

J. A. L. WADDELL & J. L. HARRINGTON.
LIFT BRIDGE.

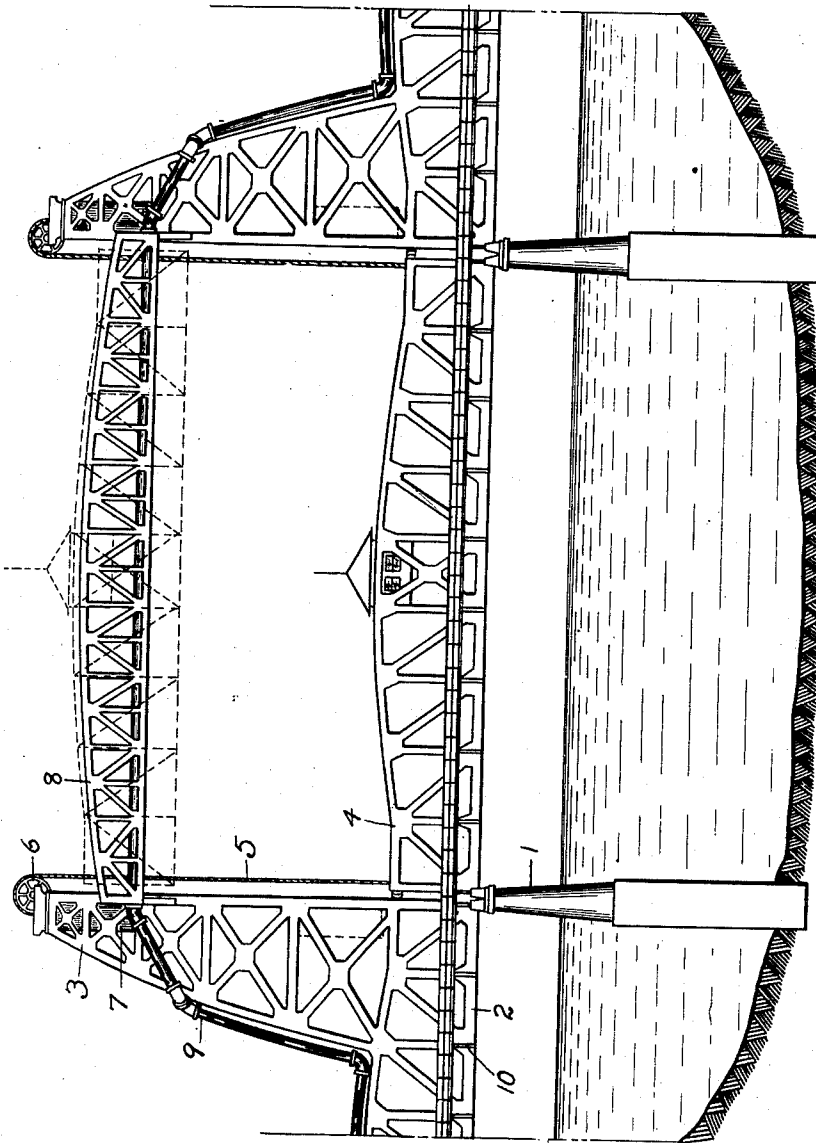
APPLICATION FILED NOV. 20, 1911.

1,049,422.

Patented Jan. 7, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. II.

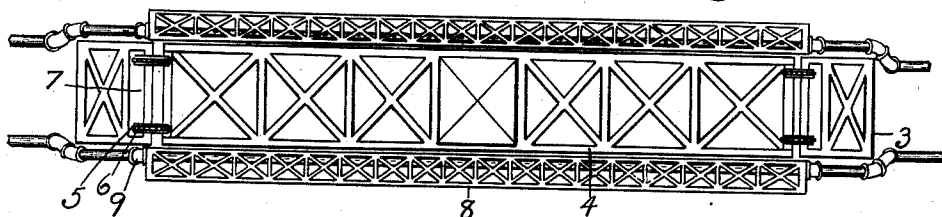


Fig. III.

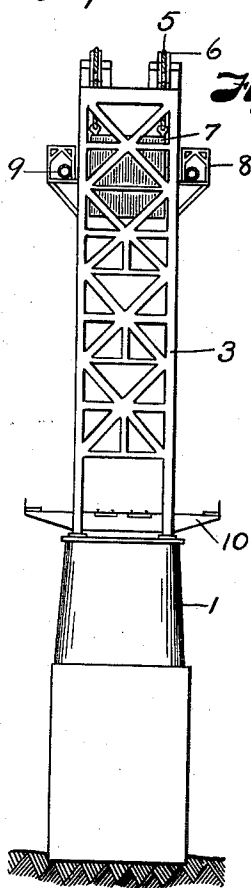
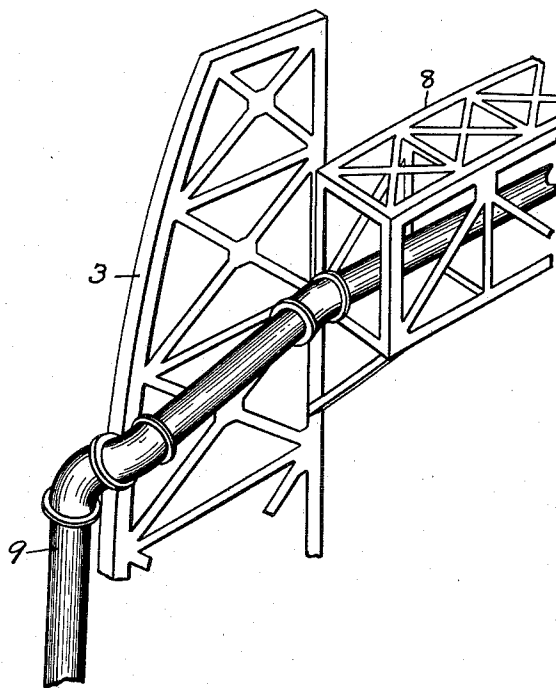


Fig. IV.



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UNITED STATES PATENT OFFICE.

JOHN A. L. WADDELL AND JOHN LYLE HARRINGTON, OF KANSAS CITY, MISSOURI.

LIFT-BRIDGE.

1,049,422.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed November 20, 1911. Serial No. 661,262.

To all whom it may concern:

Be it known that we, JOHN A. L. WADDELL and JOHN LYLE HARRINGTON, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Lift-Bridges; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to lift bridges and has for its object to provide means for carrying a fluid conduit between the towers of a lift bridge without interfering with the passage of vessels through the open span, without interfering with the vertical movement of the lift span, and whereby the fluid passed through the conduit may be conducted under a minimum hydraulic head. In accomplishing this object, we have provided the improved details of structure hereinafter described and illustrated in the accompanying drawings, wherein:—

Figure I is a side elevation of a lift bridge constructed according to our invention. Fig. II is a plan view of same, the approaches being removed. Fig. III is an end view of same. Fig. IV is an enlarged detail view of a part of the upper end of one of the towers, with parts of the conduit span and conduits.

Referring more in detail to the parts:—1 designates bridge piers, 2 approaches, 3 towers, and 4 a lift span which is adapted for support on the piers 1 and for vertical travel between the towers.

5 designates cables which are connected with the ends of the span 4, are run over sheave wheels 6 on the tops of the towers, and carry counterweights 7 for balancing the span during its vertical travel.

On the sides of the towers 3, below the tops thereof and preferably at about the upper position of the vertical lift span, is a

span 8 which is adapted for carrying a fluid conduit 9 between the towers. The span 8 may be of any suitable construction, but is preferably of skeleton formation, as its only function is to carry the pipe or conduit 9 across the open span. As the fluid conduit 9 approaches the towers it is supported on the bridge approaches, and preferably rises at the ends of the towers to within a short distance of the span 8, where it is turned laterally and is extended along the side of the tower to the span 8, across which it is conducted to connect with a like section on the opposite tower.

In use, the bridge and lift span may be constructed and assembled in any well known manner, and the conduit spans mounted on the towers at such height that they will not interfere with vessels passing through the open span and in such position that they will not interfere with the vertical travel of the span 4.

By mounting the conduit spans as low as possible on the towers, a saving in hydraulic head on the fluid to be conducted there-through may be effected. We prefer to provide a conduit span at each side of the towers, to balance the structure, and also to afford space for carrying a plurality of conduits when necessary.

Having thus described our invention, what we claim as new therein and desire to secure by Letters-Patent is:—

1. The combination with towers, of a span adapted for vertical movement between the towers, means for moving the span, a permanent span mounted on the towers above the lower position of the movable span and at one side of the vertical path thereof, and a fluid conduit carried by said span.

2. The combination with towers, of a span adapted for vertical movement between the towers, means for moving the span, a permanent span mounted on the towers at the upper level of the movable span and at one side of the path thereof, and a fluid conduit carried by said span.

3. The combination with towers, of a span adapted for vertical movement between the

towers, means for moving the span, spans permanently mounted on the towers at the upper level of the movable span and at opposite sides of the path thereof and between
5 which said movable span is adapted to rest when in its uppermost position, and fluid conduits carried by said spans.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN A. L. WADDELL

JOHN LYLE HARRINGTON.

Witnesses:

MYRTLE M. JACKSON,

ARTHUR W. CAPS.