

(No Model.)

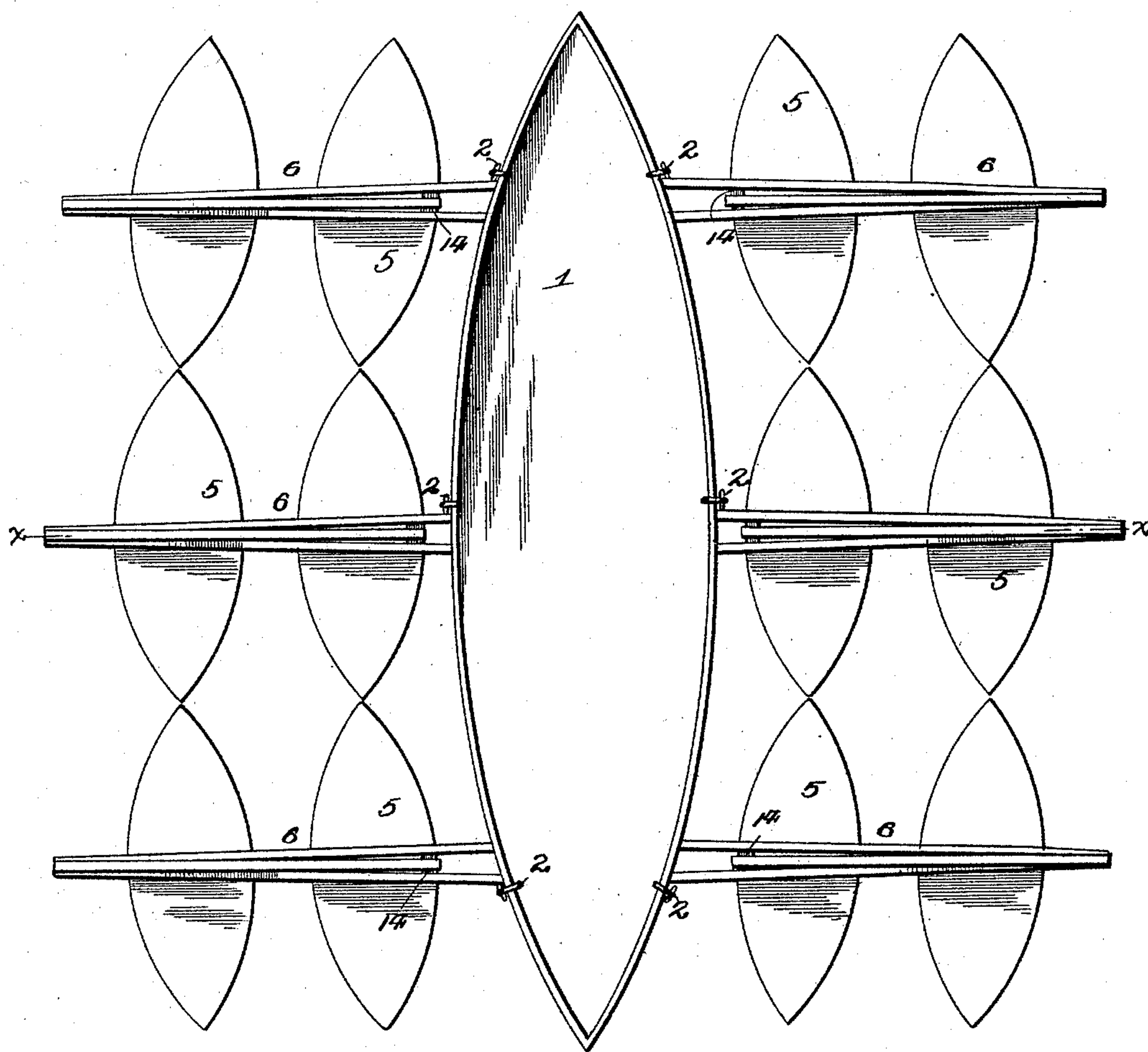
2 Sheets—Sheet 1.

J. A. BISCEGLIA.  
MEANS FOR RAISING SUNKEN VESSELS.

No. 526,800.

Patented Oct. 2, 1894.

FIG. 1.



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By *John Wedderburn*  
*Attorney*

(No Model.)

2 Sheets—Sheet 2.

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FIG. 2.

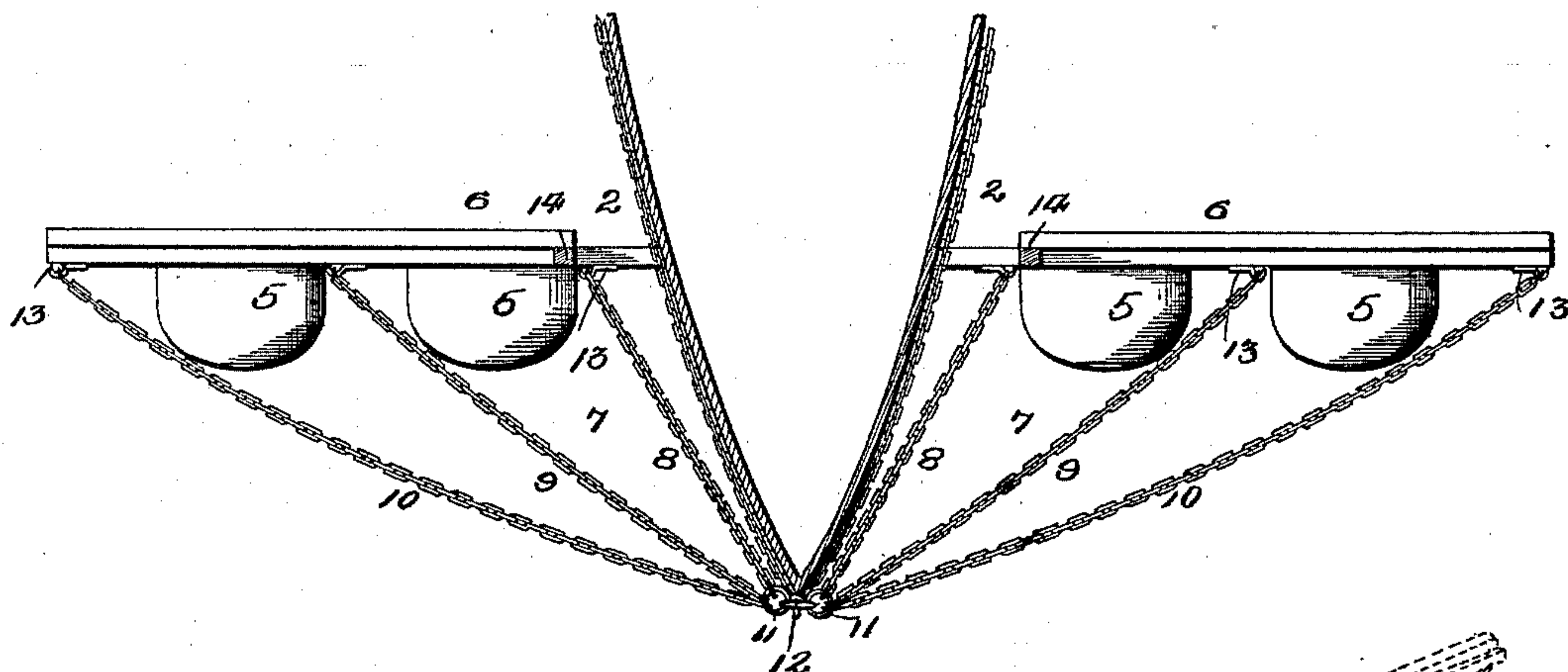


FIG. 3.

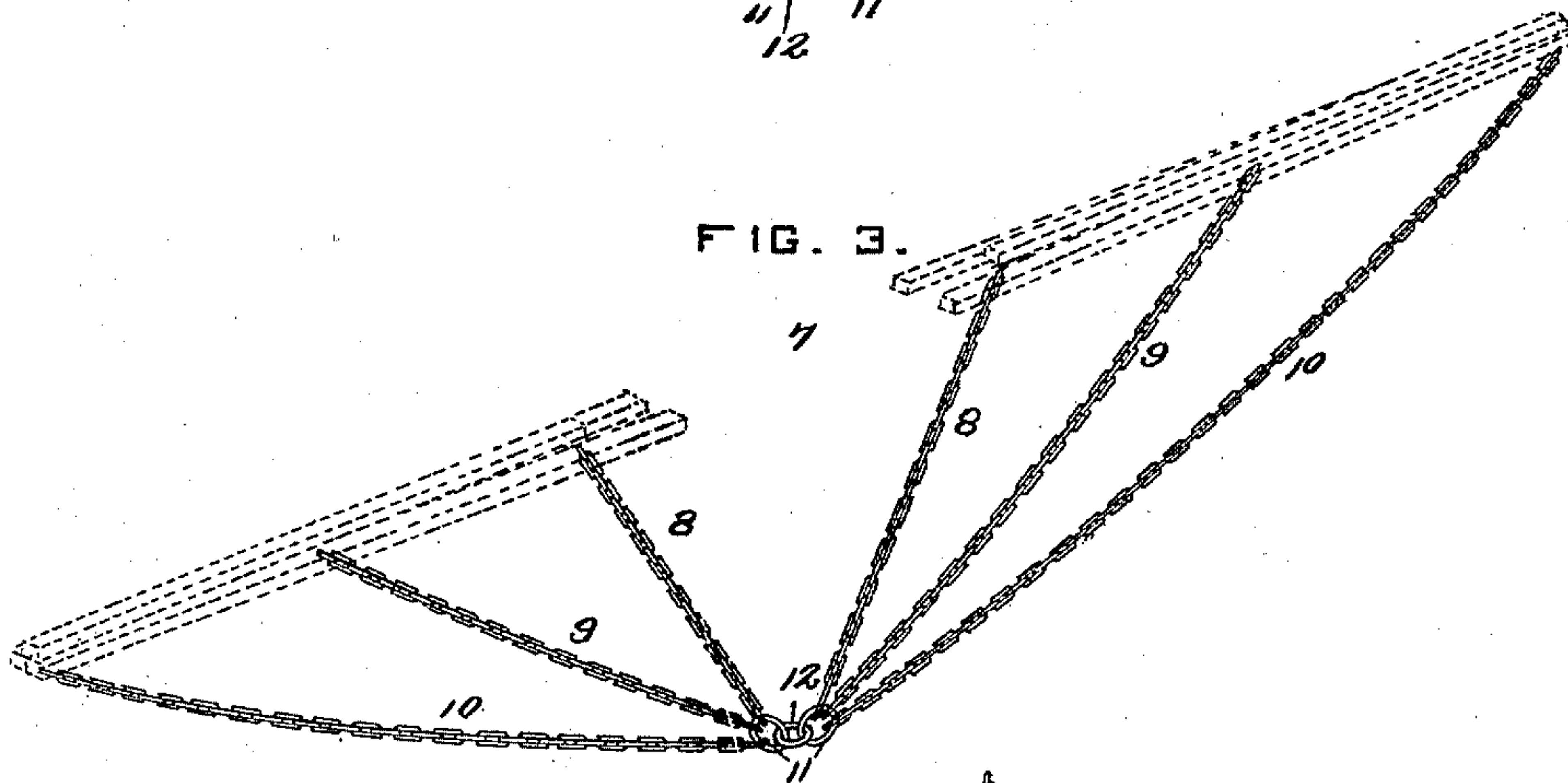
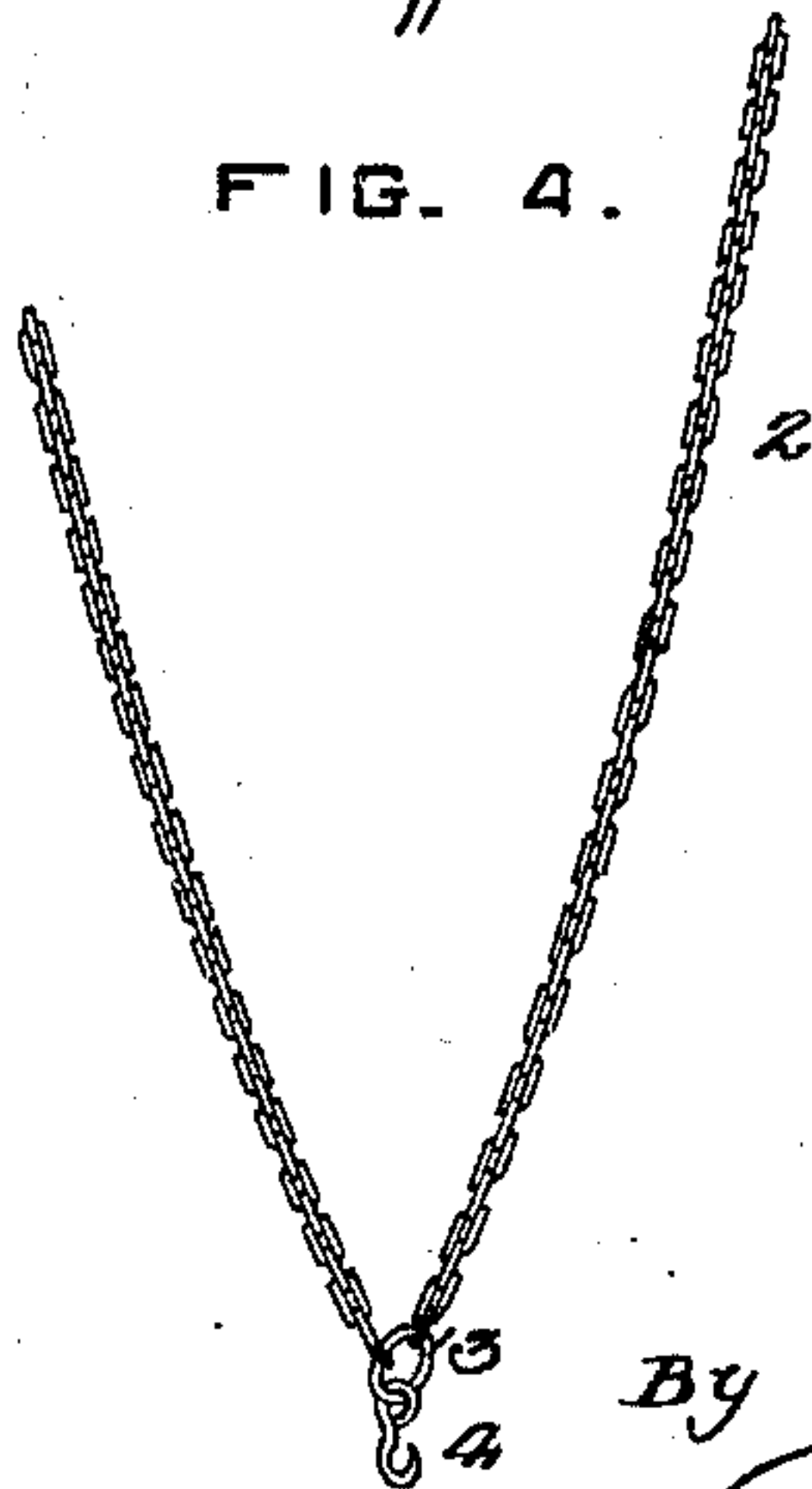


FIG. 4.



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# UNITED STATES PATENT OFFICE.

JOSEPH A. BISCEGLIA, OF WANETA, CANADA.

## MEANS FOR RAISING SUNKEN VESSELS.

SPECIFICATION forming part of Letters Patent No. 526,800, dated October 2, 1894.

Application filed October 13, 1893. Serial No. 488,018. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH A. BISCEGLIA, a subject of the King of Italy, who have declared my intention to become a citizen of the United States, residing at Waneta, in the Province of British Columbia and Dominion of Canada, have invented certain new and useful Improvements in Means for Raising Sunken Vessels; 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.

This invention relates to means for raising sunken vessels, and has for its object to render such operation easy and readily attainable, with but little cost and expense of time and labor.

With these and other objects in view the invention consists of the construction and arrangement of the several parts which will be more fully hereinafter described and claimed.

In the drawings: Figure 1 is a top plan view of the arrangement of floats and appliances around the vessel to be raised. Fig. 2 is a section on the line  $x-x$ , Fig. 1. Fig. 3 is a detail perspective view of one of the sustaining chains. Fig. 4 is a similar view of one of the attaching chains.

Similar numerals of reference are employed to indicate corresponding parts in the several figures of the drawings.

Referring to the drawings, the numeral 1 designates the sunken vessel to be lifted and floated from one position to another. Surrounding the sides of the said vessel and attached to the upper portion thereof are attaching chains 2, which are composed of two branches and united at the bottom by a ring 3, to which is attached a hook 4. The said chains are arranged at predetermined intervals and converge toward the keel of the vessel to the points where the hooks 4 are attached.

Arranged along the opposite sides of the vessel 1 are a series of flat boats 5, which, as shown, are grouped in pairs and three sets are employed on each side, though the number may be increased or decreased as may be found necessary and desirable. The flat boats are used because they can float in very shallow water, and are also capable of sustaining

a greater weight. It must be previously ascertained that the aggregate tonnage of the flat boats will be sufficient to exceed at least one-third of the weight of the sunken vessel, though it is better to equalize one-half of said weight. On each two flat boats is placed a beam or log 6, which is rested on the tops of said boats, and whose inner ends are caused to bear against the sides of the sunken vessel to prevent smashing or crushing of the inner flat boats which would be caused unless thus prevented, by the attraction toward a perpendicular.

A series of sustaining chains, 7, are provided and consist of three separate chains 8, 9, and 10, of varying lengths running up from a lower ring 11, which in turn is linked to another central ring 12. The chains are duplicated on opposite sides of the vessel, and the innermost chains 8, are attached to the beams adjacent to the inner sides of the inner boats 2, the chains 9 to the beams adjacent to the inner sides of the next boats, and the chains 10 to the beams adjacent to the outer sides of the outermost boats and thereby equalize the pressure and distribute the weight. At the points where the chains 8, 9, and 10 are attached to the beams flat hooked pieces, 13, of iron or other metal are secured, in order to prevent said chains slipping inward toward the vessel being raised, and which would frustrate the success of the operation. The said plates are raised and secured by screws or analogous fastenings.

The beams or logs 6 are arranged in series of three, the two lower beams or logs touching each other at their outer ends, and gradually diverging toward the sunken vessel until their inner ends are two or three feet apart in order to prevent any oscillation or leaning to the right or left of the boats to which they are attached. The third beam of the series, is superposed above the others by a space block 14, and the inner end of this beam does not reach the side of the sunken vessel and ends short of the inner side of the innermost flat boat proportionate to any amount of dip that could take place.

The form of the chains is not essential so long as they have yielding sections and may be either bar link, or ordinary elliptical or round link form. The boats 2 may also be



substituted by other forms of boats with equal efficiency.

5 The foundation of the success of the apparatus previously described, resides in the action of the tide in its ebb and flood conditions. After having arranged the several parts as stated, the flood tide is awaited, and when it is full, the flat or other boats are moved toward deeper water than that in which  
10 the sunken vessel has been located, it being understood that the adjustment of the chains is such as to lift the said sunken vessel when the tide begins to rise. In order therefore, to release the chains, after the sunken vessel is  
15 afloat, it is necessary to gradually seek or tow the sunken vessel to seaward and in water of such depth that at ebb tide the keel will not touch bottom, and permit the chains to be slipped from under the keel or unhooked.  
20 Of course the vessel being raised may be lightened by any suitable means to assist in its buoyancy, and this will be done previous to moving toward deep water. In handling very heavy vessels, the flood tide at the point  
25 to which the vessel is to be transferred may not produce a depth sufficient to float the vessel. In this case, the operation of floating is repeated, and the chains proportionately lengthened to the number of feet descended  
30 from the previous to the last level sought.

Various changes may be made in the operation of floating and in the parts or arrangement of the apparatus without in the least departing from the nature or spirit of the invention.

Having thus described the invention, what is claimed as new is—

In an apparatus of the character set forth, the combination of a series of attaching chains united at the bottom to a ring, a hook attached to said ring, said chains converging toward the said ring which is located at the keel of the vessel, a series of flat boats arranged along the opposite sides of the vessel, beams or lugs placed on the said flat boats and each arranged in a series of three, two of the same being longer than the third one of each series and gradually diverging toward the sunken vessel, the third beam being superposed above the others and supported by a spaced block and sustaining chains, substantially as and for the purposes specified.

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

JOSEPH A. BISCEGLIA.

Witnesses:

F. J. DALY,  
W. M. NEWTON.