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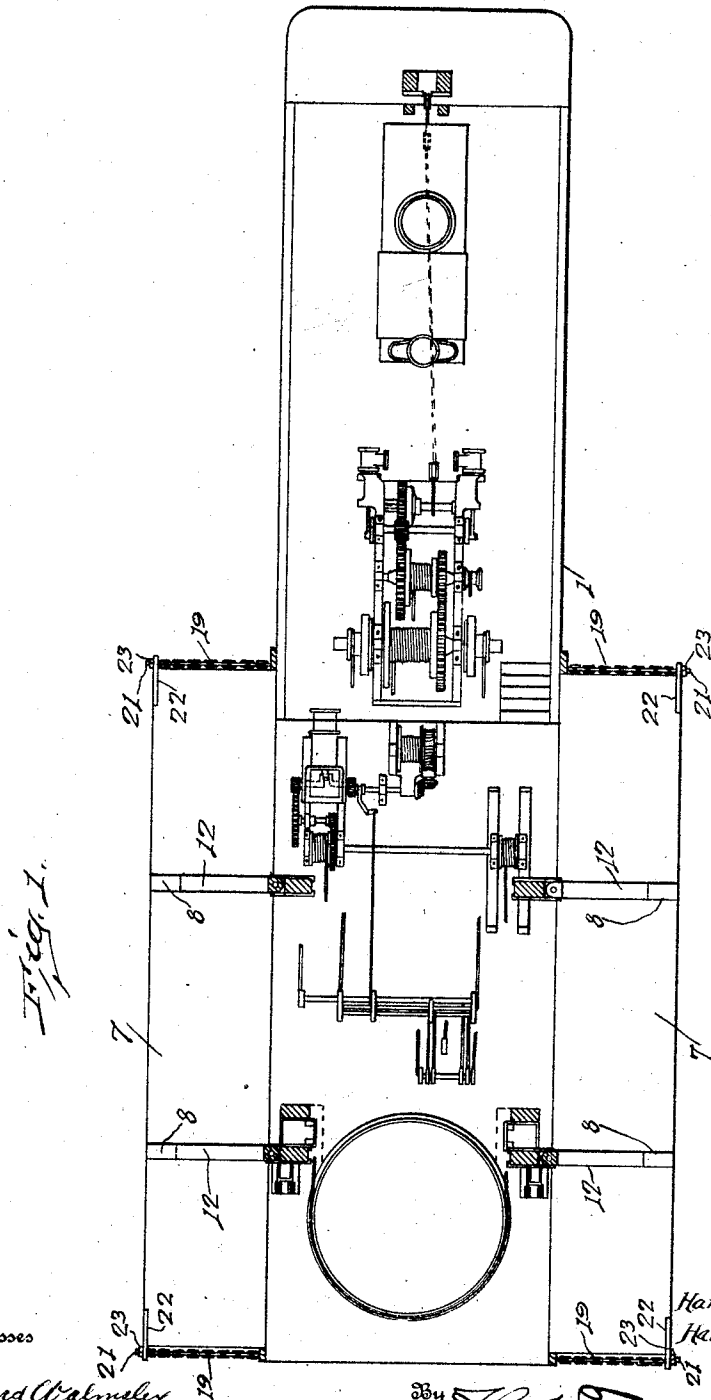
FLOAT FOR DREDGES.

APPLICATION FILED SEPT. 20, 1909.

1,010,568.

Patented Dec. 5, 1911.

3 SHEETS—SHEET 1



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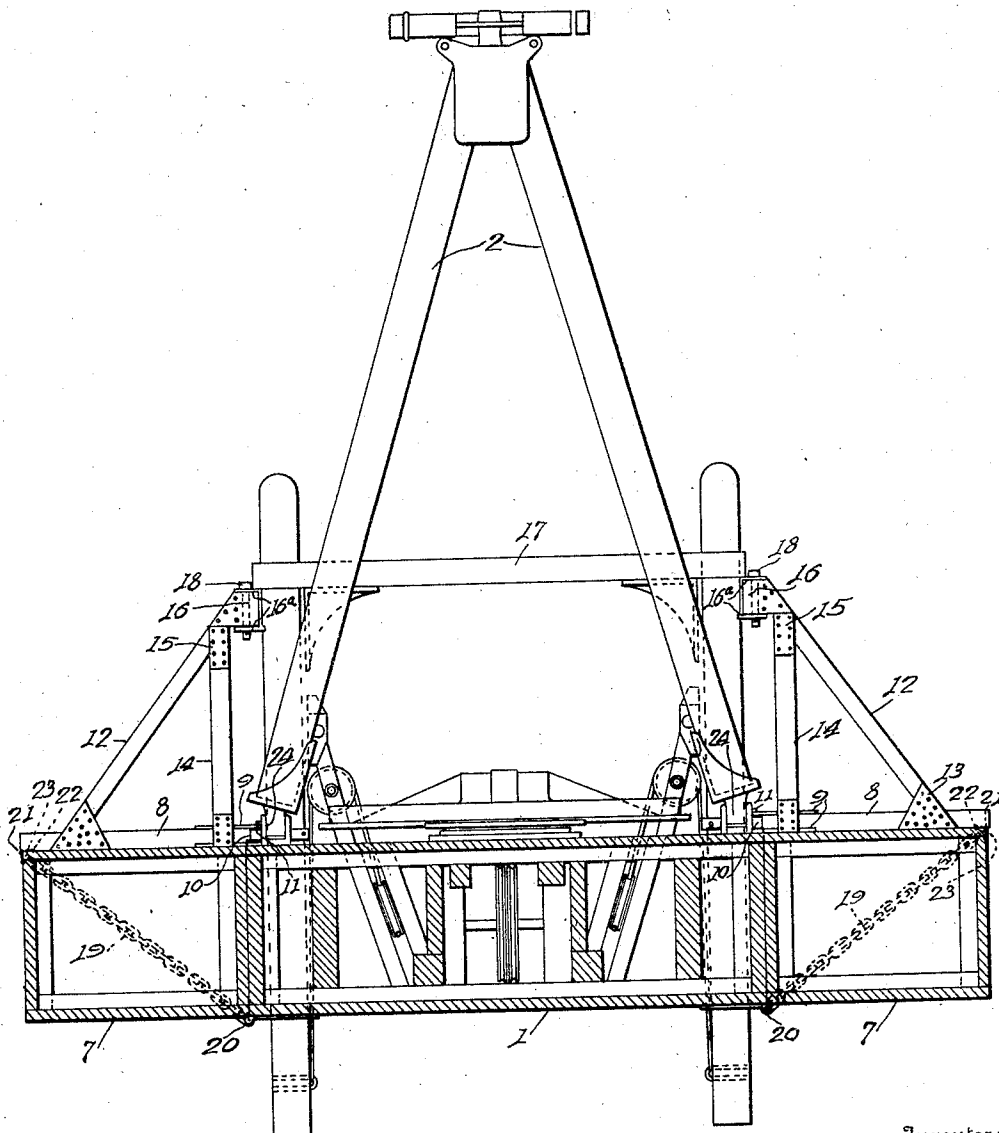
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Fig. 2.



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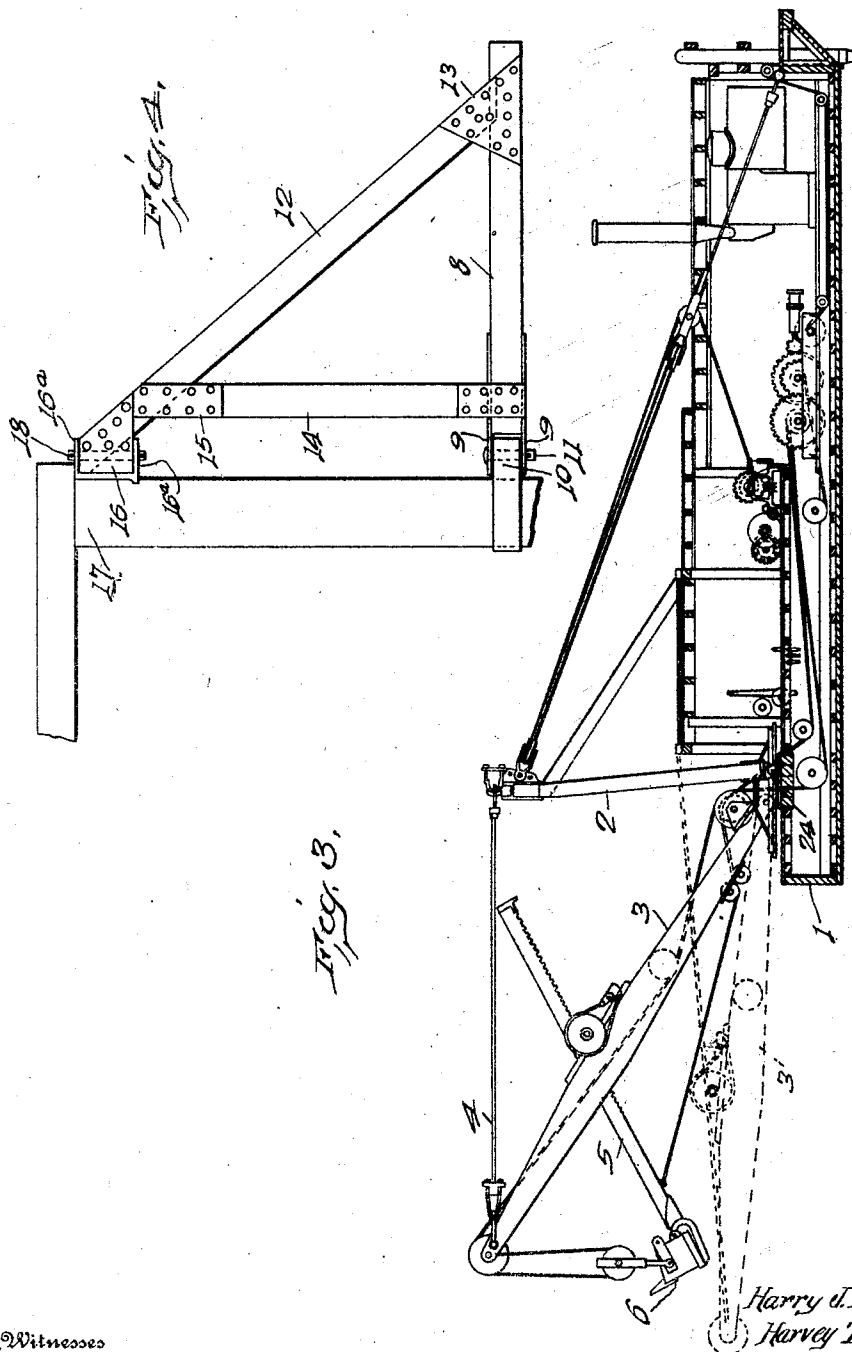
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3 SHEETS-SHEET 3.



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UNITED STATES PATENT OFFICE.

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FLOAT FOR DREDGES.

1,010,568.

Specification of Letters Patent.

Patented Dec. 5, 1911.

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To all whom it may concern:

Be it known that we, HARRY J. BARNHART and HARVEY T. GRACELY, citizens of the United States, residing at Marion, in the county of Marion and State of Ohio, have invented certain new and useful Improvements in Floats for Dredges, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to dredges, and more particularly to dredges designed for work in canals.

The object of the invention is to provide a dredge which can be readily dismantled to permit the same to pass through the locks of a canal and under low bridges, both where the bridge occurs immediately above the lock and where they occur separately.

To enable a dredge to pass through the locks of a canal it is necessary to make the body portion narrow, and, to impart to this body portion the buoyancy and stability required for the practical operation of the dredge, floats are secured on each side thereof. To permit the dredge to be readily dismantled and assembled, before and after passing through a lock, it is a further object of the invention to provide means for easily and quickly attaching and detaching these floats to the body portion of the dredge, and it is also an object of the invention to provide means whereby the A-frame and boom may be lowered into a position in which they will pass beneath bridges or other obstructions extending above the canal.

A further object of the invention is to so arrange and mount the several actuating drums as to accommodate the same to the narrow hull construction and at the same time afford ample clearance for the respective cables.

With these objects in view our invention consists in certain novel features and in certain combinations and arrangements of parts hereinafter to be described, and then more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view, partially in section, of a dredge embodying our invention; Fig. 2

is a transverse sectional view of the same; Fig. 3 is a longitudinal sectional view thereof; and Fig. 4 is a detail view of one of the folding braces.

In these drawings we have illustrated one embodiment of our invention and have shown the same as applied to a dipper dredge of well known construction. This dredge comprises a body portion or hull proper 1, upon which is mounted the supporting or A-frame 2 and boom 3, the outer end of which is connected to the A-frame by the usual connection, as shown at 4. The boom 3 has the usual dipper arm 5 and dipper 6, the dipper arm being capable of being moved into such a position as to cause the same to extend at a slight angle to the boom 3. The body portion or hull proper 1 is built very narrow to enable the same to pass through the locks of a canal or through other narrow portions of the channel. Consequently, the width of the hull is not sufficient to impart to the same the necessary buoyancy and stability to enable the dredge to be operated. To overcome this deficiency floats 7 are secured to the opposite sides of the body portion 1 and are adapted to be detached therefrom when it is necessary to pass the dredge through the locks. These floats may be of any suitable length up to the length of the dredge, but we have shown the same, in the present instance, as of substantially half the length of the dredge.

It is desirable that the floats 7 should be detached from and attached to the hull 1 as quickly as possible, thus enabling the dredge to be dismantled, to pass through the lock, to be set up and to resume operations in a minimum amount of time. To accomplish this result we have mounted upon the hull movable braces which are so arranged that they may be moved over the floats, and, when in this position, they will retain the floats in their normal positions relatively to the hull and may be moved away from the floats to enable the same to be removed from the hull. Each of these braces is here shown as substantially triangular in form, has its lower horizontal member 8 pivotally connected at its inner end to the hull 1 and is

of a length substantially equal to the width of the float. The pivotal connection between the horizontal member 8 of the brace and the hull is preferably made by providing the inner end of the brace member with plates or strips 9 secured to the upper and lower surfaces thereof and adapted to extend on the opposite sides of a bearing block 10 rigidly secured to a fixed part of the hull. A pin 11 extends through the plates 9 and the bearing block 10 and forms the pivotal connection between these parts. The inclined member 12 of the triangular brace is rigidly secured to the horizontal member 8 near the outer end thereof, by means of angle plates 13, and extend some distance beyond the upper end of the vertical member 14 of the triangular brace, to which member it is connected by brace plates 15. That portion of the inclined member 12 lying beyond the vertical member 14 has a bearing block 16 which is arranged between bearing lugs 16^a, secured to the frame 17 of the deck house, mounted on the body portion or hull 1, and is pivotally connected to the bearing lugs and to the frame 17 by means of a pin 18 which extends through said bearing lugs and the bearing block. Thus it will be observed that each triangular brace is pivotally mounted on the hull 1 near the side thereof and that when this brace is swung into a position at substantially right angles to the length of the hull 1, it will extend above the float 7 arranged on the corresponding side of the hull and will prevent the upward movement of the float relatively to the hull; and that this brace can be quickly and easily moved about its pivotal center to fold the same onto the hull, thereby moving the same into such a position that it will not interfere with the removal of the float. The number of these folding braces which are employed would depend largely upon the length of the floats and upon the use of other securing means. In the present instance we have shown but two braces on each side of the dredge.

If desirable, additional retaining means may be provided for the float to hold the same against lateral movement relatively to the hull. These additional retaining means are here shown as consisting of flexible members, such as chains 19, which are secured to the lower, outer corner of the hull near the ends of the float, as shown at 20, and extend upward and outward to the upper and outer corner of the float, where they are secured by means of a bolt 21 which extends through a plate or clip 22 and is secured thereto by means of a nut 23. This connection is a simple one and can be quickly and easily released when it is desired to remove the float.

It will be apparent from the foregoing description that by the use of the floats the

hull of the dredge is given the necessary stability, and, by detaching the floats, the width of the hull is so reduced that it can be readily passed through locks or other narrow channels. Further, by the use of applicants' connecting devices the floats can be readily detached from the hull and attached thereto after the narrow hull has been conveyed through the lock. The operation of so disconnecting and connecting the floats is very simple and consumes but a very small amount of time, and thereby interferes to a minimum extent with the work in hand.

We wish it to be understood that we do not desire to be limited to the details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a dredge the combination, with a hull and a float, of a brace loosely connected to said hull and normally movable relatively thereto, said brace being disconnected from said float and arranged to extend over the latter to retain the same in position and adapted to be moved away from the float to permit the float to be removed.

2. In a dredge, the combination, with a hull, and a float, of a brace pivotally mounted on said hull and adapted to be swung out over the float to retain the same in position adjacent to said hull and to be folded against said hull to permit said float to be moved away from said hull.

3. In a dredge, the combination, with a hull, and a float, of a triangular frame pivotally connected to said hull and having a horizontal portion adapted to extend across said float, said brace being adapted to fold against said hull to permit the removal of said float.

4. In a dredge, the combination, with a hull, and a float, of a triangular brace comprising a horizontal member arranged to extend above said float and pivotally connected at its inner end to said hull, an inclined member rigidly connected to said horizontal member and pivotally connected at its upper end to a part carried by said hull.

5. In a dredge, the combination, with a hull, and a float, of a foldable brace arranged to extend above the float to hold the same against vertical movement relatively to the hull, and a flexible member secured at one end to said dredge and secured at its other end to said float to hold the same against lateral movement relatively to the hull.

6. In a dredge, the combination, with a hull, and a float arranged at one side of said hull, of a pivoted brace mounted on said hull and adapted to extend above said float

5 to hold the same against vertical movement relatively to the hull, and a flexible member connection to the lower corner of said hull, extending upwardly and outwardly and connected to said float near the upper and outer corner thereof, the connection between said flexible member and one of said parts being detachable.

In testimony whereof, we affix our signatures in presence of two witnesses.

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Witnesses:

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