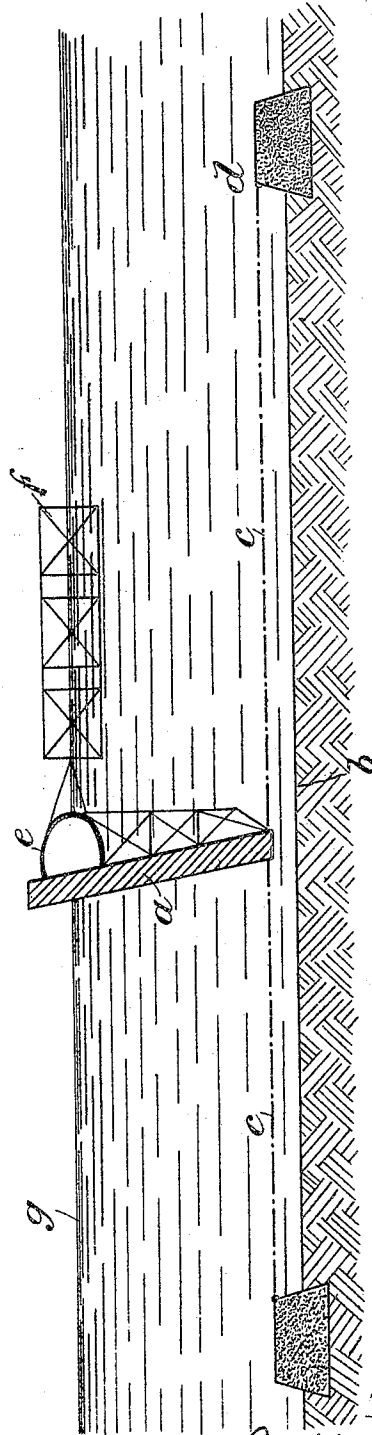


No. 817,904.

PATENTED APR. 17, 1906.

T. D. COOK.
FLOATING BREAKWATER.
APPLICATION FILED JULY 17, 1905.



Attest:

W. M. Mason
L. B. Middleton

Inventor.
Thomas J. Cook.
by *L. B. Middleton, Daniel A. Allen*
Attys

UNITED STATES PATENT OFFICE.

THOMAS DIXON COOK, OF GLENDON-TORQUAY, ENGLAND.

FLOATING BREAKWATER.

No. 817,904.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed July 17, 1905. Serial No. 270,127.

To all whom it may concern:

Be it known that I, THOMAS DIXON COOK, a subject of the King of Great Britain and Ireland, residing at Glendon-Torquay, in the county of Devon, England, have invented a certain new and useful Floating Breakwater, of which the following is a specification.

My invention relates to breakwaters.

It is well understood that when the sea, at all events near the land, is agitated by storms the disturbance of the water does not as a rule extend to a greater depth than about fifteen feet. I have found that I can break the violence of the sea by the use of a floating breakwater consisting of a series of frames made of wood or iron, or of both, well cross-braced, and that solid structures such as the usual breakwaters are unnecessary.

My invention consists in the use of a floating breakwater consisting of floating frames so buoyed and moored that the frames normally slope toward the sea, but can be moved so that they slope toward the land by the action of the waves. The frames are floated by buoys, pontoons, or hollow cylinders of which all or the greater part are preferably placed on the side of the frame nearest to the land, so as to tilt said frame toward the sea.

Referring to the accompanying drawing, which is a vertical section illustrating diagrammatically one of the frames of my breakwater, the frames *a* are preferably of such length that they reach nearly to the sea-bed (represented by the line *b*) and are preferably moored by long chains *c*, extending nearly parallel with the sea-bed both on the land and sea side to moorings *d*. The frames *a* are floated at the sea-surface *g* by pontoons *e*, of which all or the greater part are placed on the side of the frame which is nearest to the land, so as to tilt the frame toward the sea side. The frames should be constructed of such weight and density that while floating they nevertheless insure steadiness of movement. When a wave strikes a frame which is leaning toward it, the frame will be driven back and at the same time working on its mooring-chains, as a door works on its hinges, will incline toward the land side, thus gradually breaking the force of the waves. The frames must be made of such lengths and depths as to be able to resist the violence of

the waves and are most effective when about one hundred yards in length.

In arranging my breakwater I prefer to arrange the series of frames in two lines one behind the other, sufficient space being left between adjacent frames in each line and between the lines to avoid possibility of the frames coming into collision, and by preference the frames in the inner line are arranged to come opposite the spaces between the frames in the front line. On the inner or land side of each frame I preferably attach a horizontal floating network *f*, of wood or iron, to break up any sea that may come over the frames.

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

1. A floating breakwater, comprising in combination, floating frames, moorings attached at the lower ends of said frames, and floating means attached at the upper ends of said frames, at one side thereof as set forth.

2. A floating breakwater, comprising in combination, floating frames moorings attached at the lower ends of said frames, floating means attached at the upper ends of said frames, at one side thereof and a horizontal floating framework moored to said frames on the land side, as set forth.

3. A floating breakwater, comprising in combination, floating frames, long mooring means attached at the lower ends of said frames, floating means attached to the upper ends of said frames, at one side thereof said mooring means being approximately horizontal, as set forth.

4. A floating breakwater, comprising in combination, floating frames, moorings attached at the lower ends of said frames, and floating means attached at the upper ends of said frames, said means causing said frames to normally slope toward the sea, said frames being free to slope toward the land, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS DIXON COOK.

Witnesses:

THEODORE FOSTER,
FRANCIS E. SAVAGE.