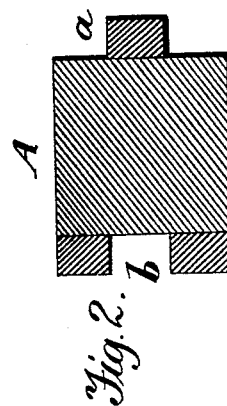
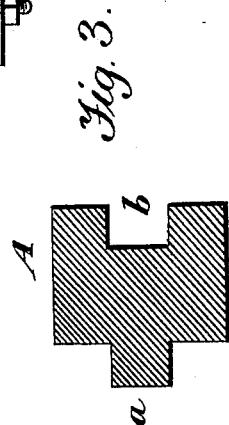
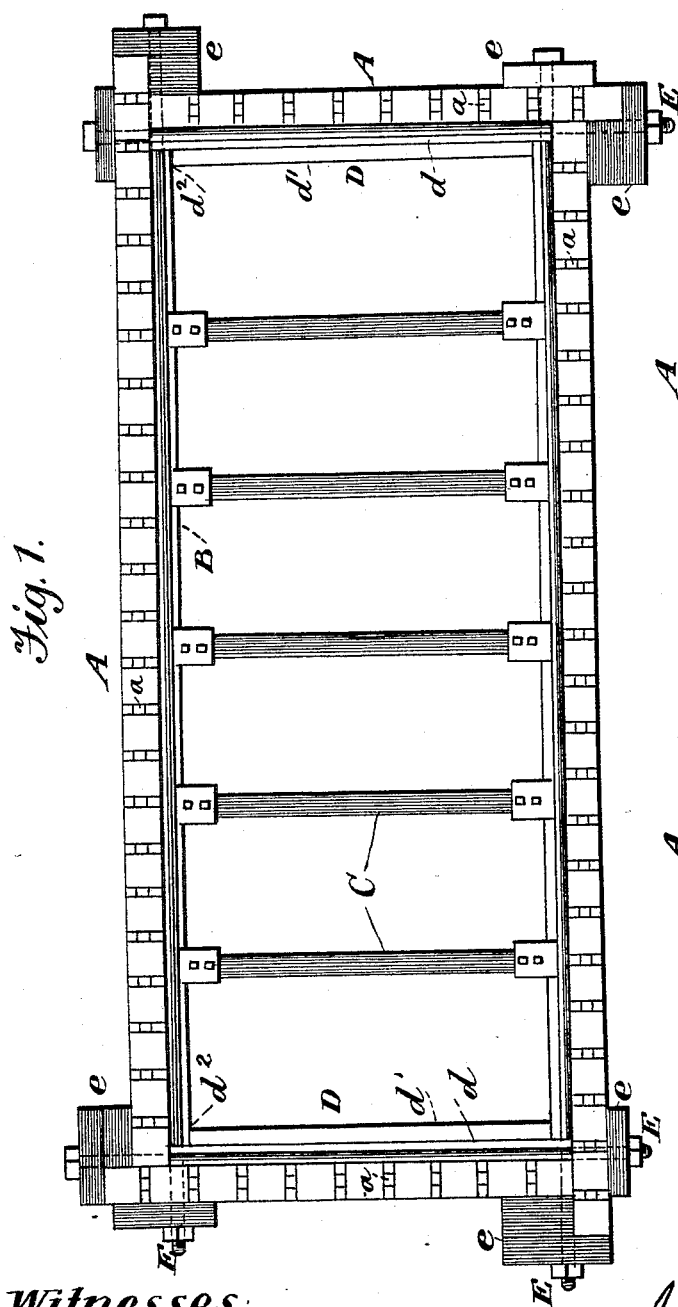


(No Model.)

J. E. ROBINSON.
COFFER DAM.

No. 454,383.

Patented June 16, 1891.



Witnesses:
A. Ruppert.
E. Curse.

Inventor:
John E. Robinson,
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att'y.

UNITED STATES PATENT OFFICE.

JOHN E. ROBINSON, OF PHILADELPHIA, PENNSYLVANIA.

COFFER-DAM.

SPECIFICATION forming part of Letters Patent No. 454,383, dated June 16, 1891.

Application filed March 12, 1891. Serial No. 384,732. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. ROBINSON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Coffe-Dams, of which the following is a specification, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

The object and nature of my invention will be fully set forth in the following specification.

In the drawings, Figure 1 is a plan of my improved coffer-dam. Fig. 2 is a sectional view of an improved pile which I use in its construction, and Fig. 3 a similar view of such a pile as is ordinarily used.

Similar letters and numerals of reference indicate similar parts in the respective figures.

A A represent the piles, and B B the side stringers of the frame, against which the struts C C abut. The end stringers D D of the frame are made of two timbers $d d'$, bolted together, the timber d , against which the piles bear, extending beyond each end of the timber d' , so as to form the rabbets $d^2 d^3$, into which the ends of the side stringers B fit. This will prevent either of the stringers from being forced inwardly at its ends. The double thickness or the end stringers will prevent their bowing inwardly at the middle, and the struts C C will prevent the side stringers B B from bending inwardly.

E E are the tie-rods for holding the upper ends of each row of piles together. Blocks e are used where it is necessary to make solid bearings for the nuts on the ends of the rods.

Each of the piles A, with the exceptions hereinafter mentioned, is provided with a tongue a and groove b . Usually in the construction of coffer-dams the piles are made from logs of suitable length and twelve inches square. When the piles are tongued and grooved in the customary manner—that is, by having portions of the timber cut away—they lose one-fourth of their width, (see Fig. 3,) and consequently four piles, each using a log one foot wide, will, when driven in position, only extend three feet. This involves the waste of much valuable lumber, and I propose to avoid this waste by keeping the twelve-by-twelve log intact and forming a

tongue and groove thereon by nailing strips four inches wide and three inches thick on opposite sides thereof, as shown in Fig. 2. These strips will extend the whole length of the log, two on one side flush with its edges and having a space four inches wide between them to form the groove and one on the opposite side of the log in the middle thereof to form the tongue. By this arrangement, instead of reducing the available surface of a log twelve inches wide to nine inches, I increase it to fifteen. Furthermore, as the strips can be made from a grade of lumber costing little more than one-half per thousand feet what the twelve-by-twelve logs cost, it will be readily seen that a very considerable reduction in the cost of constructing coffer-dams will result. The time spent in cutting away the log to form the tongue and groove will be saved, and obviously but little time will be consumed in forming the tongue and groove by nailing on the strips. Furthermore, these advantages are gained without reducing the strength of the structure.

In building my coffer-dam I proceed as follows: Having decided on the space to be inclosed, I make the necessary frames and place them in proper position. I then drive a pile—as, for instance, that marked 1 in Fig. 1—plumb at one corner thereof. This pile has neither tongue nor groove on the side which is in line with the outer edge of the frame, but its opposite side is provided with either a tongue or a groove. Piles having both tongue and groove are then driven in a line until they extend somewhat beyond the frame. This row of piles will form one wall of the dam. To start the wall which runs at an angle to that just finished, a pile similar to that marked 1 is driven, so that its side having neither tongue nor groove will lie flush against the inner surface of the wall already finished and be overlapped thereby. This second wall will then be made in the same manner as the first, and also extend somewhat beyond the frame. The remaining walls will be constructed in a similar manner, the last one abutting against and overlapping the pile first driven. As soon as the piles are all driven the tie-rods E are secured in place, and the dam will be complete.

Having described my invention, I claim—

1. In a coffer-dam, the side stringers of the frame, combined with the end stringers, each consisting of two timbers bolted together, one timber extending at each end beyond the
5 other timber to form rabbets into which the ends of the side stringers fit, substantially as specified.

2. In a coffer-dam, the combination, with the frames and the rows of piles driven
10 against the frames, of tie-rods for holding the upper ends of each row of piles together, substantially as specified.

3. In a coffer-dam, the rows of piles forming the walls of the dam, one end of each wall abutting against and being overlapped by the
15 adjacent wall, combined with frames and tie-rods for holding the upper ends of each row of piles together, substantially as specified.

In testimony whereof I have hereunto set my hand and seal.

JOHN E. ROBINSON. [L. S.]

Witnesses:

E. CRUSE,

G. M. FINLEY.