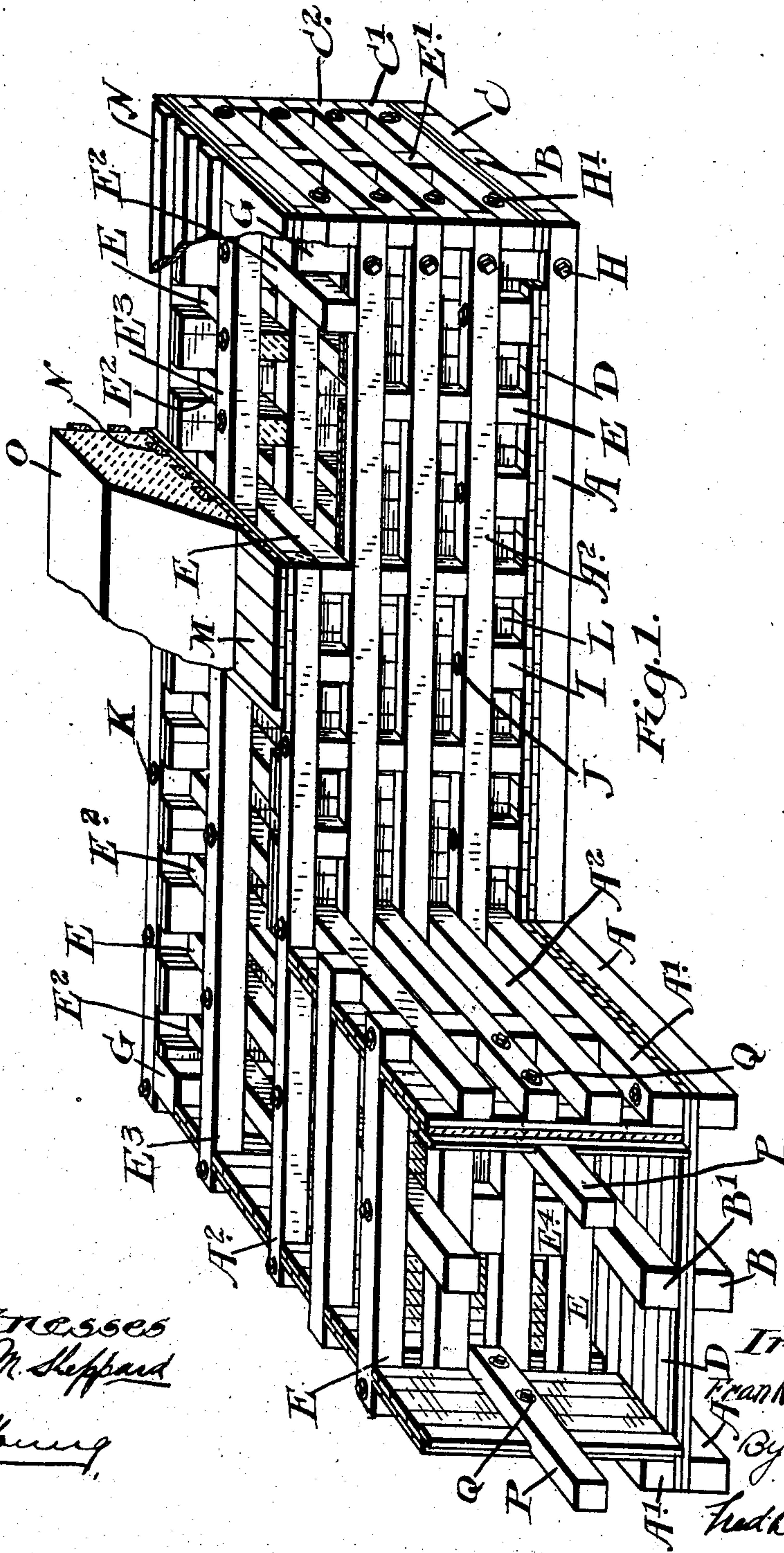


No. 827,186.

PATENTED JULY 31, 1906.

F. SIMPSON.  
CRIB CONSTRUCTION.  
APPLICATION FILED FEB. 13, 1906.

2 SHEETS—SHEET 1.



Witnesses  
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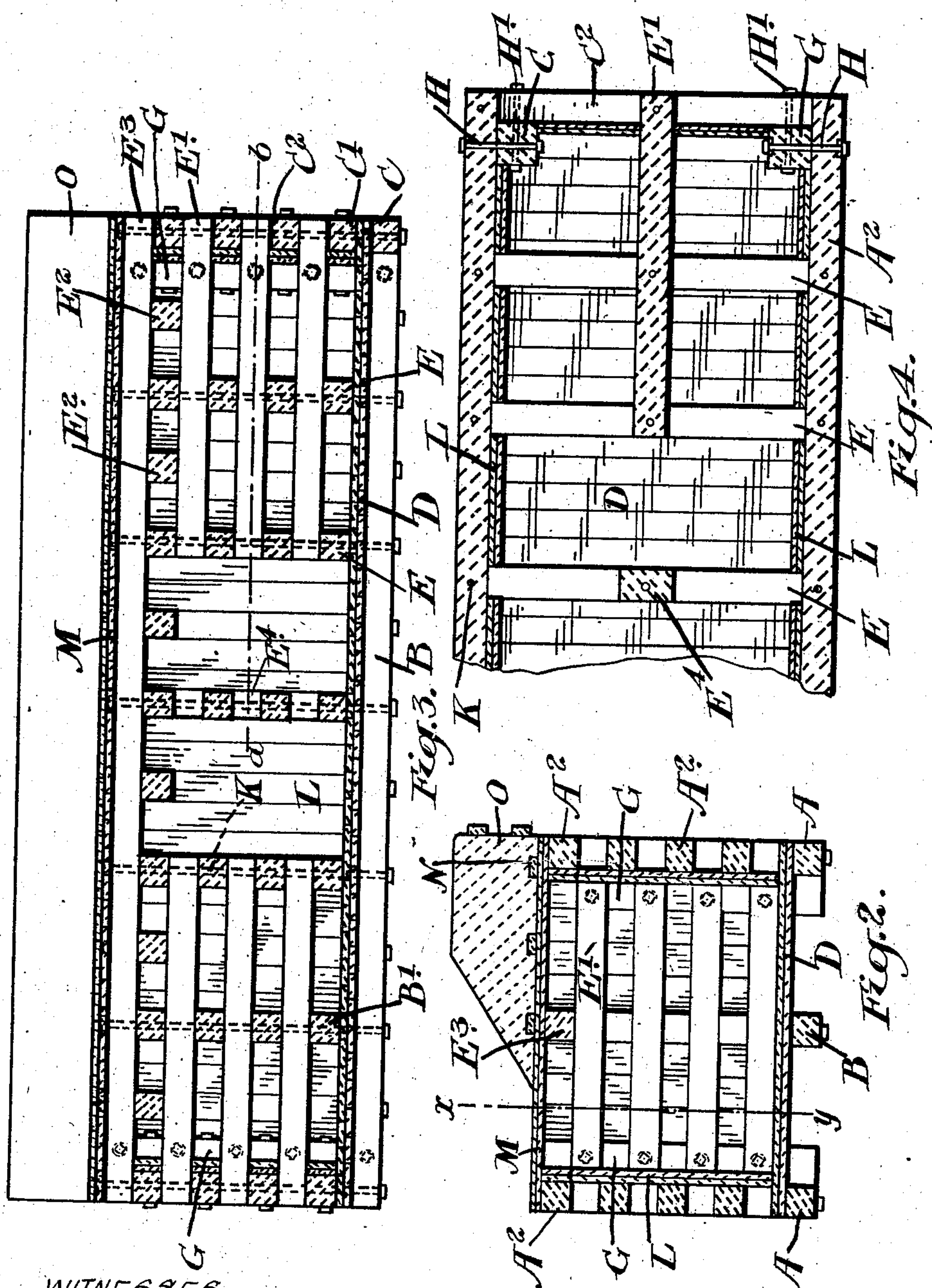
By  
Fred B. Feltus  
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

FRANK SIMPSON, OF TORONTO, CANADA.

## CRIB CONSTRUCTION.

No. 827,186.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed February 13, 1906. Serial No. 300,925.

*To all whom it may concern:*

Be it known that I, FRANK SIMPSON, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented  
5 certain new and useful Improvements in Crib Construction, of which the following is a specification.

My invention relates to improvements in  
10 crib construction or work particularly adaptable for wharves, sea-walls, lighthouses, and marine foundations, and such like uses; and the object of the invention is to devise a form or construction of crib which may be built  
15 by unskilled labor at a minimum expense and have a maximum strength for a minimum amount of material, which is especially adaptable for concrete superstructures, which may be made in a sheltered spot and then readily  
20 towed into place and sunk, using the cheapest or any suitable form of filling with the least expenditure of time, thereby avoiding exposure to the action of the waves, and such a crib as may be advantageously used as a scow or pontoon for carrying the filling material for constructional work, which will  
25 maintain its shape and rigidity when filled, no matter in what class of bottom it may be placed, and the sections of which may be held together, so as to form practically a continuous crib.  
30

My invention consists in the arrangement of face-timbers, cross face-timbers, longitudinal timbers, cross-ties, interior sheeting, floor, and deck, all bound together in truss-like form, as hereinafter more particularly  
35 explained.

Figure 1 is a perspective view of a corner portion of a crib constructed in accordance with my invention, the deck being for the  
40 most part removed and the crib being otherwise broken away and in section, and the cement superstructure being also shown in place but broken away and in section. Fig. 2 is a cross-section through my crib with the  
45 cement structure. Fig. 3 is a longitudinal section on the line *x y*, Fig. 2. Fig. 4 is a sectional plan on the line *a b*, Fig. 3.

In the drawings, like letters of reference indicate corresponding parts in each figure.

50 A represents the bottom face-timbers, and B the longitudinal timbers located intermediate of the face-timbers, and C the cross face-timbers.

D is the flooring, which extends across the  
55 face-timbers C and the longitudinal timbers B', consisting, preferably, of double sheeting

arranged so as to break joint and being, if desired, suitably calked.

C' is the cross face-timber immediately above the flooring and bottom face-timber at  
60 the end of the crib.

A' is a longitudinal face-timber immediately above the bottom face-timber A, on the right-angular extension of the crib.

B' is a longitudinal timber located on the  
65 flooring D immediately above the timber B.

A<sup>2</sup> represents the longitudinal face-timbers located one above the other and resting at the corner end upon each other, so as to leave a space between the face-timbers and at the  
70 end of the crib upon the cross face-pieces C<sup>2</sup>.

Interposed between the longitudinal face-timbers are the cross-ties E, which are of the same depth as the face-timbers and are located at desired distances apart in vertical  
75 sets from top to bottom of the crib throughout its length.

Interposed intermediately or midway of the face-timbers are the longitudinal timbers E', which extend, as shown in Figs. 1 and 4, between the face-timbers and cross-ties. Supplemental cross-ties E<sup>2</sup> are provided under-  
80 neath the uppermost longitudinal face-timbers and intermediate of the longitudinal timbers E<sup>3</sup>.  
85

The centrally-disposed cross-timbers E, (see Figs. 1 and 4,) are strengthened in the center by the addition of the blocks E<sup>4</sup>.

G represents the corner-timbers, which are held to the longitudinal face-timbers and  
90 cross face-timbers by the bolts H and H', respectively. As the bolts extend completely through the cross-timbers and the face-timbers, it will be readily seen that the corner of the crib is very securely strengthened and  
95 rendered rigid.

I represents blocks which are located intermediately of the cross-ties E in the lowermost space between the face-timbers and rest on the flooring, as indicated in Fig. 1.  
100

J represents floor-bolts, which extend through the face-timber immediately above the blocks, the blocks, the flooring, and the bottom face-timber, thereby securely holding  
105 the flooring in place when the space is next the flooring.

K represents through-bolts, which extend through all the longitudinal timbers, including the face-timbers and the cross-ties at each side of and at the center of the crib and  
110 through the blocks E<sup>4</sup>. These bolts are shown for the most part by dotted lines, and it will



be noticed that the bolts, as indicated by such lines, extend through from the uppermost timber down to the bottom of the lowermost timber.

5 L is the vertical sheeting, which is preferably doubled and breaking joint, as indicated, and which extends around inside of the face-timbers on all sides from the top of the uppermost longitudinal timber to the flooring, being, if necessary, at the flooring and at the top  
10 suitably calked, so as to form a water-tight joint.

M is the deck-planking, which extends crosswise, as indicated, and is provided with  
15 longitudinal cleats N, on which is molded by any suitable means a concrete superstructure O of any preferred form, such as shown in the drawings. The outer face of this concrete superstructure is provided with the longitudinal waling-timbers. The concrete superstructure, it will be noticed, at the bottom fills the space between the cleats, thereby securely holding such structure in position and against lateral displacement by the impact of the  
25 waves.

The deck-planking M, hereinbefore referred to, fits closely upon the top of the vertical sheeting.

The longitudinal timbers of the portion of  
30 the crib, as shown in Fig. 1, which extends at right angles to the main portion necessarily form the cross-timbers at the corner where they cross the longitudinal timbers of the main portion, as will be readily understood, and the longitudinal timbers of the main portion form the cross-timbers of the right-  
35 angular-extending portion hereinbefore referred to. Consequently by this construction a very strong corner is provided for the crib. This  
40 is only so of course where a corner is made in the cribwork.

One crib is connected to the end of the other by means of the longitudinal connecting-timbers P, which are bolted at the inside  
45 to the sheeting and the face-timbers by the bolts Q. The ends of the longitudinal connecting-timbers project beyond the end of the crib, so as to extend into a corresponding position in the abutting crib. As there may be  
50 several of these connecting-timbers, one above the other on each side, it will be seen that the method of connecting the cribs is very secure and effectual.

Such a crib as I describe can be built with  
55 less timber and less iron than others of which I am aware. The sheeting may be tongued and grooved, if necessary, so as to insure against leakage.

The crib may be filled with stone, gravel, or  
60 furnace-slag when exposed to the action of a heavy sea, but in quieter water sand, clay, or heavy mud can be used when the cribs are backed up on one side for use as wharves.

When the sheeting is calked, the crib may  
65 be partially filled with ballast before being

towed into position where it is placed, thus saving valuable time in sinking it. It may be also used as a scow or pontoon.

As all the bolts are through-bolts, the crib will not break apart as where the cribs are  
70 built with drift-bolts.

It can also be used as a caisson, the water being pumped out and the concrete placed in position in a solid mass instead of blocks of concrete having to be molded for use below  
75 water-level. It is specially adapted to be used below water-level, and when so placed will last indefinitely.

The crib may also be built with any desired slope or batter when used in a seaway,  
80 and when exposed to a very heavy sea the face can be covered with planking down to the bottom of the trough of the sea, so that there will be nothing to obstruct the action of the waves, which will expend their force gradually  
85 by running up the slope. It is also to be noted the great strength of the corners hereinbefore referred to.

In the construction of the crib all the timbers may be marked or bored from templates,  
90 thus avoiding much time and labor.

It will be noticed that each of the sides, ends, rows of ties and longitudinals are trusses, and as the floor is supported by these trusses it cannot sag under its load of ballast.  
95 In fact, to put it shortly, my crib is made of a truss-frame which carries all strains including flotation and load strains.

What I claim as my invention is—

1. In crib construction, a crib comprising  
100 bottom, longitudinal face-timbers and cross-timbers, a flooring supported on the same, the intermediate and upper face longitudinal and cross timbers resting at the ends one on the other, so as to form intervening spaces,  
105 the interior sheeting secured to the interior of the face cross and longitudinal timbers and forming a closed water-tight receptacle as and for the purpose specified.

2. In crib construction, a crib comprising  
110 bottom, longitudinal face-timbers and cross-timbers, a flooring supported on the same, the intermediate and upper face longitudinal and cross timbers resting at the ends one on the other, so as to form intervening spaces,  
115 the interior sheeting secured to the interior of the face cross and longitudinal timbers and forming a closed water-tight receptacle, the bottom blocks located in the bottom intervening space between the two lowermost  
120 longitudinal timbers and resting on the flooring, and floor-bolts extending through the two lowermost longitudinal timbers, the blocks and the flooring as and for the purpose specified.

3. In crib construction, a crib comprising  
125 bottom longitudinal face-timbers and cross-timbers, a flooring supported on the same, the intermediate and upper face longitudinal and cross timbers resting at the ends one on  
130



the other, so as to form intervening spaces, the interior sheeting secured to the interior of the face cross and longitudinal timbers and forming a closed water-tight receptacle 5 and the cross-ties having the ends located in the intervening spaces between the face longitudinal timbers as and for the purpose specified.

4. In crib construction, a crib comprising 10 bottom longitudinal face-timbers and cross-timbers, a flooring supported on the same, the intermediate and upper face longitudinal and cross timbers resting at the ends one on the other, so as to form intervening spaces, 15 the interior sheeting secured to the interior of the face cross and longitudinal timbers and forming a closed water-tight receptacle, the cross-ties having the ends located in the intervening spaces between the face longitudinal 20 timbers and the through-bolts extending through all the face-timbers and the ends of the ties as and for the purpose specified.

5. In crib construction, a crib comprising 25 bottom longitudinal face-timbers and cross-timbers, a flooring supported on the same, the intermediate and upper face longitudinal and cross timbers resting at the ends one on the other, so as to form intervening spaces, the interior sheeting secured to the interior 30 of the face cross and longitudinal timbers and forming a closed water-tight receptacle, and the corner vertical timbers and the bolts extending through such timbers and the face and cross longitudinal timbers as and for the 35 purpose specified.

6. In crib construction, a crib comprising 40 bottom longitudinal face-timbers and cross-timbers, a flooring supported on the same, the intermediate and upper face longitudinal and cross timbers resting at the ends one on the other, so as to form intervening spaces, the interior sheeting secured to the interior of the face, cross and longitudinal timbers and forming a closed water-tight receptacle, 45 and the intermediate longitudinal timbers

extending above and below the flooring and the intermediate blocks between the cross-ties and the through-bolts extending through the longitudinal timbers and ends of the cross-ties, and intermediate timbers and ties 50 as and for the purpose specified.

7. In crib construction, a crib comprising bottom longitudinal face-timbers and cross-timbers, a flooring supported on the same, the intermediate and upper face longitudinal 55 and cross timbers resting at the ends one on the other, so as to form intervening spaces, the interior sheeting secured to the interior of the face, cross and longitudinal timbers and forming a closed water-tight receptacle 60 and the deck-planking secured to the uppermost face, cross and longitudinal timbers and intermediate timbers as and for the purpose specified.

8. The combination with a crib formed 65 with a suitable deck-planking and cleats thereon, of a concrete superstructure molded or otherwise formed on top of the deck-planking and having its base molded around the 70 cleats as and for the purpose specified.

9. A corner-crib formed with longitudinal face intermediate timbers and cross-timbers, the longitudinal timbers of one portion forming cross-timbers on the longitudinal timbers of the other portion and a suitable lining for 75 the face-timbers as and for the purpose specified.

10. In a cribwork construction, the combination with the longitudinal face-timbers, flooring and lining or interior sheeting se- 80 cured to the face-timbers, of the connecting-timbers secured at the interior of the sheeting and extending beyond the end of the longitudinal timbers as and for the purpose specified.

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Witnesses:

B. BYD,

E. McEACHERN.