(No Model.)

J. A. L. WADDELL.

AUTOMATIC JETTY FOR DEEPENING TIDAL WAYS.

No. 604,810. Patented May 31, 1898.

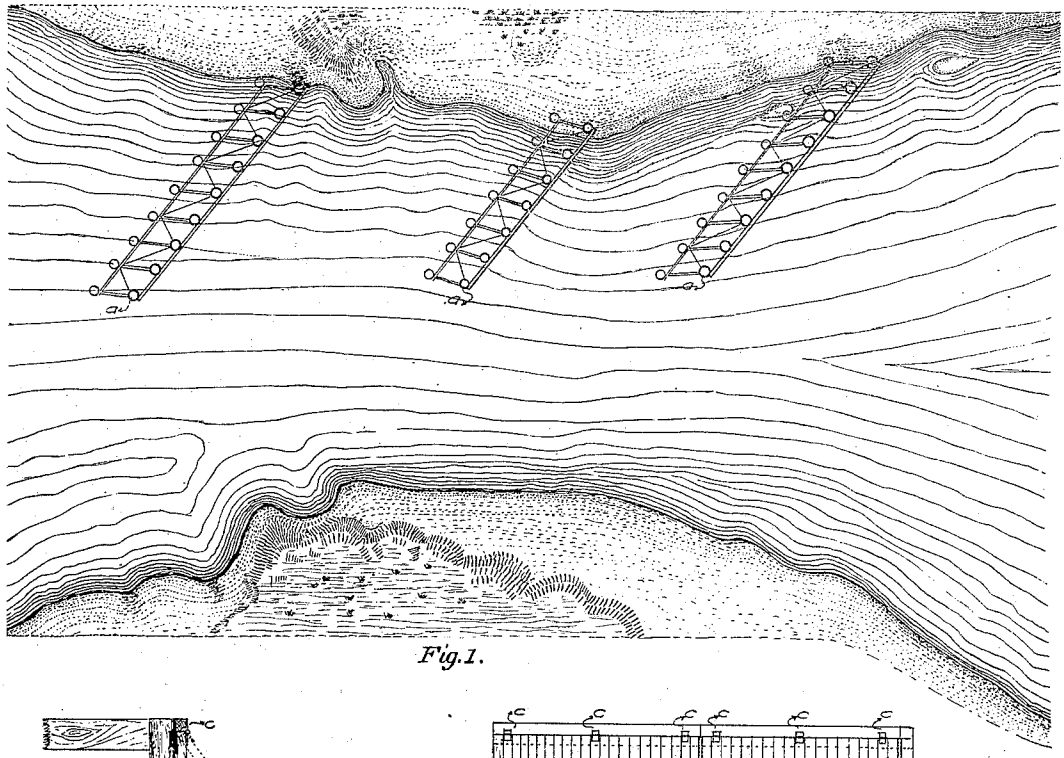

Fig. 1.

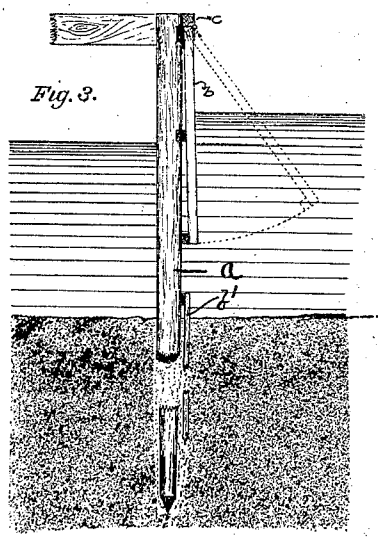

Fig. 3.

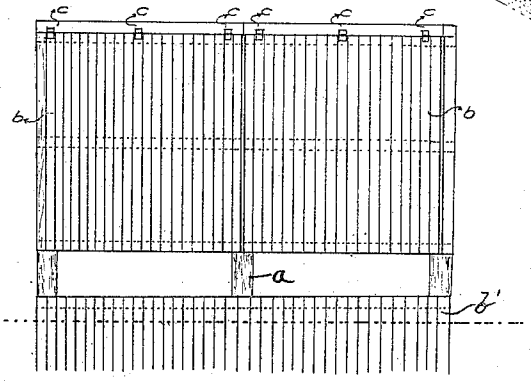

Fig. 2.

WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN A. L. WADDELL, OF KANSAS CITY, MISSOURI.

AUTOMATIC JETTY FOR DEEPENING TIDAL WAYS.

SPECIFICATION forming part of Letters Patent No. 604,810, dated May 31, 1898.

Application filed December 23, 1897. Serial No. 663,121. (No model.)

To all whom it may concern:

Be it known that I, JOHN ALEXANDER LOW WADDELL, a citizen 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 Automatic Jetties for Deepening Tidal Ways; and I 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 of reference marked thereon, which form a part of this specification.

The object of my invention is to deepen harbors economically and expeditiously by means of the outgoing tides.

Reference is made to the accompanying drawings, in which—

Figure 1 is a general plan of the harbor, showing the location of three double rows of piles. Fig. 2 is an elevation of the dike from the upstream side, showing the top-hinged gates. Fig. 3 is a cross-section through the dike and shows the action of the gates when the tides are falling. The dotted lines show the gate as it will be when the tide is rising.

Like letters of reference denote corresponding parts in the several views of the drawings, in which—

a represents the piles, *b* the top-hinged gates, and *c* the hinges.

To carry my invention into effect, I drive two rows of piles inclined in the direction of the outgoing tide from one shore to a point about midway of the channel. These two rows of piles are thoroughly braced together by cross-stays or any other means for connecting them rigidly to each other. They are to be driven on the opposite side of the channel from that on which the deep water is desired. Between the piles gates are to be provided, which are hinged at the top and open upward in the direction of the incoming tide, as shown in Fig. 3, thus allowing the incoming tide to pass with little obstruction; but when the tide begins to fall the outgoing waters close the gates automatically, and thus greatly obstruct the flow on one side of the channel. This will produce a rapid outgoing current on the opposite side of the channel, which will carry with it much of the sand and silt, and thus rapidly deepen the channel.

It will be necessary to drive sheet-piling *b'* between the main piles, stopping the tops of same about two feet below the bottom of automatic gates. The object of the sheet-piling is to prevent the water from scouring out around the piles, and is made by covering the lower extremities, as shown, with planking laid horizontally upon the piles, and this planking may or may not be backed by short piling, or the sheet-piling may consist simply of piling driven closely together.

These dikes may be placed on both sides of the river to deepen the channel in the middle of the river.

Having described all that is necessary to a full understanding of my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with piles driven into the bed of a tidal waterway on the side opposite to that which it is desired to deepen, and extending to the surface of the water, or above or below it, the top-hinged gates *b*, placed on the upstream side of the piles, substantially as shown.

2. In an automatic jetty, the combination of the piles *a*, extending in a line from the shore opposite to the harbor to be deepened and inclined in the direction of the outgoing tide, with the top-hinged gates *b*, on the upstream side of the row of piles and extending approximately from the surface of the water to near the bottom of the river, and also with sheet-piling driven into the river-bed and extending up toward the gates, for the purpose of preventing the current from washing the ground from the piles, substantially as shown.

In testimony whereof I affix my signature in the presence of two witnesses.

J. A. L. WADDELL.

Witnesses:
IRA G. HEDRICK,
K. L. GOODWIN.