

E. H. Tracy.

Sea Wall.

N^o 20,105.

Patented Apr. 27, 1858.

Fig. 1

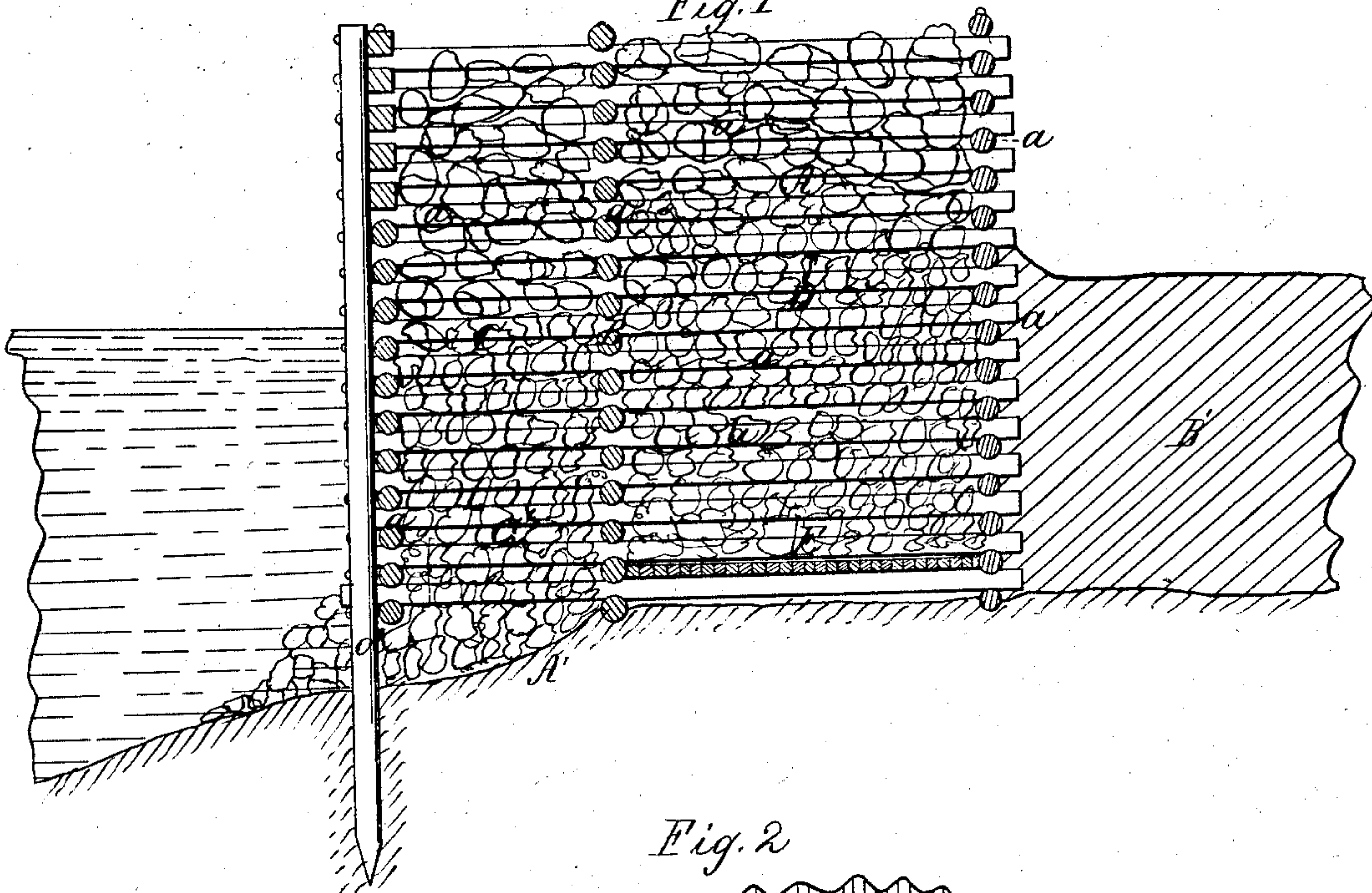
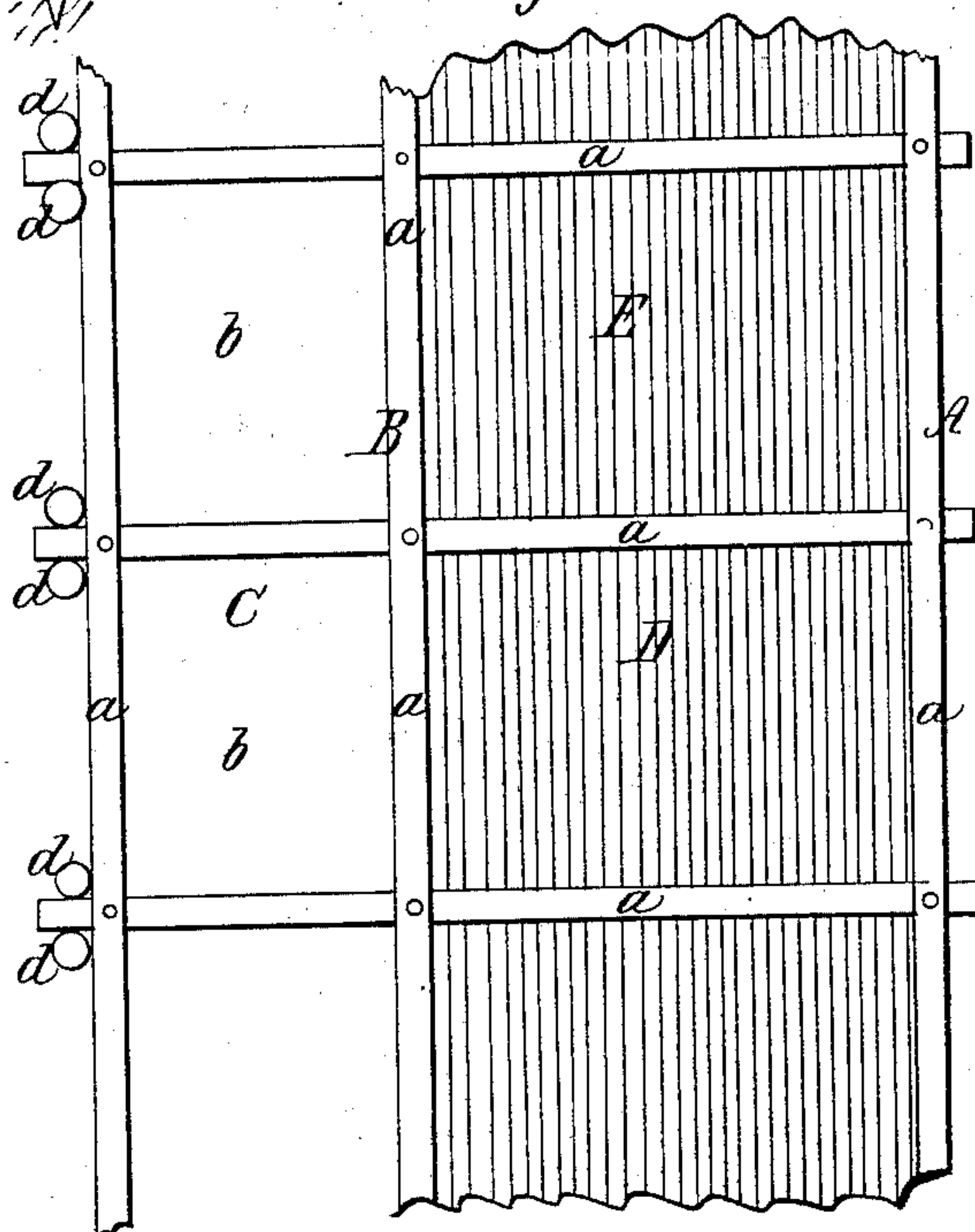


Fig. 2



UNITED STATES PATENT OFFICE.

EDWARD H. TRACY, OF NEW YORK, N. Y.

FRAME OR CAISSON OF BREAKWATERS, &c.

Specification of Letters Patent No. 20,105, dated April 27, 1858.

To all whom it may concern:

Be it known that I, EDWARD H. TRACY, of the city, county, and State of New York, have invented a new and useful Improvement in Breakwaters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of the specification, in which—

Figure 1, is a transverse vertical section of my improvement. Fig. 2 is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the two figures.

This invention is designed to obviate the difficulty attending the washing away of the foundations of breakwaters.

The invention consists in constructing the breakwater with two or more longitudinal compartments which may be subdivided into cells, and having the inner compartment or compartments provided with a flooring, the outer compartment being open at its lower end so that in case the filling of the outer compartment escapes in consequence of the washing away of the foundation directly beneath it the structure will be retained or supported by the inner compartment or compartments while the front compartment is being refilled, and until sufficient of the filling or contents of the outer compartment has escaped therefrom to form a durable foundation.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents the frame of the breakwater which may be formed of rough or hewed logs (*a*) placed one over the other, the ends overlapping and secured together by pins, bolts or other means.

B is a partition formed longitudinally in the frame and dividing the frame into two compartments C, D, the partition being formed in the same way as the sides of the frame. The two compartments C, D, are divided into cells (*b*) by transverse partitions, which serve to strengthen it. The inner compartment D is provided with a flooring E, but the outer compartment C, is open at its lower end. The frame thus constructed is sunk at the desired spot and secured by piles (*d*). The two compartments C, D, are then filled with stones C', shown in red and the structure is completed.

The flooring E of the inner compartment

D retains the stones therein, and in case the foundation A' directly below the outer compartment C is washed away and the stones or filling allowed to escape therefrom the compartment D, will retain the structure until the compartment C, is refilled, it being designed to replenish the outer compartment C, as fast as its contents escape. The washing away of the foundation below the compartment C, however will be prevented after a time as the stones which have escaped from said apartment take the place of the sand or mud previously washed away and a durable foundation will be obtained. It will therefore be seen that the front compartment C, serves as a means to obtain a firm and durable foundation.

It will be understood that the foundation below the compartment D not being exposed to the action of the waves will remain firm, as the area inclosed by the breakwater is filled in as shown at B', Fig. 1.

At present the frames of such structures are frequently wholly open at the bottom and all the filling of the frame allowed to escape in case of the foundation being washed away. In such cases the frames are destroyed by the action of the waves or are carried away by currents. With a view to prevent this frames have been constructed with bottoms to prevent the stones or filling from escaping therefrom, but in case of the foundation being washed away the whole structure will tilt over it being undermined and soon destroyed or rendered useless.

By my improvement it will be seen that provision is not only made for rendering the structure secure when on a poor foundation but a means also obtained for replacing such foundation as it is washed away, by a durable one.

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

Constructing the frames A of breakwaters with longitudinal compartments C, D, two or more, the inner compartment or compartments being provided with a flooring or bottom E, and the outer compartment being open at its lower end, substantially as and for the purpose set forth.

EDW. H. TRACY.

Witnesses:

W. TUSCH,
W. HAUFF.