(No Model.)

J. M. REARDEN.

DEVICE FOR PROTECTING SHORES.

No. 398,080. Patented Feb. 19, 1889.

Fig. 2.

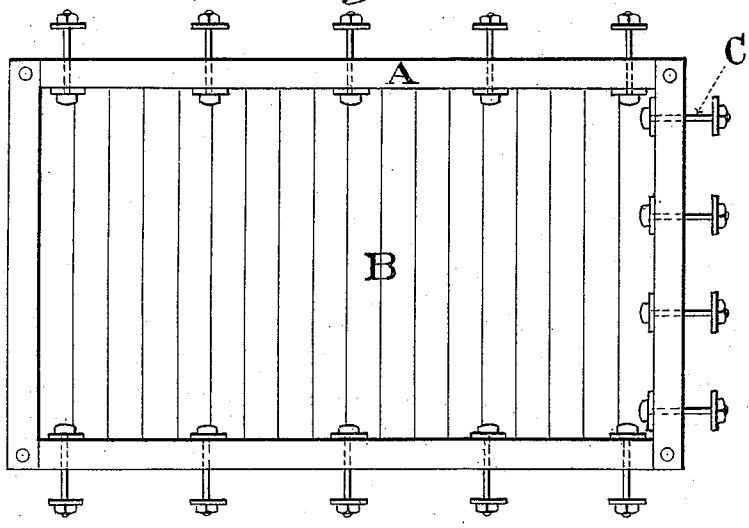


Fig. 3.

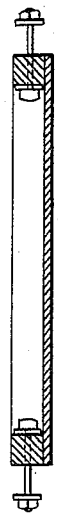
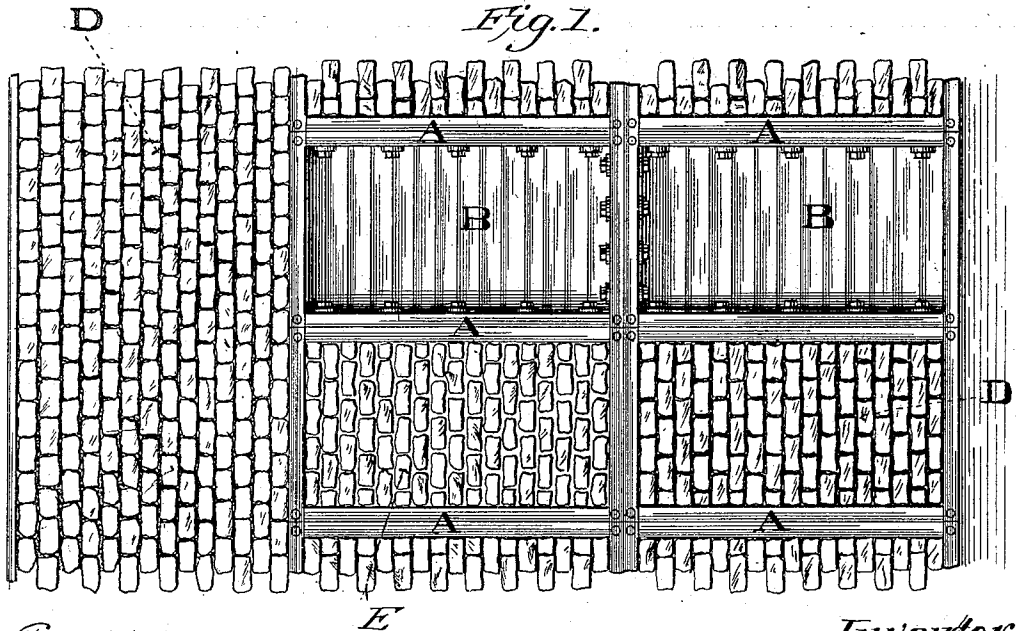


Fig. 1.



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UNITED STATES PATENT OFFICE.

JOSEPH M. REARDEN, OF CHICAGO, ILLINOIS.

DEVICE FOR PROTECTING SHORES.

SPECIFICATION forming part of Letters Patent No. 398,080, dated February 19, 1889.

Application filed June 23, 1888. Serial No. 278,038. (No model.).

To all whom it may concern:

Be it known that I, JOSEPH M. REARDEN, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Device for Protecting Shores, which improvement is fully set forth in the following specification and accompanying drawings.

The object of this invention is to construct and arrange a device for the protection of the shores of oceans, lakes, rivers, and streams.

My invention consists in forming a breakwater by building a series of shallow cribs of any desired size, the principal object being to get one of sufficient strength to accomplish the purposes desired.

The frame-work of the cribs can be built of wood, or sheet or cast iron, or other similar substance, preferably of wood, as it is cheaper. If wood is used, the cribs can be built preferably twenty feet long and ten feet wide, with timbers twelve inches by ten inches, and floored with three-inch plank. After the cribs are built they should be placed on the shore with the base of the cribs placed nearest the water immediately below the low-water mark. Any number of cribs may be placed together along the water-line of the shore and as far back as it is desired. These cribs should be bolted together with bolts of sufficient strength and length. The cribs are then paved with rubble-stones or other equivalent substance and carefully grouted with cement, so as to form a solid, compact, immovable mass. After one or two rows of these cribs are so built and bolted together and filled, the same can be used as a foundation for a paved beach, if it is desired, which, taken together with the cribs, will make a perfect protection for the shores, upon which the waves are thrown without meeting with any resistance whatever, and will recede with a natural flow. The pavement or paved beach can be built in the ordinary way with rubble-stones or other similar substance and filled in with gravel and sand or cement. The cribs, being placed so low in the water, offer no obstruction to the advancing waves and no opportunity for the receding waves to cut or form a current; nor can any settlement of the cribs take place so as to materially injure the uniformity of the surface, from the fact that they are so firmly bolted together that practically it becomes one solid crib. The surf has nothing to catch hold of either in advancing or receding, nor does the reaction of the current cut the shore. The crib is placed on the natural elevation of the beach or shore as found, it only being necessary, if there are any inequalities in the shore, to level the same.

In the accompanying drawings, Figure 1 shows a series of cribs bolted together, some of which are filled and graveled, with the paved beach. Fig. 2 shows one of the cribs without any filling, with bolts attached ready to be joined to its companion crib. Fig. 3 is a cross-section through Fig. 2.

A is the frame-work of the crib; B, the floor; C, the bolts; D, the stones after grouted and cemented, and E the space between the stones before the grouting was placed in.

What I claim, and desire to secure by Letters Patent, is—

1. A device for protecting shores, constructed of a series of cribs made of a stout and durable substance, firmly bolted together and filled with rubble-stones grouted and cemented so as to form one solid mass, substantially in the manner herein set forth.

2. A device for protecting shores, built and constructed of a series of cribs made of a stout and durable substance, firmly bolted together and filled with rubble-stones or other similar substance grouted and cemented so as to form one solid mass, substantially as herein described, as a foundation for and in combination with a rubble-stone or other pavement, substantially as described.

JOSEPH M. REARDEN.

In presence of—
H. H. DALE,
S. E. DALE.