J. L. CRANDALL.

SECTIONAL DRY DOCK.

APPLICATION FILED NOV. 26, 1917.

Patented Sept. 17, 1918.

2 SHEETS—SHEET 1.

1,279,084.

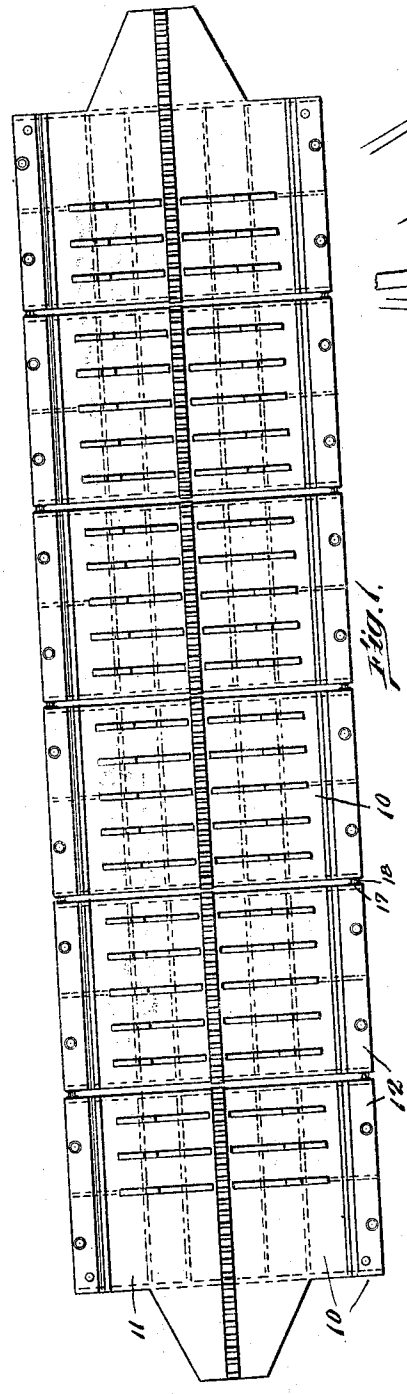


Fig. 1.

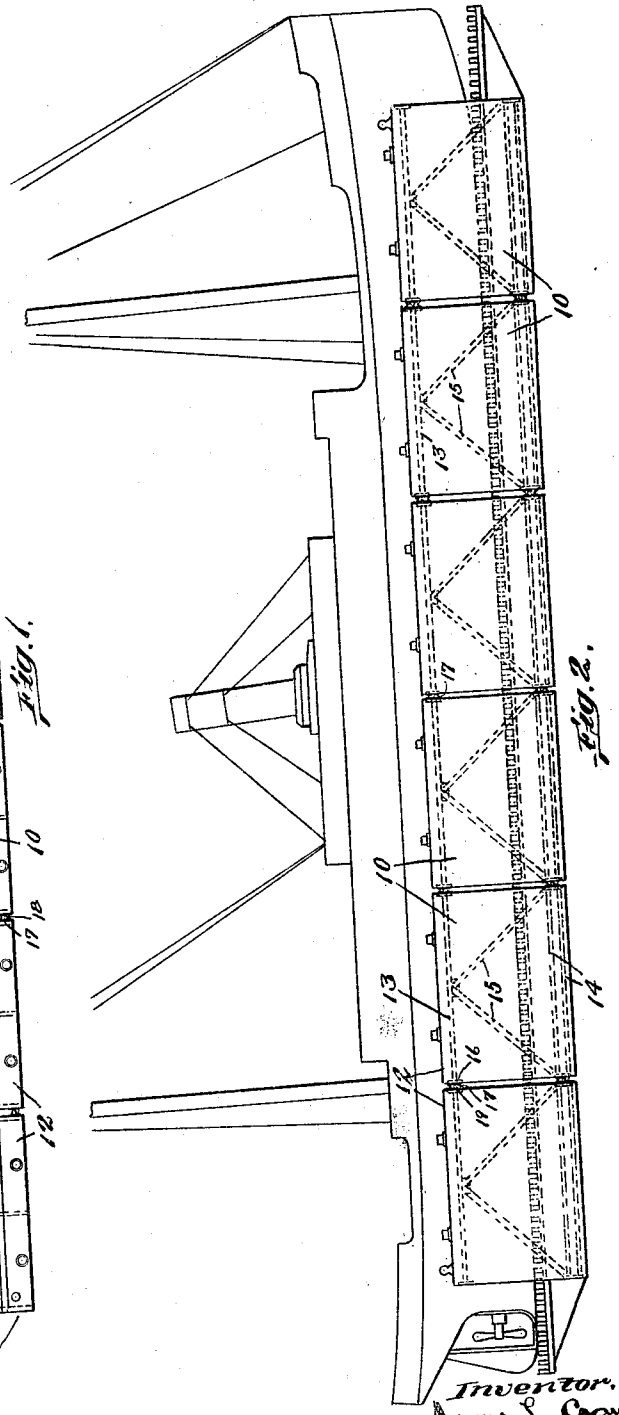


Fig. 2.

Inventor.
James L. Crandall
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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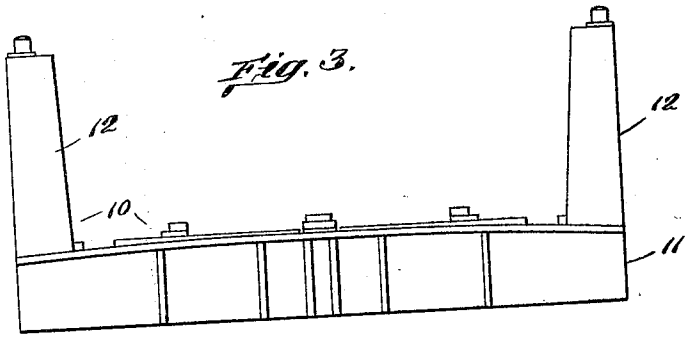
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Fig. 3.



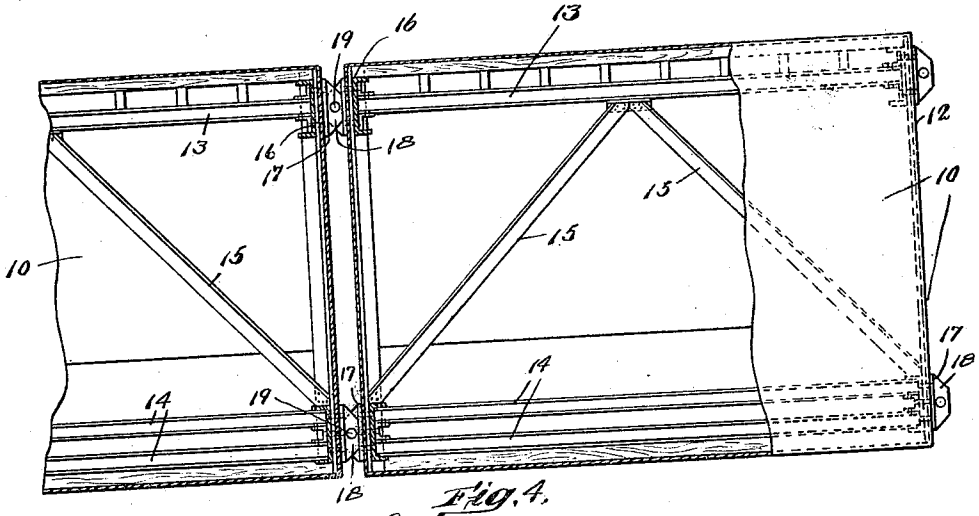


Fig. 4.

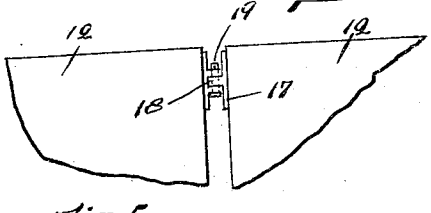


Fig. 5.

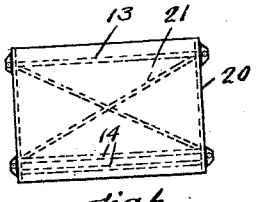


Fig. 6.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES L. CRANDALL, OF EAST BOSTON, MASSACHUSETTS, ASSIGNOR TO THE CRANDALL ENGINEERING COMPANY, OF EAST BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

SECTIONAL DRY-DOCK.

1,279,084. Specification of Letters Patent. Patented Sept. 17, 1918.

Application filed November 26, 1917. Serial No. 203,905.

To all whom it may concern:

Be it known that I, JAMES L. CRANDALL, a citizen of the United States, and a resident of East Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Sectional Dry-Docks, of which the following is a specification.

My invention relates to sectional floating dry docks of the general U-type, and has particular reference to means for rigidly securing the sections together to form a unitary structure.

The object of my invention is the provision of means whereby the component sections of the floating dry dock may be rigidly secured together to form a unitary structure, and whereby an unequal stress in any one section or sections may be transmitted to other sections to thereby distribute and equalize the load upon each section.

The means whereby I accomplish the object of my invention is in the provision of a truss or a section of a truss carried by the float portion of each section and preferably arranged within the side walls of each section, the members of which truss or part of truss have terminals extending beyond the ends of the side walls of the sections, providing means whereby two adjacent sections may be rigidly united, whereby the separate trusses or parts of trusses may form a unitary truss extended the length of the entire united section, and whereby the stresses set up in the members of any one truss section may be transferred to the members of other truss sections in the unitary truss.

Figure 1 is a plan view of a sectional dry dock embodying my invention.

Fig. 2 is a side elevation of the same.

Fig. 3 is an end elevation of a section.

Fig. 4 is an enlarged sectional elevation of a truss section as arranged in the side walls of the section, and the end connection between two adjacent sections.

Fig. 5 is a partial plan view of the end connection.

Fig. 6 is a side elevation of a dock section with a modified form of truss.

As here shown, the floating dry dock comprises a number of sections 10, adapted to be placed in juxtaposition to form the unitary dry dock illustrated in Figs. 1 and 2. Each section may comprise the bottom or float portion 11 and side walls 12. The bottom portion of the side walls may be made in any usual or convenient manner.

The truss, with which my invention is concerned, is or may comprise the top horizontal members 13, lower horizontal members 14 and transverse members 15 connecting the horizontal top and bottom members. The various members composing the truss or section of the truss may be formed of I beams, or any other customary or desirable structural shapes.

The top and bottom members 13 and 14 are provided with enlarged end terminal portions 16, to which are secured the end connecting members. The end connecting members formed with flanges 17 and extended ears or lugs 18, are secured to the enlarged end terminals 16, and thereby form an integral part of the truss structure arranged, as here shown, in the end wall of the section.

As here shown, certain of the end connecting members are formed with one extended ear or lug 18 and others are formed with two extended lugs, which are adapted to be placed in juxtaposition and secured together by a pin 19 extended through holes or openings through said ears or lugs 18, to thereby connect the top and bottom members of the truss section within each section to form a unitary structure extended between the sections.

Each truss section may be integral with or separate from the side wall of the section, but is adapted to be secured to the main body or float 11 of the section.

When each truss section is connected together through the end connecting terminals to form a unitary truss, it may be seen that, through such connection, the stresses in the members of any truss section will be transmitted, through the terminal connection, to members of other truss sections composing the united truss and that the dock sections are thereby rigidly united together to resist relative displacement in a vertical direction.

As here shown, that portion of the truss forming the lower member comprises two separate beams 14, which are united by the end terminal portion or member 16. If one section is loaded unequally in comparison to a contiguous section, there will be a shearing stress exerted upon the pin connecting the truss members, due to the tendency toward

relative vertical movement between the sections. With the provision of two separate bottom truss members maintained in vertical spaced arrangement, there is provided a large moment to resist the stresses set up by the unequal loading of the adjacent sections, and thereby to prevent distortion between the members.

So far as the object of my invention is concerned, it is immaterial what particular truss form is employed, which, when the truss sections are united to form a unitary truss, serves to rigidly unite the several dock sections, and the truss form may be modified in many ways to suit the particular requirements of the design of floating dry dock.

A modified form of truss is shown in Fig. 6, in which the top and bottom members 13 and 14 are maintained in spaced relation by the vertical end struts 20, which may be incorporated in the end walls of the side walls, and tension members 21 are extended between the ends of the top and bottom members. Such a form of truss is, to all purposes, equivalent to the truss above described, and will perform the functions equally well.

I claim:

1. In a floating dry dock comprising a plurality of independent dock sections adapted to be brought together to form the dry dock, of a truss section carried by each dock section, the truss sections of the independent dock sections being adapted to be connected together to form a unitary truss rigidly extended between the dock sections to thereby connect the independent dock sections.

2. In a floating dry dock comprising a plurality of independent dock sections adapted to be brought together to form the dry dock, of a truss section carried by each dock section, and means connecting members of the truss sections of the independent dock sections to form a unitary truss extended between the united dock sections.

3. In a floating dry dock comprising a plurality of independent dock sections each having a float portion and side walls, said independent sections adapted to be brought together to form the dry dock, of a truss section arranged within a side wall of each dock section, the truss sections of the dock sections adapted to be united to form a unitary truss rigidly extended between the united dock sections.

4. In a floating dry dock comprising a plurality of independent sections each having a float portion and substantially vertical side walls, said independent sections adapted to be brought together to form the dry dock, a truss section arranged within the side wall of each dock section and means arranged to connect members of each truss section of the independent dock sections to form a unitary truss extended between the united dock sections.

5. In a floating dry dock comprising a plurality of independent dock sections, a truss section carried by each dock section, end terminal members carried by members of said truss sections arranged to be connected to unite the dock sections and the truss sections to form a unitary truss extended between the united dock sections.

6. In a floating dry dock comprising a plurality of independent sections adapted to be brought together to form the dry dock, each independent dock section having a float portion and a truss wall portion, of means connecting the truss portions of said dock sections in the assembled position of said dock sections to form a unitary truss extended between the independent dock sections.

7. A sectional floating dry dock comprising a plurality of independent dock sections, each section having a float portion and a truss wall portion, said independent sections being adapted to be brought together to form the dry dock, and means connecting said truss wall portions of said independent dock portions in the assembled condition of said dock portions to form a unitary truss wall extended between the assembled sections of the dry dock.

8. A sectional floating dry dock comprising a plurality of independent dock sections adapted to be assembled to form a unitary dry dock, said independent dock sections having a float portion and a truss portion, said truss portion having compression and tension members extended the length of its float portion, and means connecting the tension members of the truss portions and the compression members of the truss portions in the assembled position of the dock sections to form a unitary truss extended between the independent dock sections united to form the dry dock.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JAMES L. CRANDALL.

Witnesses:
H. B. DAVIS,
T. T. GREENWOOD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."