

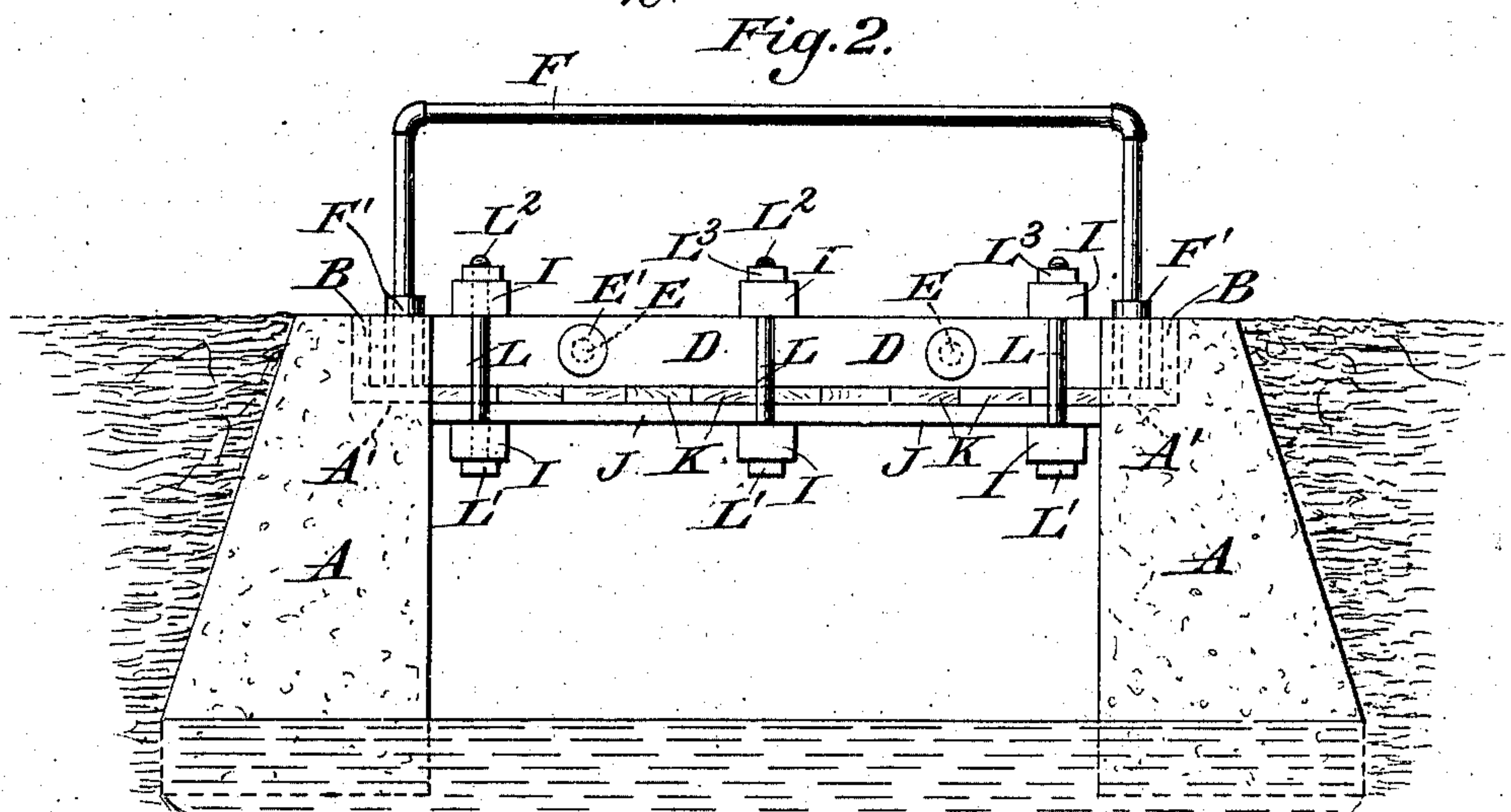
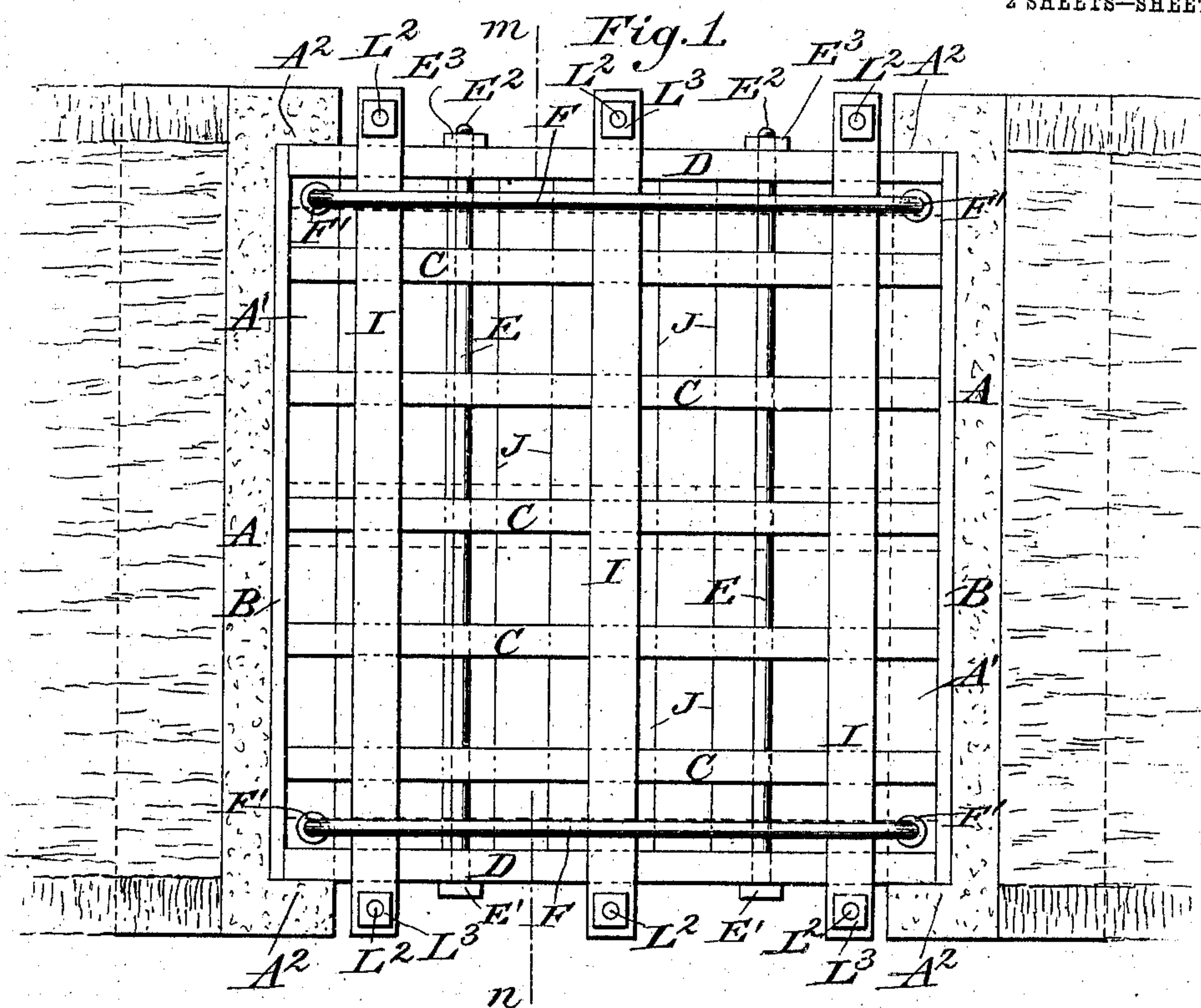
No. 846,659.

PATENTED MAR. 12, 1907.

G. GLASCOCK.
CONCRETE BRIDGE.

APPLICATION FILED MAY 31, 1906.

2 SHEETS—SHEET 1.



Witnesses:

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Inventor:

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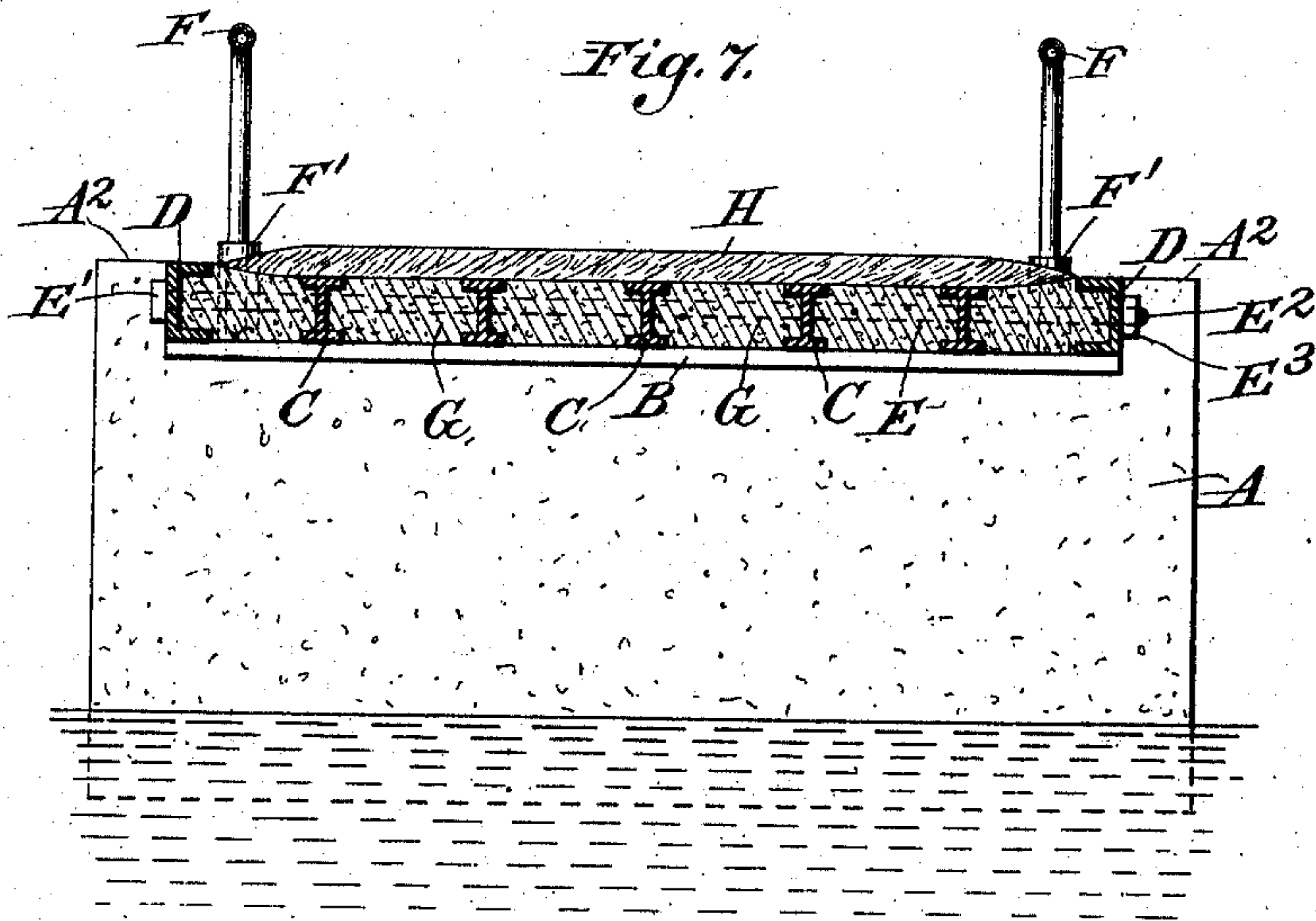
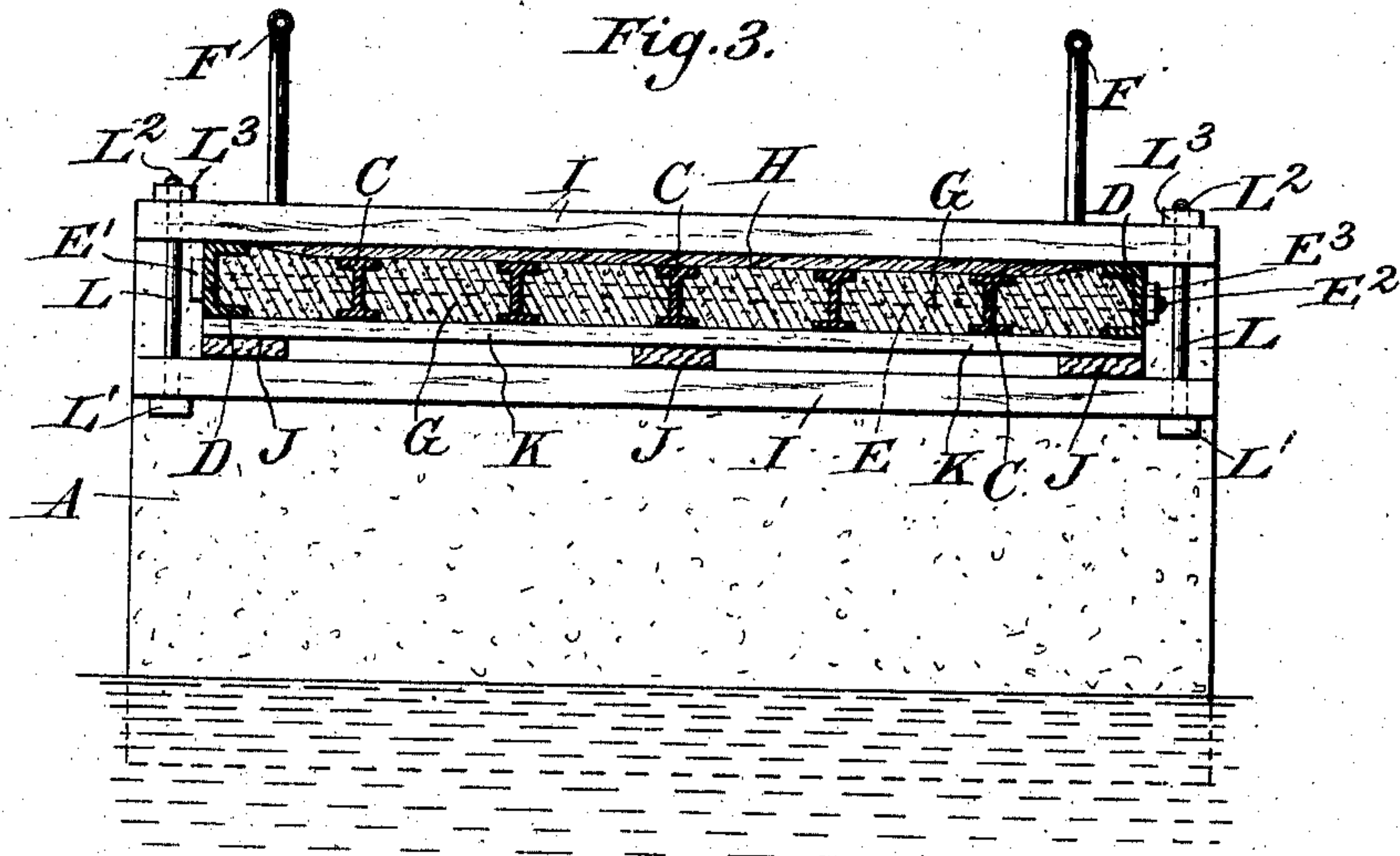


Fig. 4.

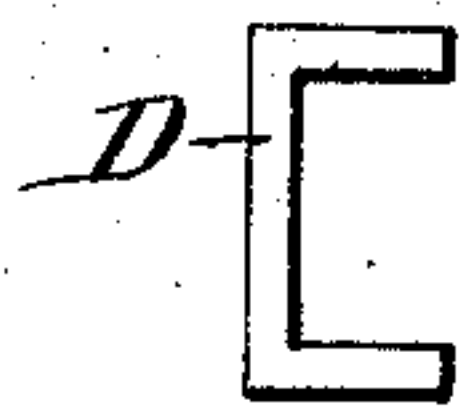


Fig. 5.

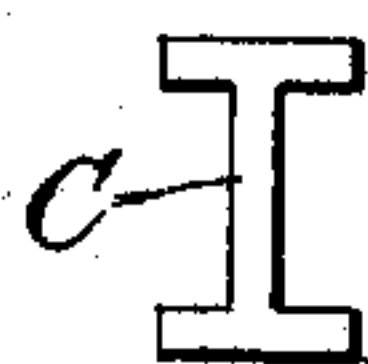
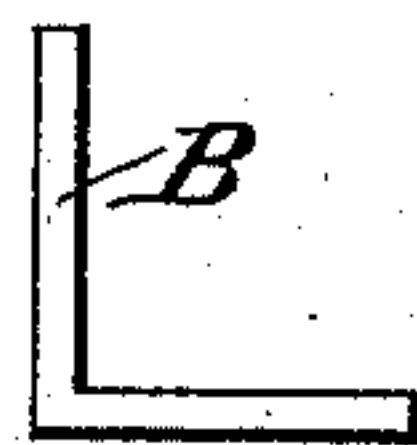


Fig. 6.



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CONCRETE BRIDGE.

No. 846,659.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed May 31, 1906. Serial No. 319,634.

To all whom it may concern:

Be it known that I, GEORGE GLASCOCK, a citizen of the United States, residing at Veedersburg, in the county of Fountain, State of Indiana, have invented certain new and useful Improvements in Concrete Bridges, of which the following is a specification.

My invention relates more particularly to new and useful improvements in the method of constructing concrete bridges; and to this end my invention consists in the peculiar construction, combination, and arrangement of the several parts, as will be more fully described hereinafter.

In the accompanying drawings, forming a part of this specification, in which like letters and numerals of reference indicate corresponding parts throughout the several views, Figure 1 is a top plan of my invention entire. Fig. 2 is an elevation of the same. Fig. 3 is a vertical section on the line *m n*, Fig. 1. Fig. 4 is an enlarged view of the **C**-shaped side beam. Fig. 5 is a similar view of the **I**-shaped beam. Fig. 6 is a similar view of the angle-plate. Fig. 7 is a detail section of my invention.

In the construction of the permanent part of my invention, A represents concrete abutments at each side of the waterway, which may be of any approved form; B, the angle-plates; C, the horizontal **I**-beams; D, the horizontal **C**-shaped side beams; E, the lateral tie-rods; F, the guard-rails; G, the concrete, and H its earthen cover. In the construction of the temporary portion of my invention, ordinarily known as the "concrete false frame," I represents the cross-ties; J, the longitudinal sleepers; K, the bottom boards, and L the through-rods. Fig. 7 shows the permanent part without the false frame.

The abutments A have at their upper inner corners angular niches A', which receive and support the ends of the horizontal beams C and D over the angle-plates B, which are securely set therein and are held from any longitudinal movement by the abutting shoulders A², integral with the abutments. The angle-plates B provide a level base for the ends of the horizontal beams C and D in event of any check or seam appearing in the abutments A. The horizontal beams C and D parallel each other and have their ends set upon the angle-plates B. The beams C and D also have flanges at their upper and lower sides, which project inwardly toward each

other for securely holding the filler-concrete G therebetween. The ends of the side beams D are securely held in place laterally by the abutting shoulders A² integral with the abutments. The lateral rods E pass through ordinary openings in the beams C and D and are of ordinary construction, having collar ends E' and threaded ends E², which receive the threaded nuts E³. The rods E secure the horizontal beams D from any giving laterally. The side rails F by preference are of piping, positioned longitudinally at the sides of the bridge for guarding against side traveling by travelers thereon.

F' refers to metallic sockets set in the concrete G for the reception of the lower ends of the rails F, secured therein. The concrete G consists of sand, gravel or stone, and cement of the usual proportions, mixed, moistened, and packed between the horizontal beams C and D and is provided with a smooth surface even with the tops of the beams C and at the sides given an upward curve to the tops of the beams D. The cover H, by preference of earth-clay, is overlaid the concrete G to or above the plane between the tops of the side beams D, which prevents any checking or cracking of the concrete by rough or heavy travel and obviates the noise that would arise without the earthen cover.

The provision of the false frame for confining the concrete G during its crystallizing stage obviates the construction of the usual ordinary ground-scaffolding for this purpose. The cross-ties I are positioned above and below the horizontal beams C and D and are securely held there by the rods L. The rods L, which pass through ordinary openings at the ends of the cross-ties I, are of common construction, having collar ends L' and threaded ends L² for receiving the threaded nuts L³. By manipulating the nuts L³ the lower cross-ties I may be raised or lowered as desired. The sleepers J are positioned upon the lower cross-ties I parallel to the horizontal beams C and D for supporting the bottom boards K. The bottom boards K rest upon the sleepers J parallel to the cross-ties I and crosswise the horizontal beams C and D. The cross-ties I, sleepers J, and bottom boards K by preference are of suitable timbers in size and strength to securely confine the concrete G during the period of its application and crystallization. The bottom boards K are drawn up against the under sides of the horizontal beams C and D by the manipulation of

the nuts L³, which provides a close rigid bottom for retaining the concrete until its crystallization is complete.

It will be seen when the concrete becomes crystallized that the false frame may be readily removed and continuously used for the same purpose in the construction of other concrete bridges which effects a great saving in material and expense over the usual method of scaffolding from the ground for confining the concrete in the common arch-bridge. The highway may be built up to the concrete abutments of the bridge in any desired manner.

My invention is intended primarily to provide a concrete bridge of more advantage to travel and drainage and of more economy in construction than has been obtained in the use of the common arch concrete bridge heretofore, and, further, it will be readily seen that my invention may be duplicated longitudinally to any desired number of duplicates or spans by providing each additional span or duplicate with a suitable concrete abutment which permits the construction of a concrete bridge of any desired length without departing from its spirit and scope.

I am aware that improvements in concrete bridges and in concrete-bridge construction have been made heretofore, and I do not claim any of them; but my improvements in the permanent part and in the false frame of concrete bridges in the manner above set forth are new and useful, and

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In concrete bridges for highways, the combination in concrete abutments of approved design at either side of the waterway, the same comprising angular niches at the upper inner corners of the concrete abut-

ments, the angle-plates securely positioned within the niches, and the abutting shoulders integral with the abutments at the ends of the niches for the prevention of any longitudinal movement of the plates and dependent parts positioned within the niches, substantially as specified.

2. In a concrete bridge for highways, the same comprising concrete abutments of approved design at either side of the waterway and provided with angular niches, angle-plates, and abutting shoulders integral with the abutments as and for the purpose set forth, horizontal beams set parallel with their ends upon the angle-plates in the angular niches and lateral flanges at their upper and lower sides which project inwardly toward each other making the side beams E-shaped and of greater height than the inner beams and inner beams I-shaped and of less height than the outer side beams as and for the purpose specified, lateral tie-rods inserted through ordinary openings in the horizontal beams made in the manner and for the purpose set forth, concrete of approved materials and proportions provided with a smooth surface even with the tops of the inner beams and curved upward at the sides to the tops of the outer side beams for the purpose set forth, an earthen cover of preferred clay overlaid upon the concrete to or above the plane between the tops of the outer side beams as and for the purpose set forth, and removable side rails set in metallic sockets secured in the concrete for the prevention of side traveling, all as and for the purposes set forth, substantially as specified.

GEORGE GLASCOCK.

Witnesses:

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