

(No Model.)

B. C. KENWAY,  
CONSTRUCTION OF SEA WALLS.

No. 482,059.

Patented Sept. 6, 1892.

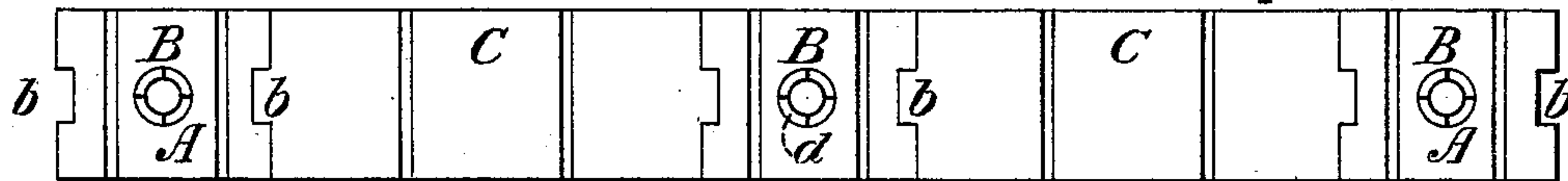


Fig. 1.

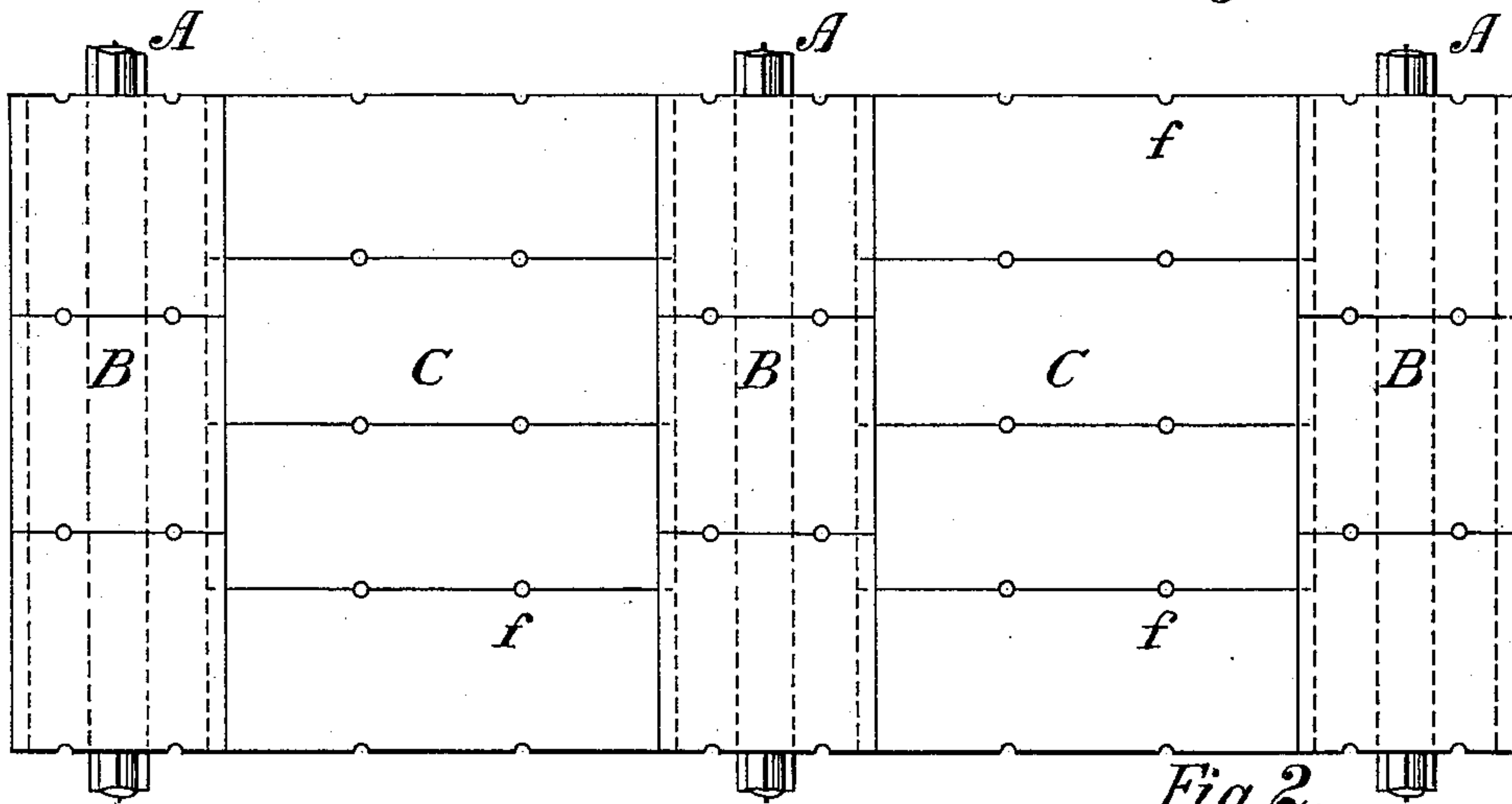


Fig. 2.

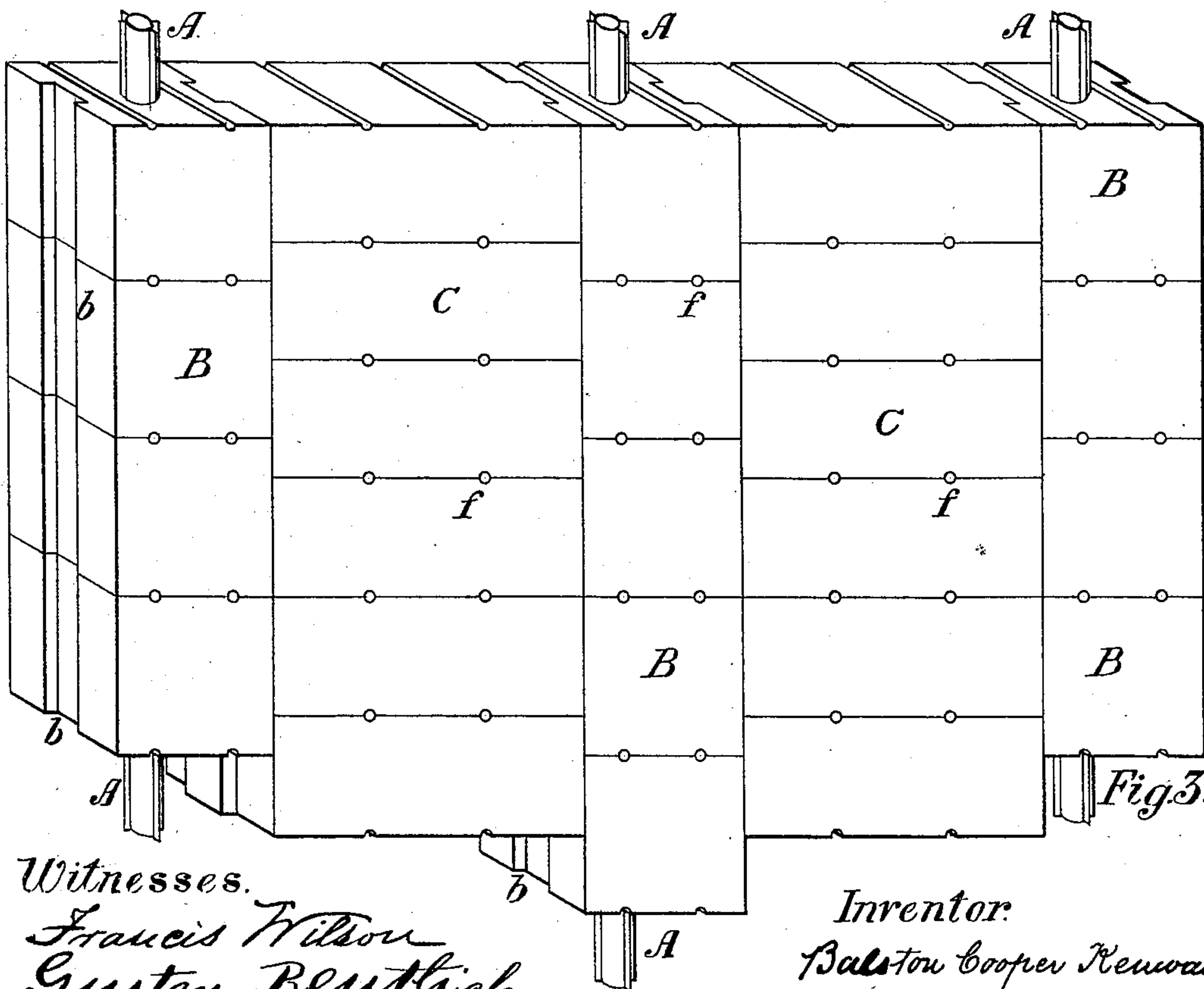


Fig. 3.

Witnesses.

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# UNITED STATES PATENT OFFICE.

BALSTON COOPER KENWAY, OF TACOMA, WASHINGTON.

## CONSTRUCTION OF SEA-WALLS.

SPECIFICATION forming part of Letters Patent No. 482,059, dated September 6, 1892.

Application filed June 16, 1891. Serial No. 396,483. (No model.)

*To all whom it may concern:*

Be it known that I, BALSTON COOPER KENWAY, a citizen of the United States, residing at the city of Tacoma, in the county of Pierce and State of Washington, have invented a new and useful Improvement in the Construction of Sea-Walls for Wharfs and for other purposes in localities where wooden piles and cribwork are liable to be destroyed by the teredo and other parasites, of which the following is a specification.

My invention relates to improvements in sea-walls whereby the vertical stability of iron or steel piles driven at intervals in the wall is used to reinforce the lateral stability due to the specific gravity and bond of the concrete or stone blocks used, and in the improvement in the protection of said piles from rust or deterioration by the action of salt water, and in the system of dovetail or groove-and-tongue joints in the vertical courses, in combination with the varying heights of said courses, whereby a firm and permanent bond is maintained. The wall is intended to be filled in with ballast on the land side or otherwise suitably prepared for wharf purposes. I attain these objects by the mode of construction illustrated in the accompanying drawings, in which—

Figure 1 is a plan of a portion of the sea-wall, which may be of any length. Fig. 2 is an elevation of a portion of the sea-wall. Fig. 3 is an isometrical projection of a portion of the wall.

Similar letters refer to similar parts throughout the several views.

The piles A A are, for the purpose of this specification, shown of the "Phoenix" pattern, though any suitable section may be used, and they are first driven or washed accurately in place and in vertical position. The blocks B B C C are made of concrete mixed in molds and

allowed to set in the customary manner. The blocks B are first lowered over the piles till the lower ones rest on the bottom accurately aligned. A scantling or guide is then driven in at the groove *b* at either end of the block to act as guide for the superimposed blocks B forming the several courses, so that the grooves *b b* may be practically continuous. The space *d* between the pile and the block is then grouted to prevent any tendency to turn on the pile. The blocks C C are then lowered into place, one after the other, until the work is up to the required height and the wall completed. The semi-cylindrical grooves *ff* in the bed and build of each block B B C C are used, first, for the slings used in lowering, and, second, to allow of the water passing through the wall as the tide ebbs and flows, so as to to equalize the pressure of the water on the inner and outer faces of the wall.

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

1. The sea-wall comprising courses of blocks B, the metallic piles A, arranged in said courses, and the courses of blocks C, of different heights from the blocks B, said blocks being all locked together by tongue-and-groove joints, whereby great lateral strength is obtained without the use of mortar and the blocks made to break joints, substantially as specified.

2. A sea-wall comprising metallic piles and concrete blocks locked together by tongue-and-groove joints, said blocks having edge grooves which serve the twofold function of passages for tide-water and receiving a sling in lowering them, substantially as specified.

BALSTON COOPER KENWAY.

Witnesses:

FRANCIS WILSON,  
GUSTAV BEUTLICH.