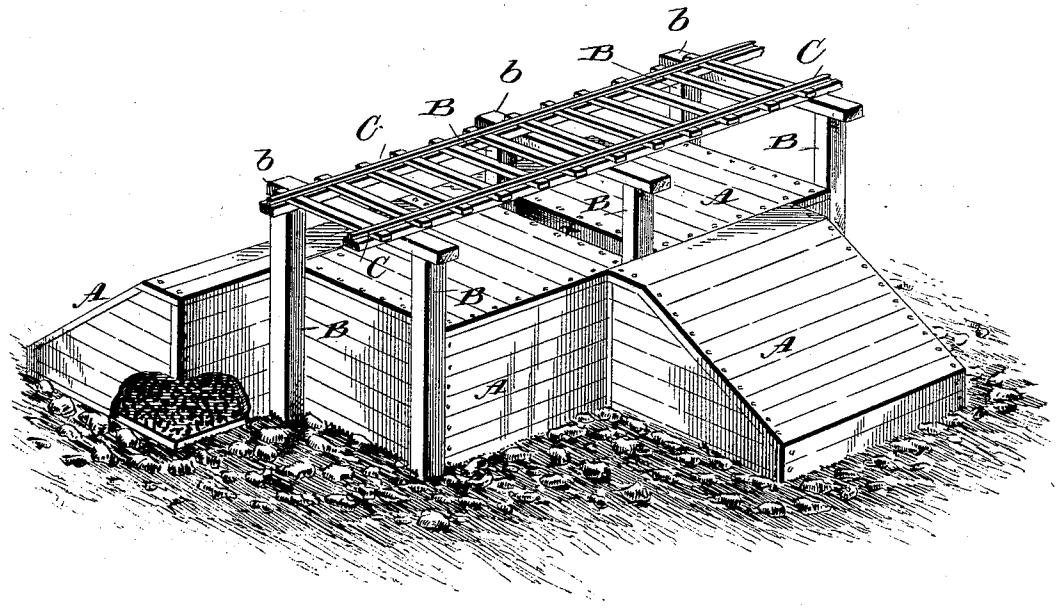
(No Model.)

A. M. SHANNON.

BREAKWATER, &c.

No. 480,288. Patented Aug. 9, 1892.



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ALEX. M. SHANNON, OF GALVESTON, TEXAS.

BREAKWATER, &c.

SPECIFICATION forming part of Letters Patent No. 480,288, dated August 9, 1892.

Application filed March 29, 1892. Serial No. 426,902. (No model.)

To all whom it may concern:

Be it known that I, ALEX. M. SHANNON, a citizen of the United States, residing at Galveston, in the county of Galveston and State of Texas, have invented certain new and useful Improvements in Breakwaters, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, to the making a part of this specification, and letters of reference marked thereon.

This invention relates to certain new and useful improvements in piers, jetties, breakwaters, and the like; and it has for its objects, among others, to provide a simple and cheap means of constructing such structures. It can be constructed from boats, barges, or from a trestle, or can be built continuously from a starting-point on shore to the objective point in the lake, bay, gulf, or other body of water. In flat coast countries, where nature has made no banks to the water-courses nor deposited ledges of rock within reasonable distance of the sea, plans such as I have invented can be used to great advantage.

I form a sectional jetty, pier, breakwater, or other structure by filling a box or boxes, made of any suitable material, with material from the bottom near by, pumped or otherwise placed within the boxes or receptacles, which will rest upon a foundation made of brush, wire, lumber, one or all, or other substance or substances, so placed as to have the settling even and equal, and to extend beyond the receptacles, so as to prevent the bottom being cut away and the wall undermined. The boxes are placed so as to break joints to prevent the flow of water through the wall, which can be carried up to or above the water's surface.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawing, which, with the letters of reference marked thereon, forms a part of this specification, and in which is shown a perspective view illustrating my improvement, with a portion broken away.

In carrying out my invention I take a sufficient number of boxes or receptacles A, of wood, iron, or a combination of the two, and of the required size and shape, of sufficient strength to resist the force of the waves, and by any suitable means—as for instance, by a pump—force into these boxes or receptacles, preferably before sinking them, sand, dirt, shells, gravel, or other materials from the bottom adjacent, and with this filling I may mix, either before or after it is placed in the boxes, some suitable cement, so as to make solid blocks thereof when it hardens in the boxes. Some of the boxes may have sloping tops or covers, as shown. The filling may be placed within the boxes before the covers are placed on, or there may be provided suitable openings covered by tight-fitting caps, and through these openings the filling may be placed. In arranging the boxes I place them so as to break joints, as shown, and piles B may be employed at suitable intervals, and upon these piles are supported the cross-pieces *b* for the support of the rails C when such use is to be made of the structure. The piles are driven, preferably, after the boxes are sunk. The spaces between the pilings and between the boxes, if any, should be filled with concrete, properly tamped in, thus making the whole wall solid.

The boxes are placed upon a suitable foundation composed of something that will allow of even and equal settling. Brush or wire makes a good foundation.

It is deemed important that the receptacles be placed with a space between them, as shown at *x*, and the piles driven in these spaces so as to prevent contact of the sides of the receptacles with each other, and when the said spaces are filled with cement the receptacles and piles are bound together thereby.

What I claim as new is—

1. A wall formed of receptacles set with spaces between them and to break joint and filled with sand, gravel, or the like, substantially as specified.

2. The combination, with the receptacles set with spaces between them and to break joints and filled with sand, gravel, or the like, of the piles set to hold said receptacles, the concrete filling in the spaces and binding the piles and receptacles together, and the cross-timbers secured to the upper ends of the piles, as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

A. M. SHANNON.

Witnesses:
WM. W. BURKE,
W. M. SELKIRK.