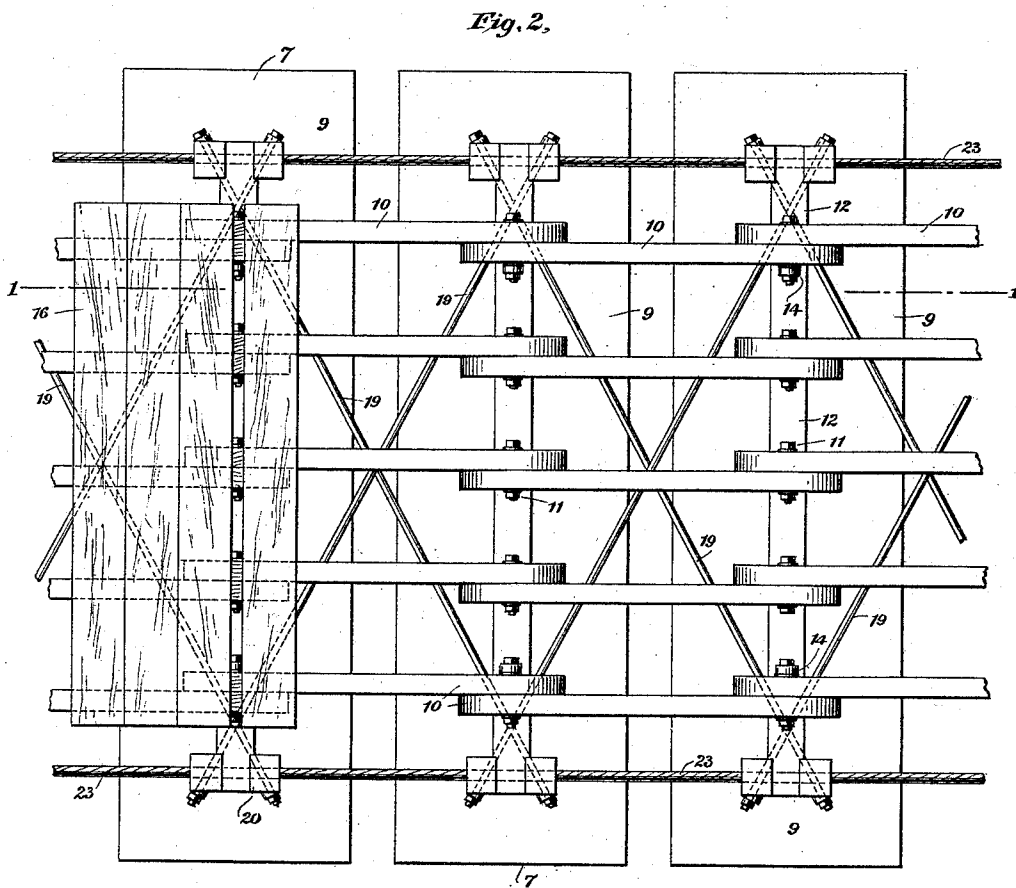
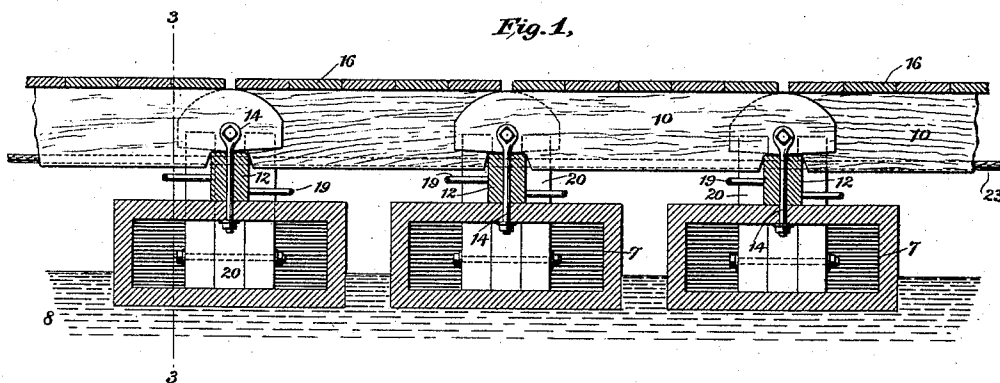
(No Model.)

2 Sheets—Sheet 1.

W. FLYNN.
PONTON BRIDGE.

No. 464,962.

Patented Dec. 15, 1891.



Witnesses
Geo. W. Breech
Edward Thorpe.

Inventor
William Flynn.
By his Attorneys
Fowler & Fowler

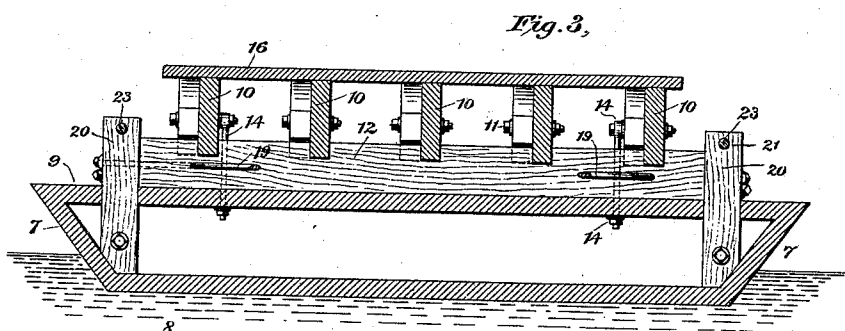
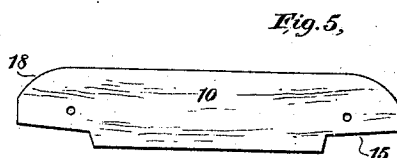
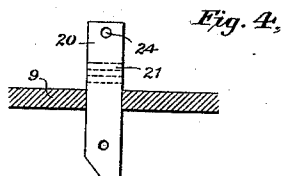
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UNITED STATES PATENT OFFICE.

WILLIAM FLYNN, OF SIOUX CITY, IOWA, ASSIGNOR OF ONE-HALF TO JAMES D. NOONEY, OF SAME PLACE, AND JOHN NOONEY, OF NECEDAH, WISCONSIN.

PONTON-BRIDGE.

SPECIFICATION forming part of Letters Patent No. 464,962, dated December 15, 1891.

Application filed September 29, 1890. Serial No. 366,453. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FLYNN, a citizen of the United States, residing at Sioux City, county of Woodbury, State of Iowa, have invented certain new and useful Improvements in Ponton-Bridges, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to ponton or floating bridges, which consist in general of pontoons or floats secured together on the order of a catamaran; and the invention consists in the novel and peculiar arrangements and combinations of the various parts of the apparatus, all as hereinafter fully described, and then pointed out in the claims.

In the accompanying drawings, illustrating my improved bridge, Figure 1 is a sectional view of a portion of the bridge, taken on a vertical plane longitudinally of the bridge, as indicated by line 1 1 in Fig. 2. Fig. 2 is a top plan view of a portion of the bridge with part of the roadway omitted. Fig. 3 is a sectional view taken on a plane indicated by line 3 3 in Fig. 1. Fig. 4 is an enlarged vertical sectional view of the deck of one of the pontoons, showing the post in elevation, to which a tie-rod and connecting cable or chain is attached, as hereinafter described. Fig. 5 is a detached side view of one of the bridge-beams.

In the said drawings like numbers of reference designate like and corresponding parts throughout

Referring to the drawings, 77 designate pontoons or flat-bottom boats, which are placed together side by side in the water, (indicated at 8.) The pontoons may or may not be provided with a deck 9. Upon adjacent pontoons are mounted by their ends a set of bridge-beams 10 10, which run transversely or crosswise of the pontoons and rest upon a support 12. The adjacent ends of each set of the bridge-beams are hinged together on a horizontal axis in such manner that the pontoons may rock from side to side. In the construction shown the adjacent ends of the sets of beams 10 are overlapped and held movably

together on the support 12 by means of pivots or bolts 11, which are disposed substantially in the same horizontal line, thereby affording a horizontal axis for the beams to swing on.

The bridge-beams 10 are placed upon a support 12, so as to elevate the beams slightly above the deck-level. The supporting-beam 12 is arranged centrally and longitudinally of the ponton and is placed upon the deck 9 thereof; but in the absence of the deck 9 this support may extend from end to end of the boat and be supported in operative position in any suitable manner, the purpose being to have the bridge-beams rest upon this support at a slight elevation above the deck-level.

The hinged ends of the bridge-beams 10 rest upon the support 12 of adjacent pontoons, and these ends may be movably secured to said support by means of a rod 14, which is secured to the support in vertical position and has its upper end formed with a hook or eye, through which passes a pivot or bolt 11 of the beams. The rod 14 may either be an ordinary-shaped screw-eye set in the supporting-beam 12 or it may extend through the beam 12 and down through the deck 9, with a nut upon its lower end, as indicated in the drawings. Each of the hinge-bolts 11 may be provided with one of the connecting-rods 14, or only the bolts at each side of the bridge may be so provided. The lower edge of the beams 10 at each end thereof is formed with a notch 15 for receiving the supporting-beam 12 upon the pontoons. Both faces of the notch 15 are slightly inclined, so that they form an obtuse angle with each other, as shown in Figs. 1 and 5. This construction is designed to give freedom of movement to the pontoons in rolling from side to side and swinging on their hinge-joints.

The bridge-beams 10 support the roadway 16, which may be of any suitable character. The roadway herewith shown consists merely in planks or boards placed across the upper sides of the beams and secured thereto by means of spikes. By virtue of having the pontoons supporting a set of bridge-beams with their adjacent ends hinged together the roadway of the bridge formed thereby is made

up of sections which have a slight motion on the horizontal axes formed by the hinge-joints. The upper edge of the beams 10 is sloped off at the ends, as at 18, so as to permit a certain freedom of movement as the sections move or rock relative to each other.

Between the pontoons are arranged tie-rods 19, each of which has its respective ends secured to opposite ends of adjacent pontoons, so as to extend obliquely between them. These rods are preferably used in pairs so as to cross each other horizontally, and their ends are loosely connected to the pontoons. The tie-rods serve to hold the pontoons in place side by side, since they prevent either lateral or endwise displacement of one ponton relative to the other. The tie-rods may be attached to the pontoons in any suitable manner, though in the construction shown the attachment consists in a post 20, having a horizontal perforation 21, which runs obliquely of the length of the ponton and through which loosely passes the tie-rod 19, the end of which is provided with a nut or cap, the ends of the rod being screw-threaded to receive the cap, which may be tightened or loosened for adjustment. The attaching-posts 20 are preferably located at the extreme ends of the boats or pontoons and near the center thereof, and the rods are preferably placed so as to pass between the bridge-beams and decks of the pontoons, the elevation of the bridge-beams above the deck-level being sufficient to easily permit of this arrangement.

The bridge as above described forms a very firm and permanent structure; but in order to strengthen the entire structure and lash it together more securely I provide the cables 23, which are arranged at each side of the bridge and pass through perforations 24 in each of the posts 20. These connections 23 may be ordinary ropes or chains or wire cables and pass through the posts 20 between the rods 19 and the deck of the ponton and are to be anchored at each end of the bridge or any section thereof in any suitable manner.

The important advantages of the invention are that the weight which may be imposed upon any one of the sections is distributed to the pontoons supporting the other sections. The sections of the bridge have all necessary freedom when moved by the rolling of the pontoons, thereby preventing any severe straining of the structure, and that the structure may be readily taken apart and put together for the purpose of transportation.

Having thus described my improvements in ponton-bridges, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In a ponton-bridge, the combination, with a set of pontoons, each having a centrally-disposed supporting-beam, of a series of bridge-beams for sustaining the roadway, supported at their ends on the supporting-beams of adjacent pontoons, having their adjacent ends hinged together, and connecting-rods

loosely uniting said beams with the pontoons, substantially as and for the purpose set forth.

2. In a ponton-bridge, the combination, with a set of pontoons arranged side by side, of one or more tie-rods connecting one end of one ponton at or about its longitudinal center with the center of the opposite end of an adjacent ponton, substantially as and for the purpose set forth.

3. In a ponton-bridge, the combination, with a set of pontoons arranged side by side and one or more cables or chains running transversely thereof and connecting them together, of one or more tie-rods connecting one end of one ponton at or about its longitudinal center with the center of the opposite end of the adjacent ponton, substantially as and for the purpose set forth.

4. In a ponton-bridge, the combination, with a set of pontoons arranged side by side and provided at their ends with centrally-located posts having perforations or eyes for receiving a connecting cable or chain, of a connecting cable or chain extending transversely of the pontoons and passing through the perforations or eyes of the said posts, and tie-rods connecting a post at one end of a ponton with a post at the opposite end of the adjacent ponton, substantially as and for the purpose set forth.

5. In a ponton-bridge, the combination, with a set of pontoons 7 7, of a series of bridge-beams 10 10 for sustaining the roadway, mounted transversely upon adjacent pontoons and having their adjacent ends hinged or movably connected together and resting upon an adjacent ponton, and connecting-rods 14 for connecting the hinged ends of the beams to the adjacent ponton, substantially as and for the purpose set forth.

6. In a ponton-bridge, the combination, with a set of pontoons 7 7, lashed together side by side, of a series of bridge-beams 10 10 for sustaining the roadway, mounted transversely upon adjacent pontoons and hinged thereto by their ends, the ends of said beams 10 being sloped at 18, and the roadway-planks 16 16, mounted upon beams 10, substantially as and for the purpose set forth.

7. In a ponton-bridge, the combination, with a set of pontoons 7 7 for sustaining the roadway, of attaching-posts 20, mounted near the ends of the pontoons and formed with perforations 21 and 24, the tie-rods 19, connecting diagonally-opposite posts 20 of adjacent pontoons and passing through the perforations 21 thereof, and cables or chains 23, extending through the perforations 24 of said attaching-posts 20, substantially as and for the purpose set forth.

8. In a ponton-bridge, the combination, with a set of pontoons 7 7, each provided with a centrally-disposed supporting-beam 12, of a series of bridge-beams 10 for sustaining the roadway, secured at their ends to the said

supports 12 of adjacent pontoons, having their adjacent ends hinged together by means of bolts 11 and resting upon the said support 12 of adjacent pontoons, and the connecting-
5 rods 14, attached to the adjacent pontoons and loosely connected with the bolts 11, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set

my hand, this 11th day of September, 1890,
in the presence of the two subscribing witnesses.

WILLIAM FLYNN.

Witnesses:

H. V. EASTON,
H. B. EVANS.