(No Model.)

A. G. FOLLETT.

BREAKWATER.

No. 245,473. Patented Aug. 9, 1881.

Fig: 1.

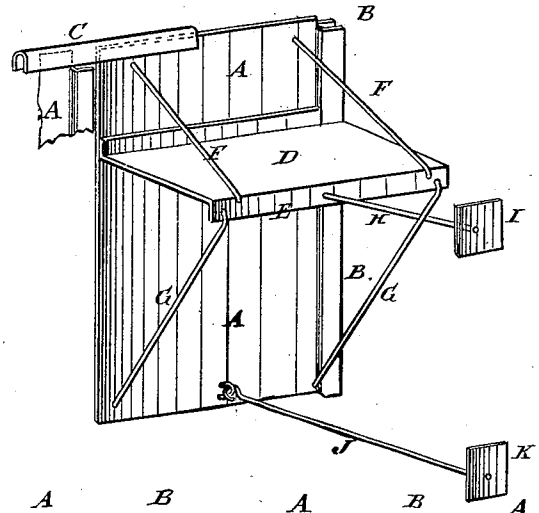


Fig: 2.

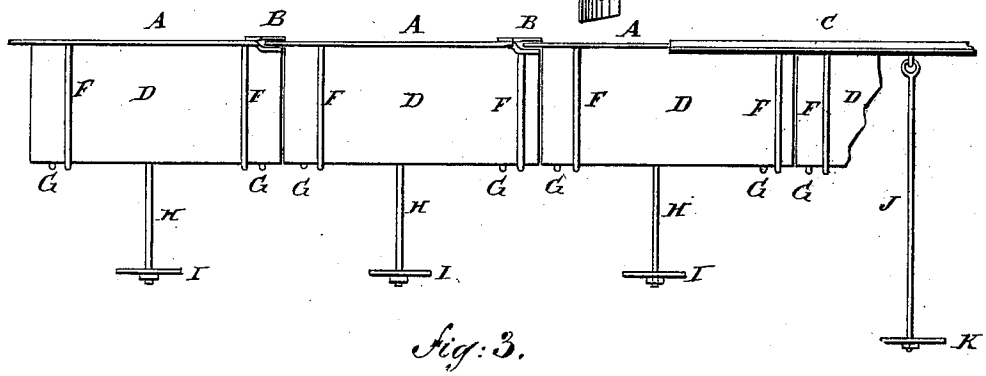
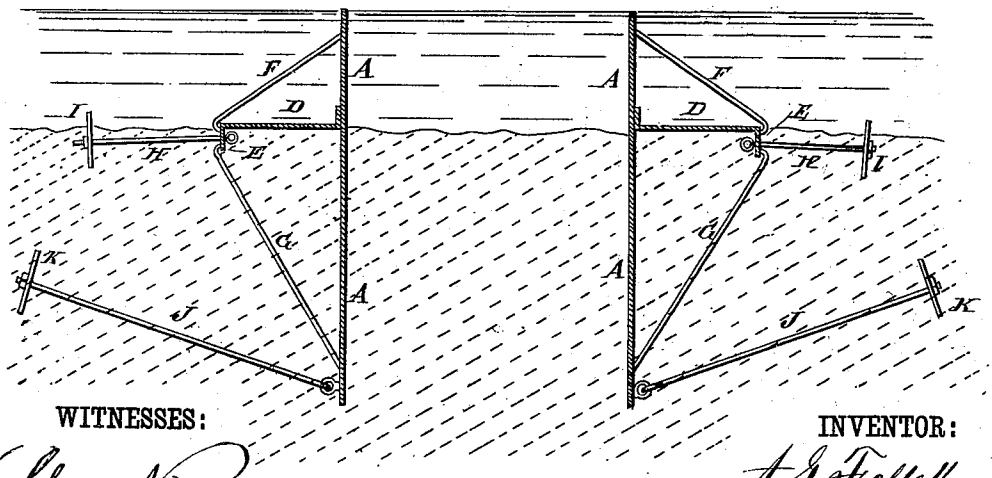


Fig: 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALEXANDER G. FOLLETT, OF VELASCO, TEXAS.

BREAKWATER.

SPECIFICATION forming part of Letters Patent No. 245,473, dated August 9, 1881.

Application filed January 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER GLASS FOLLETT, of Velasco, in the county of Brazoria and State of Texas, have invented a new and useful Improvement in Breakwaters, of which the following is a specification.

Figure 1 is a perspective view of a section of the improvement. Fig. 2 is a plan view of a portion of the improvement. Fig. 3 is a sectional elevation.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish breakwaters for protecting harbors and roadsteads, and keeping open channels through bars at the entrances of harbors, the mouths of rivers, and in other places, and which shall not be liable to be destroyed by the marine worm.

The front plates are made in sections, A, each section being about twenty-four feet square and formed of half-inch iron plates firmly riveted together. Along one vertical edge of each section A is formed a groove, B, to receive the edge of the adjacent section, to keep the sections in line with each other and prevent spreading. The sections A are further secured together by U-shaped plates C, placed upon their upper edges, as shown in Figs. 1 and 2, and which are designed to be securely bolted to the said sections.

To the rear side of each section A, at a distance from its upper edge about equal to the depth of water upon the bar, is riveted a horizontal plate, D, about ten feet wide, which is designed to rest upon the sand or mud. The inner edge of the plate or platform D is bent upward at right angles to form a flange to receive the rivets or bolts that secure the said platform D to the vertical sections A. The outer part of the plate or platform D is bent downward at right angles, forming a flange, E, about two feet deep, to take hold of the sand or mud and hold the upper part of the plate A from lateral movement.

To the flange E are attached the ends of brace-rods F G, to strengthen the connection between the plates A and D. The upper ends of the brace-rods F are attached to the plate A near its upper edge. The lower ends of the braces G are attached to the plate A near its lower edge.

To the flange E is pivoted the end of a rod, H, ten feet, more or less, in length, and having a plate, I, about three feet square attached to its outer end.

To a staple, eyebolt, or other support secured to the lower part of the plate A, is hinged the end of a rod, J, twenty feet, more or less, in length, and having a plate, K, about three feet square attached to its outer end.

The plates A and their attachments are designed to sink into the sand or mud by their own weight until the plates D rest upon the top of the said sand or mud. In case the sand be too hard or firm to allow the plates A to sink, a hydraulic pump can be used to lower them into place. The rods H J and plates I K are also designed to sink into the sand or mud by their own weight, and to serve as anchors for holding the plates A in place and in a vertical position.

When the breakwater is used for opening a channel through a bar two rows of the plates A are used, placed face to face and at a suitable distance apart, as indicated in Fig. 3, to contract the current, so that the water will wash out the sand or mud between the rows of plates, and thus bring the channel to and keep it at a suitable depth.

With this construction effective breakwaters can be constructed in less time and at less expense than when the ordinary constructions are used.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

1. In a breakwater, the combination, with the vertical plate A, of the horizontal plate D, having a flange, E, along its outer edge, substantially as herein shown and described, whereby the vertical plates are kept from sinking too deep, as set forth.

2. In a breakwater, the combination, with the vertical plate A and the horizontal plate D, of the braces F G, substantially as herein shown and described, whereby the connection between the plates D A is strengthened, as set forth.

3. In a breakwater, the combination, with the vertical plate A and the horizontal plate D, of the anchoring-rods H J, having plates I K attached to their outer ends, substantially as herein shown and described, whereby the vertical plates are held in place, as set forth.

ALEXANDER GLASS FOLLETT.

Witnesses:

GEO. W. DOLL,

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