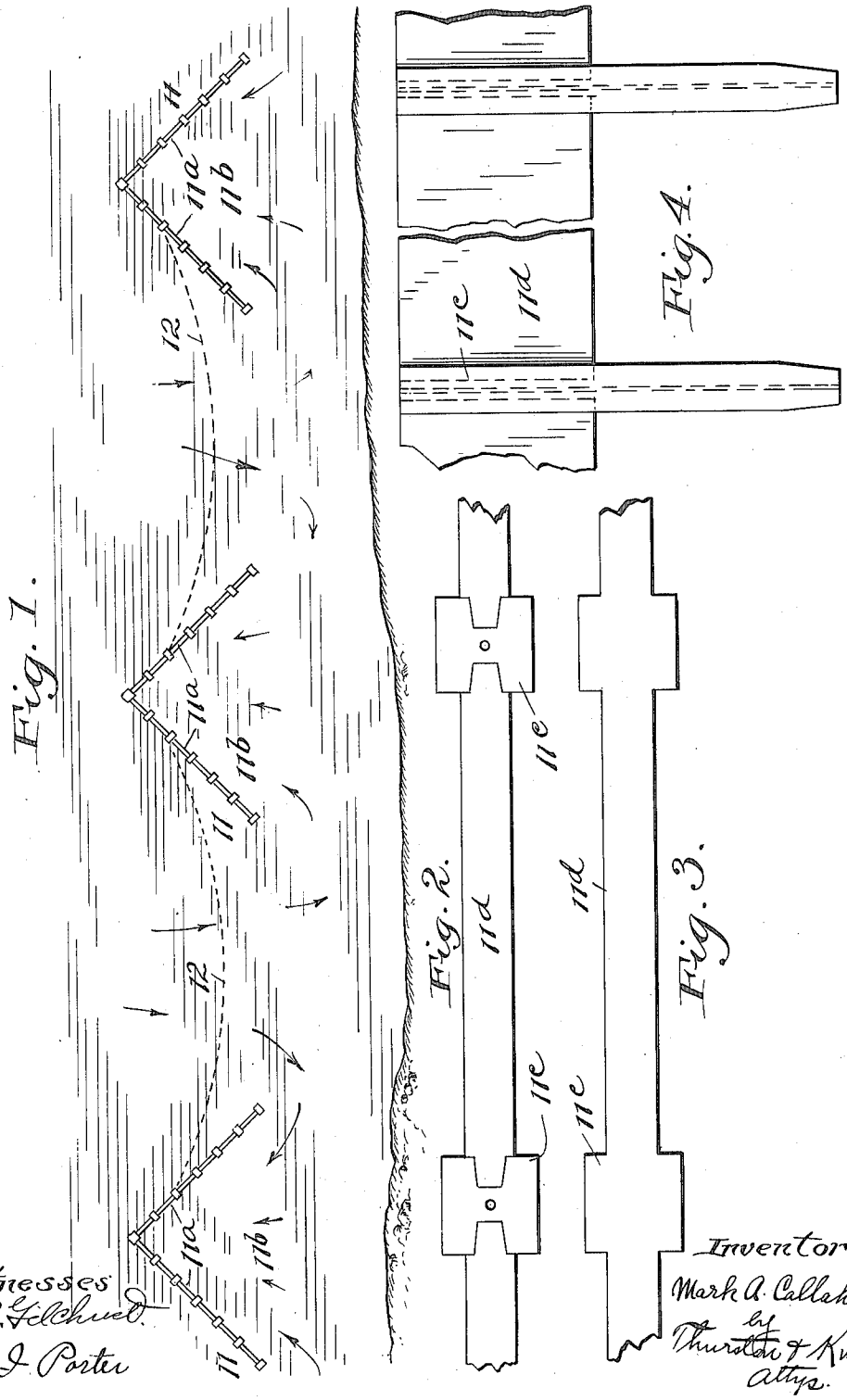
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BEACH FORMING JETTIES.

APPLICATION FILED FEB. 2, 1914.

1,137,049. Patented Apr. 27, 1915.



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BEACH-FORMING JETTIES.

1,137,049. Specification of Letters Patent. Patented Apr. 27, 1915.

Application filed February 2, 1914. Serial No. 815,891.

To all whom it may concern:

Be it known that I, MARK A. CALLAHAN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Beach-Forming Jetties, of which the following is a full, clear, and exact description.

This invention relates to beach forming jetties for water fronts, and has for its object to provide a jetty construction and an arrangement of jetties such that a beach will be formed thereby, in a minimum space of time. In accordance with my invention I attain the above object by a series of jetties which are arranged in a row a short distance from the shore line, and are so constructed and arranged that the incoming waves in passing through or between the jetties are intensified, and carry shoreward great quantities of sand or beach forming material, and further, said jetties serve to retain or prevent the receding waves from again carrying said material outward, with the result that a permanent beach is quickly formed.

In the preferred embodiment of my invention, the jetties are arranged in a row and are V shaped forming converging funnels for intensifying the incoming waves and having wide open inner ends or bases into which a large part of the sand is washed and is thus prevented from again being carried outwardly by the receding waves.

My invention may be further briefly summarized as consisting in certain novel combinations and arrangements of parts which will be described in the specification and set forth in the appended claims.

In the accompanying sheet of drawings Figure 1, is a plan view of a section of water front with the beach forming jetties set up or constructed. Fig. 2, is an enlarged top plan view of a section of one of the jetty walls. Fig. 3 is a similar view showing a modification, and Fig. 4, is a side view of a section of one of the walls.

Referring to the drawings, 10 represents the shore line before the beach is formed, and 11 represents the beach forming jetties which are constructed in the water a short distance from the shore line. These jetties which consist of a row or series of spaced units are V shaped or triangular with the apices of the triangles seaward, and the bases shoreward. Each jetty is formed of two walls, 11^a, and the bases are open forming a triangular pocket, 11^b, closed seaward and open shoreward.

The spacing and size of the jetties may of course be varied, but in one installation from which excellent results were obtained, the arms of each jetty were at right angles, as here shown, and were seventy-five feet in length, and the jetties were 200 feet apart measured from apex to apex. This left between the bases of the adjacent jetties an open space approximately equal to the base or distance between the inner ends of the arms of each jetty. These proportions are here shown and are preferred. Of course the number of jetties will depend on the length of the beach to be formed.

The jetties are preferably formed of concrete and each consists of a number of spaced piles, 11^c, which extend down into the sand and intermediate slabs, 11^d, which rest on the bottom and which together with the piles extend above the water surface. The piles and slabs may be formed separately as shown in Fig. 2, in which event they will be connected by a tongue and groove construction, or the piles and slabs may be poured simultaneously forming a monolithic construction as shown in Fig. 3.

The action or effect of my improvement in beach forming jetties is as follows. The converging walls of adjacent jetties form funnels through which the sea enters and which greatly intensify the waves, converting the latter from ordinary waves or billows into breakers which wash or roll quantities of sand or beach forming material shoreward, between and past the jetties. When the waves or breakers pass the jetties they are greatly lessened in intensity or are scattered because of the greatly widened space, beyond the narrowest space at the inner ends of the funnels. Then as the waves recede most of the material previously washed in is deposited and left as a beach forming accretion, largely because the converging or triangular pockets formed in the jetties stop or impede the outward movement. In consequence the beach is formed very rapidly in and to the rear of the jetties, and also between the jetties, the beach being formed from the shore line substantially up to the dotted lines marked 12.

Having thus described my invention, I claim:—

1. In a beach forming construction, a plu-

rality of spaced jetties arranged in a row and each composed of two arms diverging shoreward forming an outwardly converging pocket open shoreward and closed seaward, said jetties having an unobstructed space between them and being arranged sufficiently close together that the adjacent arms of adjacent jetties form inwardly or shorewardly converging funnels which intensify the incoming waves passing through them.

2. In a beach forming construction, a plurality of V-shaped jetties arranged in a row with their apices seaward and with their bases shoreward, each jetty being composed of two arms forming a triangular pocket, the jetties being closed at their apices and having between their bases unobstructed or open spaces of such width that waves entering between the shorewardly converging arms of adjacent jetties are intensified.

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

MARK A. CALLAHAN.

Witnesses:
L. I. PORTER,
A. F. KWIS.