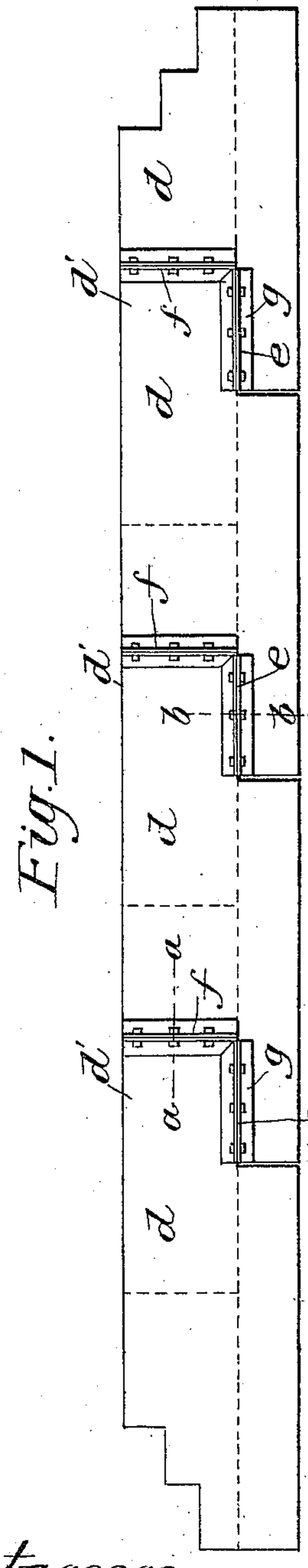
No. 820,109. PATENTED MAY 8, 1906.

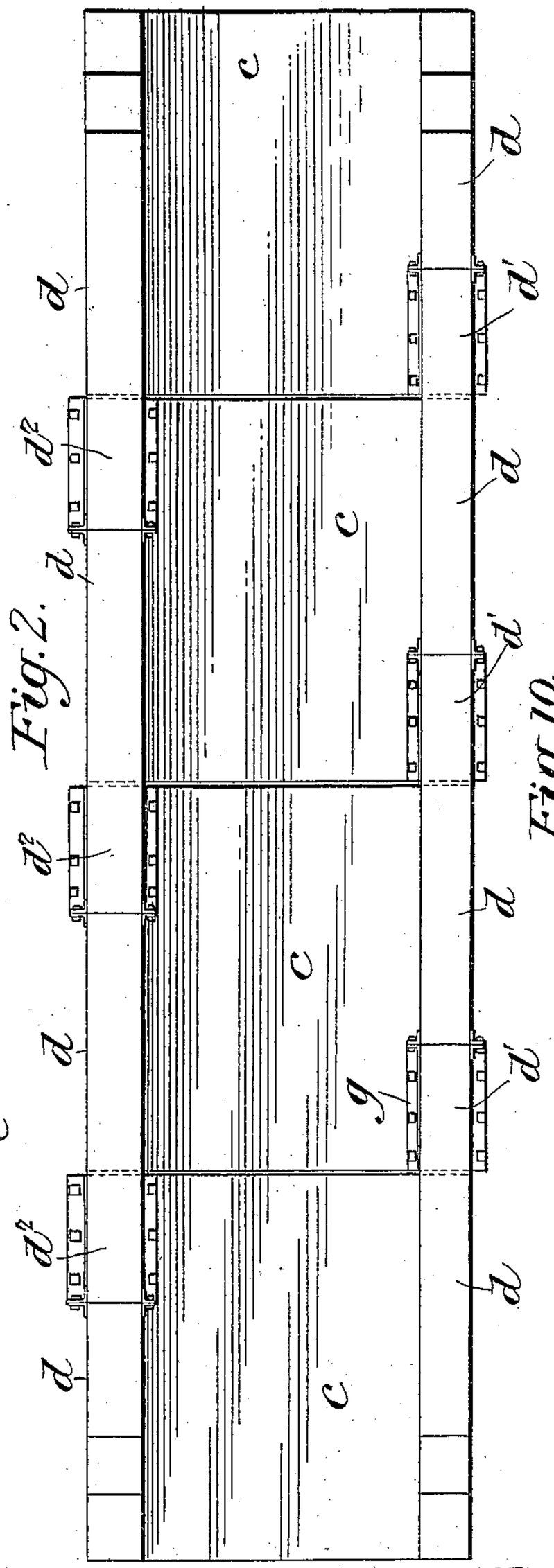
J. H. HANSSON.

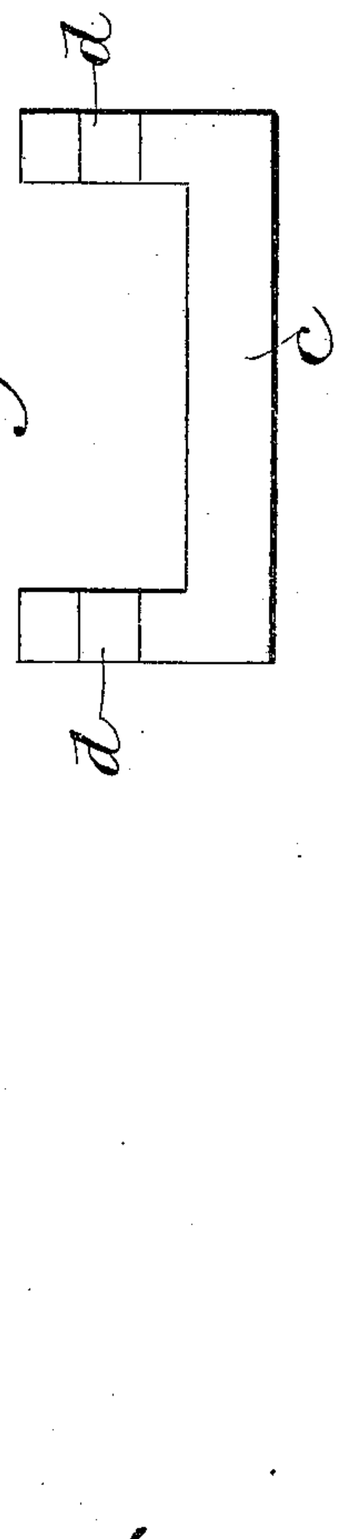
FLOATING DOCK.

APPLICATION FILED MAR. 8, 1905.

3 SHEETS—SHEET 1.







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3 SHEETS—SHEET 2.

Fig. 3.

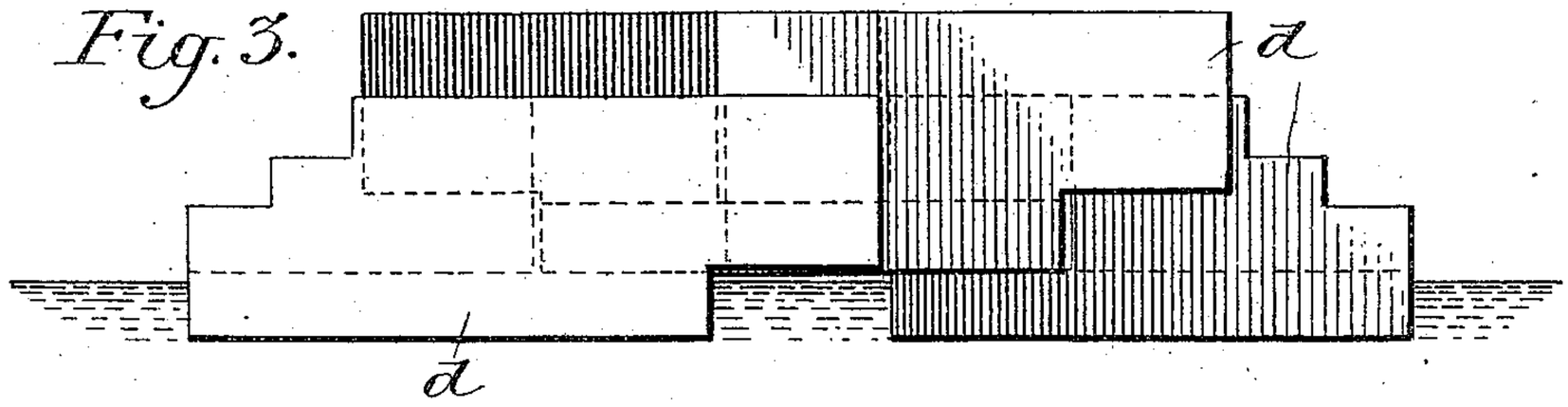
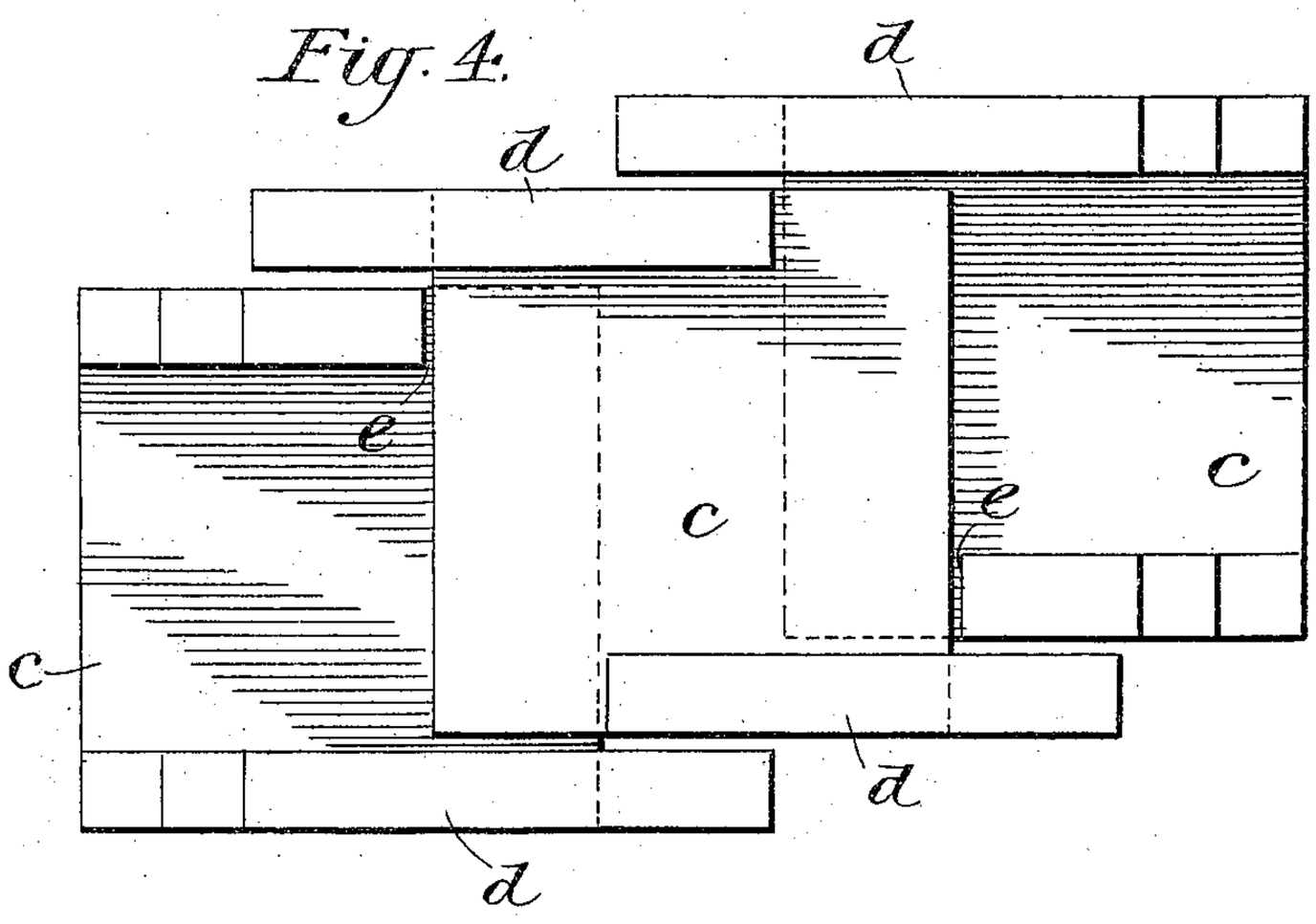


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

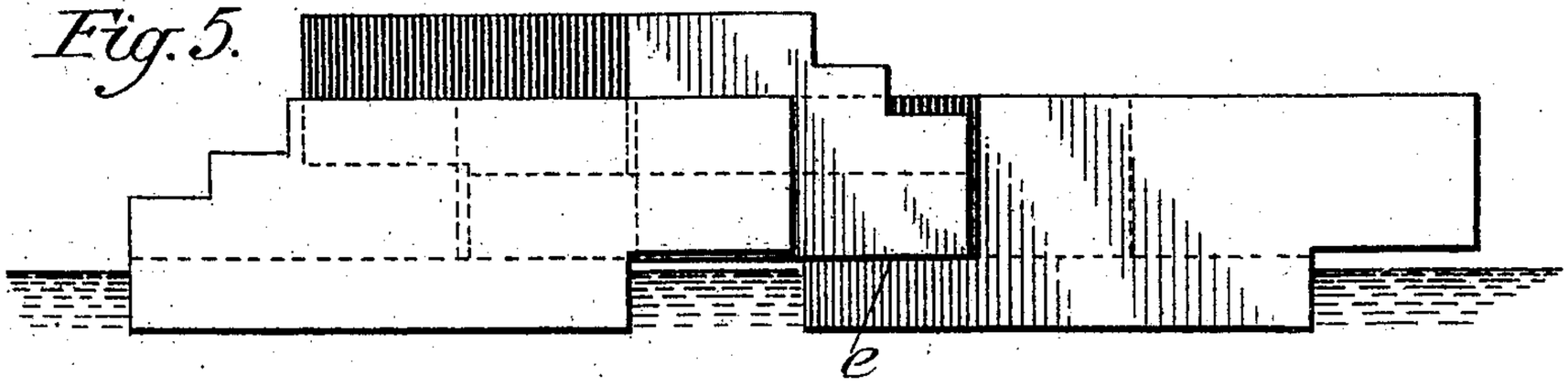

Fig. 6.

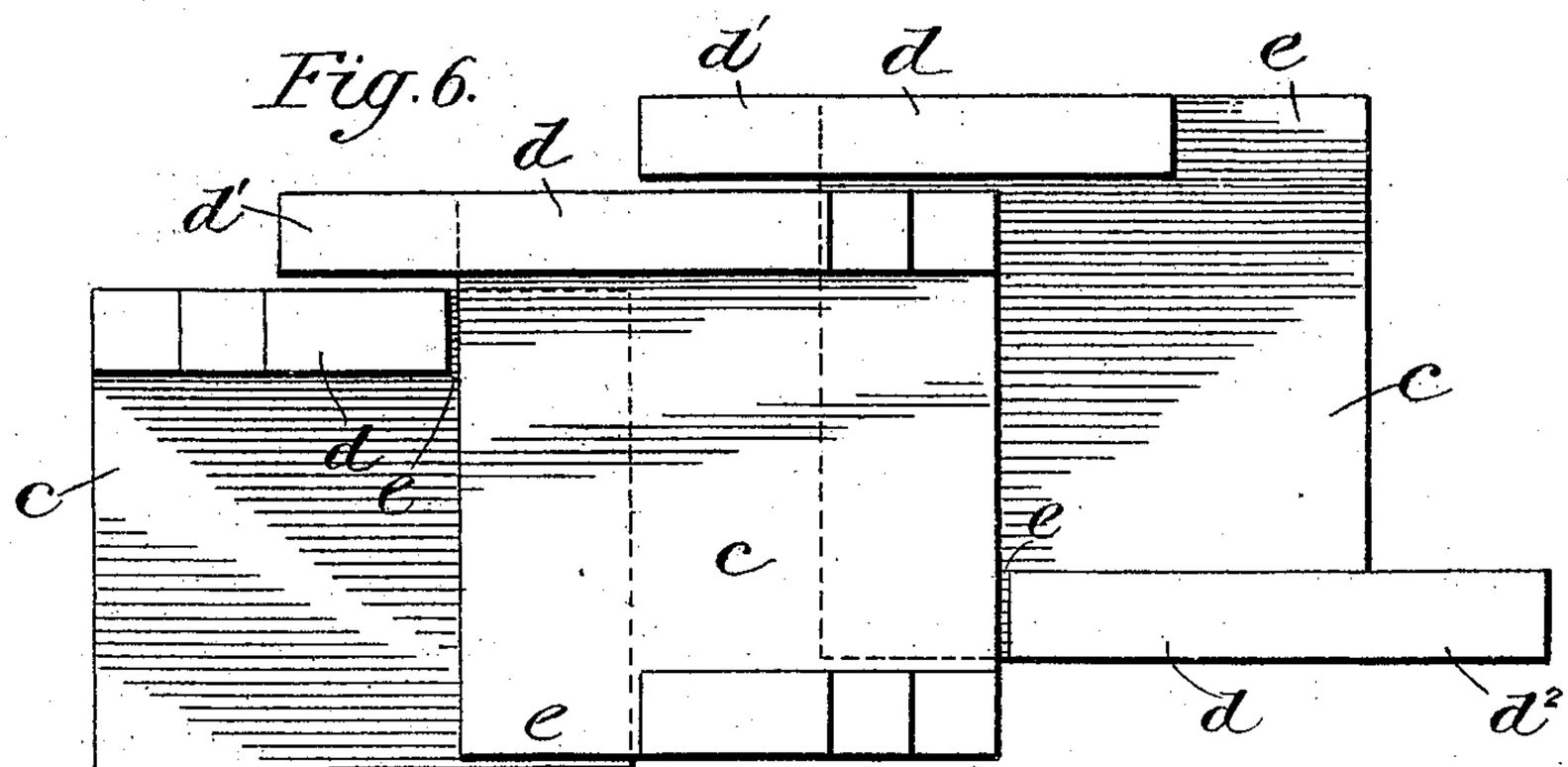

Fig. 7.

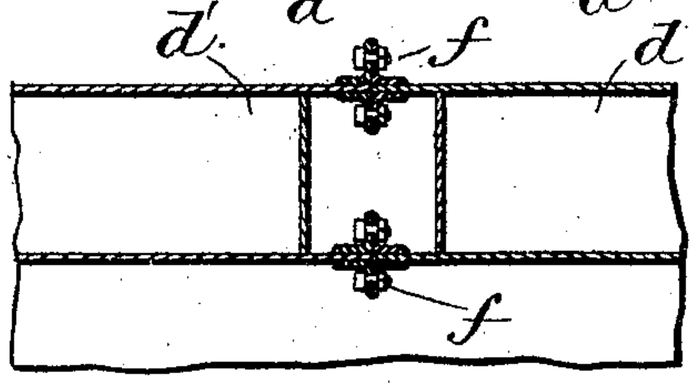

Fig. 8.

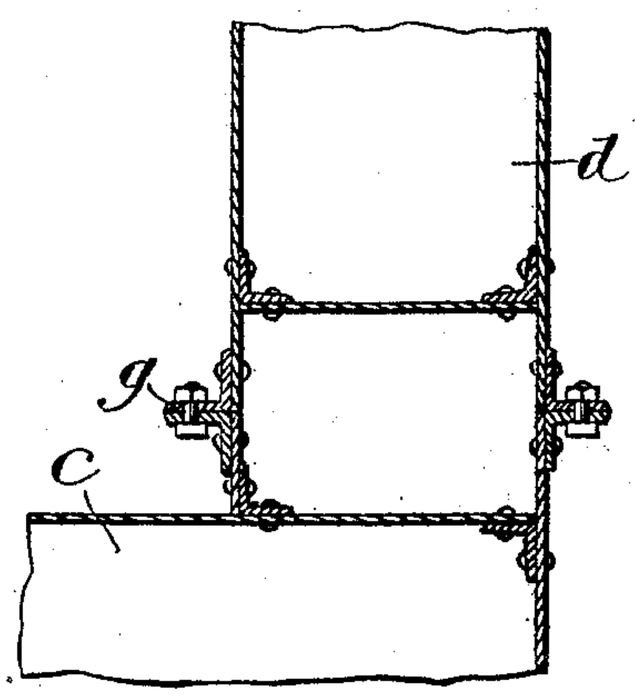

Fig. 9.

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UNITED STATES PATENT OFFICE.

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FLOATING DOCK.

No. 820,109. Specification of Letters Patent. Patented May 8, 1906.

Application filed March 8, 1905. Serial No. 249,078.

To all whom it may concern:

Be it known that I, JOHN HEGARDT HANSSON, a subject of the King of Sweden and Norway, residing at Sparrows Point, Baltimore county, Maryland, have invented certain new and useful Improvements in Floating Docks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to that class of floating docks which are composed of a plurality of sections that are separable from and attachable to one another, so that any of the sections may be self-docked.

The particular object of the invention is to stiffen the dock longitudinally at the joints between the sections and to reduce the time and labor required in self-docking the sections.

Floating docks built in sections that may be self-docked upon one another are not new; but heretofore these docks have been built so that the ends of any two adjacent sections butted together in the same vertical plane. It was therefore difficult to maintain the necessary rigidity of the dock at these points, and unusual and expensive fastening devices were required.

The dock of the present invention consists of a plurality of sections, each section comprising a pontoon having integral vertical side walls. The walls of the several sections are secured together end for end by suitable fastening devices; but instead of making the walls on opposite sides of the sections coextensive in length and position, as heretofore, which brings the joints between the walls on the two sides in the same vertical transverse plane, I arrange the walls so that on each section they extend beyond the pontoon at diagonally opposite corners and are omitted or cut away for a short distance from the ends of the pontoon at the other diagonally opposite corners. This throws the joints between the walls on one side of the dock out of line with those on the other side of the dock or, technically speaking, causes the joints between adjacent sections on one side to break joints with those between the sections on the opposite side. Moreover, by extending one of the side walls of each section beyond one end of each pontoon and omitting or cutting away the opposite wall of the same section on the opposite side of the same end of each pontoon the joints between the side walls of the dock are out of line with or break joints with those between the pontoons of the dock. In this way one end of each side wall extends endwise beyond the pontoon of the next section and bears upon and receives support from the same, and the opposite side wall is omitted or cut away or set back from the end of the pontoon, so as to allow the extended projecting end of the side wall of an adjacent section to extend over and receive support from the pontoon of the first-mentioned section.

The essence of the invention lies in constructing and locating the side walls so that the aforesaid extensions and cut-away portions alternate on opposite sides of the dock and at opposite ends of the several sections, by which arrangement there is no place in the dock structure where a vertical joint in the side walls comes in the same plane with the joint between the pontoons. In other words, where the joints in the side walls come the pontoons are continuous and where the joints in the walls on one side come the walls on the other side are continuous. By means of this arrangement the longitudinal strength and stiffness of the dock are greatly increased and additional advantages are secured by enabling the sections to be self-docked in the manner more fully described later on.

The invention is illustrated in the accompanying drawings, wherein—

Figures 1 and 2 show in side elevation and plan, respectively, a dock constructed according to my invention in four sections. Figs. 3 and 4 are respectively an elevation and plan of a dock of three sections, the intermediate section being self-docked upon the end sections. Figs. 5 and 6 are respectively an elevation and plan of a similar dock of three sections where one of the end sections and the intermediate section are employed to self-dock the other end section. Fig. 7 is a detail on the line *a a*, Fig. 1, showing one form of fastening devices between the side walls of

adjacent sections. Fig. 8 is a section on the line *b b*, Fig. 1, showing the same form of fastening devices applied to the horizontal joint between the sections. Fig. 9 shows a modification of the fastening devices shown in Fig. 7, and Fig. 10 is an end view of one of the sections.

Referring to the views, *c c* denote the pontoon portions of the several sections, and *d d* indicate the vertical side walls of the pontoons. As illustrated in the drawings, the side walls of each pontoon are integral or rigid therewith and rise vertically to the height of the dock, so that when the sections are secured together the pontoons and sides present continuous unbroken surfaces. The several sections of the dock have preferably the same cross-section and are of such size that any two of them can jointly support one of the others in self-docking.

Instead of making the side walls of the sections coextensive in length and position with the pontoons, as heretofore, I extend the wall on one side of each pontoon beyond one end, as shown at *d'*, and the other wall of the same pontoon is extended beyond the opposite end, as denoted at d^2. I also set back, cut away, or omit altogether the opposite end of each wall from the corresponding extended end on each pontoon, so that each pontoon will present a flat surface without any wall at diagonally opposite corners, as clearly shown in the plan views.

The sections being constructed as above described, when they are brought together the extensions *d'* of the side walls abut against the recessed or cut-away ends of the opposite side walls and overhang and rest upon the plain flat unwalled portions *e* of the pontoons and the vertical joints of adjacent sections are secured together by the fastening devices *f* or *f'*. These overhanging portions *d'*, that rest upon the pontoons, are secured thereto by similar fastenings *g*, so that the joints between the several sections comprise vertical and horizontal lines of fastenings, as illustrated in Figs. 1 and 2.

It is to be understood that the several sections will be equipped with pumping machinery of suitable construction, so that any one or more of the sections may be pumped out or filled, as may be required, in the self-docking operations.

In proceeding to dock one of the intermediate sections the dock is pumped out, so as to bring the pontoon-floors above the water-line. The vertical as well as the horizontal fastenings between the several sections are then removed, and all the sections are allowed to float free of each other. The two end pontoons are then sunk sufficiently and brought in under the intermediate pontoon or pontoons in the position shown in Fig. 4, after which the end sections are pumped out and raised until the intermediate section or sections are well above the water-line, so as to give the workmen access to all parts of the same. In docking one of the end sections the same procedure is followed, except that one end section and an intermediate section are sunk until their pontoons are below that of the other end section. The intermediate and end sections are then brought together, as illustrated in Fig. 6, with the opposite ends of the section that is being docked resting upon the ends of the other two sections and overlapping the same sidewise, as shown in Fig. 6, where it will be seen that the extension *d'* of the section that is being docked overlaps on the outside the side wall *d* of the left-hand end section, and the extension *d'* of the other outside section overlaps on the outside the wall of the end section that is for the time being between the two others.

It is to be noted that the position of the sections when self-docked is novel in that they are not in line with one another, but overlap with each succeeding section slightly to one side of the other. It is also to be noted that any of the sections may be self-docked in any position and that it is not necessary to turn them into any particular position.

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

1. A floating dock, composed of sections that are separable from and attachable to each other, each section consisting of a pontoon having integral vertical side walls, the joints between the opposite walls of the sections breaking joints with each other and with those between the pontoons.

2. A floating dock, composed of sections that are separable from and attachable to each other, each section consisting of a pontoon having integral vertical side walls, the joints between the walls of the sections on one side of the dock breaking joints with those between the walls of the sections on the opposite side.

3. A floating dock, composed of sections that are separable from and attachable to each other, each section consisting of a pontoon having integral vertical side walls, each of the walls extending beyond one end only of the pontoon, the extensions being at opposite ends of the pontoon.

4. A floating dock, composed of sections that are separable from and attachable to each other, each section consisting of a pontoon having integral vertical side walls, one wall extending beyond one end only of the pontoon, and the other wall extending beyond the other end only.

5. A floating dock, composed of sections that are separable from and attachable to

each other, each section consisting of a pontoon having integral vertical side walls, each of the walls extending beyond one end of the pontoon, and a portion of each wall being cut away or omitted from the opposite end of the pontoon, the extensions of the respective walls being at opposite ends of the pontoon so as to permit one of the sections to overlap and be supported by those ends of the other sections where the walls are cut away.

In testimony whereof I affix my signature in presence of two witnesses

JOHN HEGARDT HANSSON

Witnesses:

THOS. W. KEYS,

ROBERT Y. DIMPFEL.