No. 885,386. PATENTED APR. 21, 1908.

W. SHARP.

BRIDGE CONSTRUCTION.

APPLICATION FILED SEPT. 6, 1906.

2 SHEETS—SHEET 1.

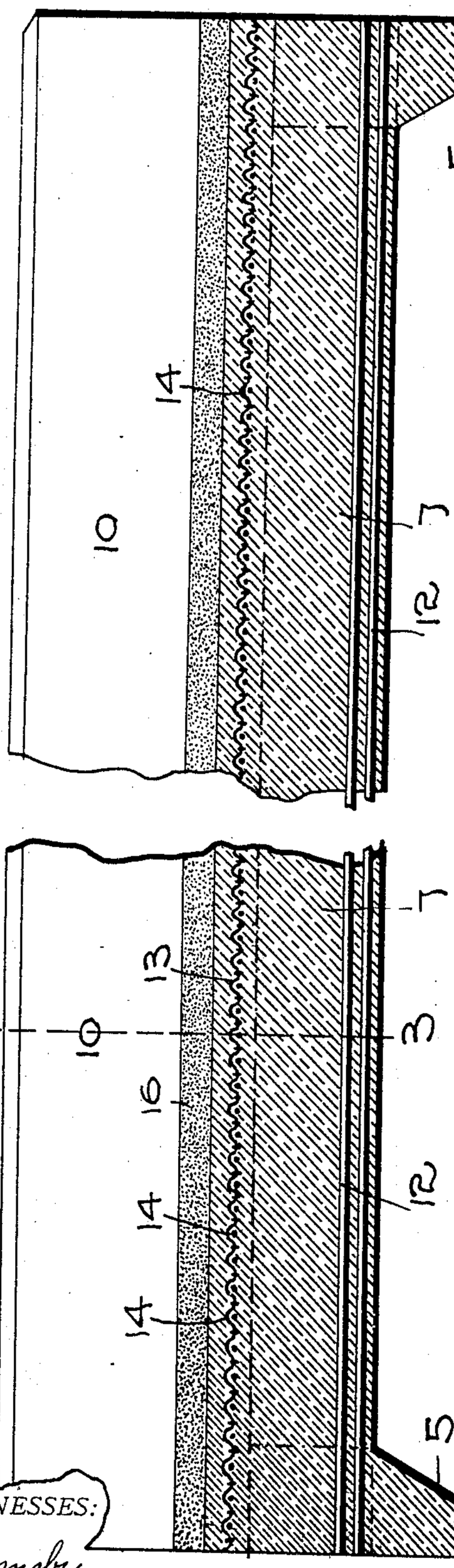

FIG. 1.

FIG. 2.

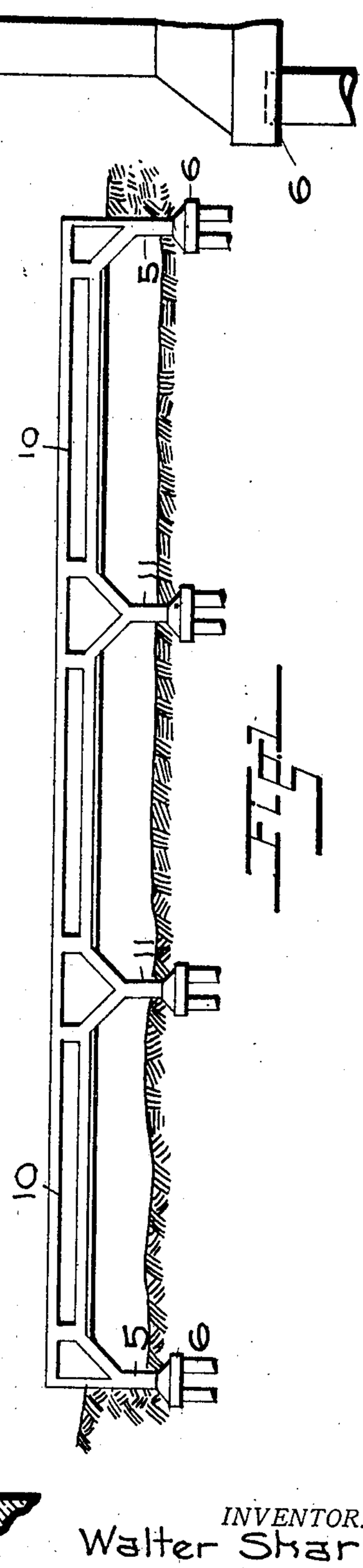

FIG. 3.

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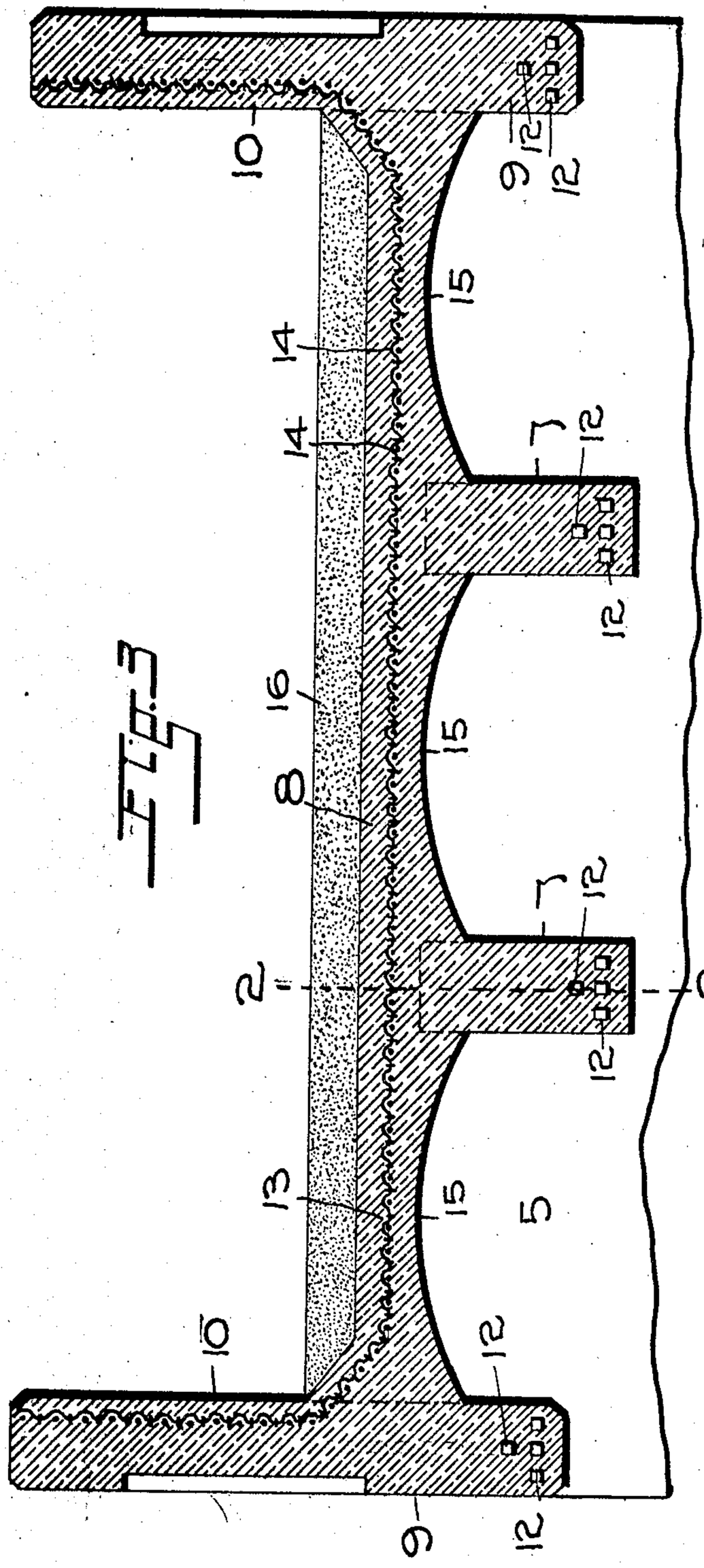
2 SHEETS—SHEET 2.



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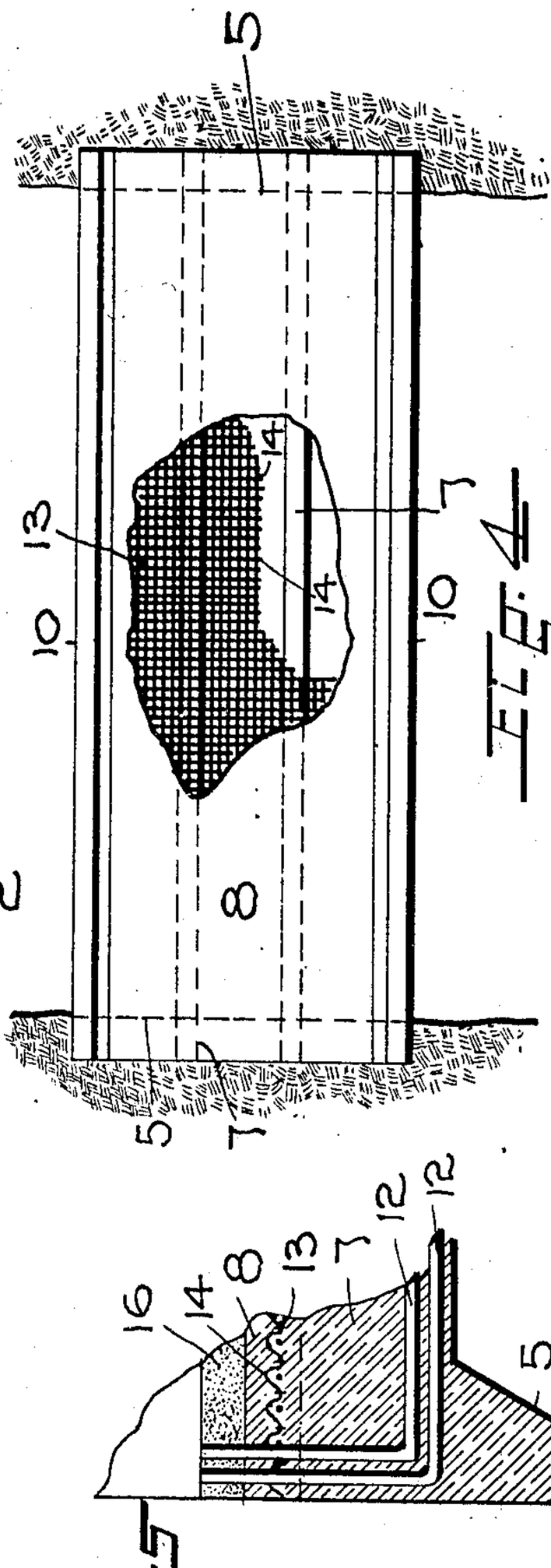

FIG. 4.

FIG. 5.

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WALTER SHARP, OF ELDORADO, KANSAS, ASSIGNOR TO THE WALTER SHARP BRIDGE COMPANY.

BRIDGE CONSTRUCTION.

No. 885,386. Specification of Letters Patent. Patented April 21, 1908.

Application filed September 6, 1906. Serial No. 333,546.

To all whom it may concern:

Be it known that I, WALTER SHARP, a citizen of United States of America, residing at Eldorado, in the county of Butler and State of Kansas, have invented certain new and useful Improvements in Bridge Construction, of which the following is a specification.

My invention relates to a novel bridge construction and has for its object the production of a bridge of simple and inexpensive composition adapted to effectually withstand the stress exerted by overpassing loads and which by reason of its peculiar construction, and the judicious arrangement of its parts is of sufficient strength to resist the devastating effects of floods, and violent storms. I attain this object by the mechanism, illustrated in the accompanying drawings in the various views of which like parts are similarly designated and in which

Figure 1— represents the side elevation of a three span bridge. Fig. 2— a fragmentary longitudinal section on an enlarged scale, through a one span bridge or along a line 2—2, Fig. 3. Fig. 3— a transverse section taken along a line 3—3, Fig. 2. Fig. 4— a plan view of the bridge drawn to a reduced scale and Fig. 5, a fragmentary sectional view, illustrating a modified arrangement of tension rods.

Referring to the drawings, 5 designates the abutment piers which being of suitable strength and stability, are erected on opposite sides of the water course it is desired to bridge, and which are carried upon a suitable foundation 6.

The abutments 5, which are composed of concrete, are connected by a plurality of parallel transverse beams 7, which support the bridge floor 8, and the exterior beams 9, which sustaining the floor at its longitudinal, outer edges, are extended above the upper surface or roadbed of the structure to form the sides or parapets 10 of the bridge.

Beams 7 and 9, as well as floor 8, are like the abutment piers 5, composed of concrete so that, when the entire structure is completed, the various parts of which it is composed will, by coalescence, form one solid and coherent mass.

In long bridges (see Fig. 1) where in addition to the abutment piers 5, intermediate piers 11 are required to adequately support the floor, the latter are likewise composed of concrete, and with the abutments and the transverse beams, coalesce with the superposed flooring 8.

Beams 7 and 9 are reinforced by a plurality of parallel tension rods 12 which being embedded therein, in proximity to their lower edges; extend longitudinally and terminate in the abutment piers 5.

Rods 12, which may be of any desired shape in cross section and arranged in any suitable manner in relation to each other, should be sufficiently strong to withstand the stress exerted on the structure by overpassing loads.

The extremities of the rods projecting into the abutments 5, may, if so desired, be bent upwardly to extend vertically through the abutments, into the flooring, as illustrated in Fig. 5.

The floor 8 of the structure is reinforced by the horizontally disposed net work 13, which being embedded therein, is preferably composed of two intersecting series of parallel barbed wires 14.

The reinforcement 13 extends transversely through the entire extent of the floor while its upwardly bent ends, are embedded in the sides 10, formed by the extensions of the exterior beams 9.

The lower surface of the flooring is composed of a plurality of transversely curved arches 15 which, extending respectively from each supporting beam to the following, greatly increase the strength and supporting qualities of the structure by resolving the vertical pressure exerted thereon by overpassing loads, into a series of horizontal and diagonal thrusts.

The upper surface of the bridge floor 8 is in practice, covered with a layer 16 of gravel or analogous material to form a roadway which may readily be renewed and which protects the surface of the bridge against damage and wear.

It will be observed that the structure as described in addition to being composed of one coherent body of reinforced concrete, is supported and arched to withstand the most severe stresses, and as such is particularly adapted for heavy travel or for use over streams where severe floods are a constant menace to the structure connecting its shores.

Having thus described my invention, what I claim, is

1. A bridge structure comprising in com-

bination a plurality of coalesced elements composed of concrete or analogous material, and including suitably supported abutments, parapets and intermediate beams connecting the same, and a floor between the said abutments and the said parapets and upon the said beams, and a wire net work embedded in the said floor and extending upwardly through the said parapets.

2. A bridge structure comprising in combination, a plurality of coherent elements composed of concrete or analogous material and including suitably supported abutments, beams connecting the same, and a floor between the said abutments, upon the said beams, and rods embedded in the said beams and projecting through the said abutments, into the said floor.

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

WALTER SHARP.

Witnesses:
RICHARD PYLE, Jr.,
JESSE STEPHENSON.