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R. M. WILSON.

MEANS FOR ADVANCING DREDGERS.

APPLICATION FILED MAY 21, 1907.

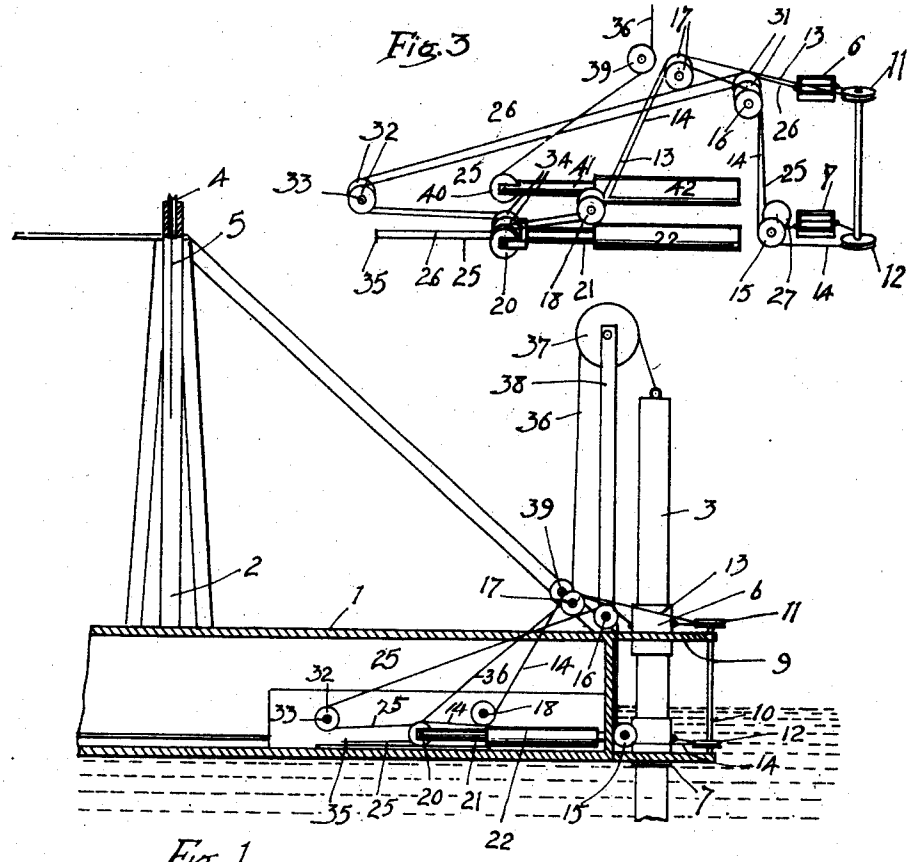


Fig. 1

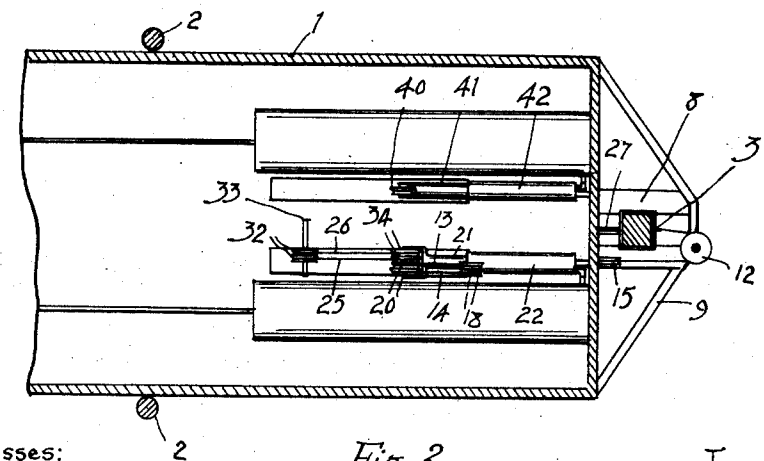


Fig. 2

Witnesses:

Geoffrey Holt

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# UNITED STATES PATENT OFFICE.

ROBERT M. WILSON, OF SAN FRANCISCO, CALIFORNIA.

## MEANS FOR ADVANCING DREDGERS.

No. 879,345. Specification of Letters Patent. Patented Feb. 18, 1908.

Application filed May 21, 1907. Serial No. 374,968.

*To all whom it may concern:*

Be it known that I, ROBERT M. WILSON, a citizen of the United States, residing at San Franciso, in the county of San Francisco and State of California, have invented new and useful Improvements in Means for Advancing Dredgers, of which the following is a specification.

This invention relates to improved means for advancing the hull of a dredger to take up successive positions in making the cut, in the operation of dredging, the object of the invention being to provide means which will enable said hull to be advanced in a straight line, if desired, or to be turned to either side at the will of the operator, and with greater ease and convenience than heretofore.

In the accompanying drawing, Figure 1 is a broken longitudinal section of a dredger equipped with my improvement; Fig. 2 is a broken plan view of the same; Fig. 3 is a detail perspective and diagrammatic view.

Referring to the drawing, 1 indicates the hull of a dredger, which is guided between the side spuds 2, one on each side, and advanced by means of a stern spud 3 at the stern. Said spuds 2 are raised and lowered by any suitable means, including the sheaves 4 and ropes 5, and since such means are those commonly used in the art, they are not herein further specified. The stern spud 3 is slidable vertically in upper and lower sleeves 6, 7, said sleeves being movable longitudinally to and from the stern of the hull in guideways 8 formed in a frame 9 secured to said stern. Mounted in said frame is a vertical shaft 10 upon which are rotatably mounted upper and lower sheaves 11, 12, and around said sheaves pass ropes or cables 13, 14, secured to said sleeves 6, 7, the lower rope also passing around sheave 15, and then up along the stern of the hull over a sheave 16, both ropes 13, 14, then passing over sheaves 17 and under sheaves 18 and around sheaves 20 carried by the end of a plunger 21 in an hydraulic cylinder 22 and secured to a fixed point on said cylinder. Attached to said sleeves 6, 7, at their front sides are ropes 25, 25, the lower one of which passes around a sheave 27 and then up along the stern of the hull, both ropes 25, 26, then passing over sheaves 31, and then around sheaves 32 mounted on a transverse shaft 33 located ahead of the plunger 21, then passing around sheaves 34 carried by said plunger and then attached to fixed points 35. It will be seen that when the plunger is moved outward from the cylinder the sleeves and the stern spud are moved rearward, and, on the contrary, when the plunger is moved inward, they are moved forward. By means of the ropes 25, 26, which are let out as the ropes 13, 14, are drawn in, and conversely, the stern spud is maintained always in an upright position.

To the top of the stern spud is attached a rope or cable 36 which passes over a sheave 37 mounted upon a post 38, said rope then passing under a sheave 39 and thence around a sheave 40 mounted on the end of a plunger 41 in a second hydraulic cylinder 42, said rope being then attached to a fixed point on said cylinder. By this means the stern spud can be raised or lowered.

The operation of the apparatus is therefore as follows: Supposing that the parts are in such a position that a sufficient cut has been made and it is desired to advance the hull, then the side spuds are first raised by the usual means, and, while so raised, the stern spud being still in the ground, the plunger 21 is projected from the cylinder 22 and thus draws on the ropes 13, 14, attached to the rear sides of the sleeves 6, 7, and lets out the ropes 25, 26, attached to their front sides, thereby causing the hull, carrying with it the side spuds, to advance relatively to the stern spud. The side spuds are now again lowered in the advanced position, and the cylinder 42 is now operated to raise the stern spud, and, while it is raised, the cylinder 22 is operated to permit the sleeves around the spud and the spud itself to move forward, which it does in dropping by gravity to its advanced position close to the stern of the dredger. The advantage of this construction is that the dredger can be advanced straight ahead with much greater accuracy than heretofore, since the propulsive force is from the center of the stern, and also with great ease and rapidity.

Should it be desired to advance the hull to either side of its former direction, the bucket and boom of the dredger are swung to the side toward which it is desired to turn, and the bucket lowered to the levee or other solid support to serve as an anchor or fulcrum, and then, the side spuds having been raised, upon drawing in the bucket cable leading from the bucket to the farther side of the hull, the hull will be thereby swung round towards the bucket, which remains stationary.

I claim:—

1. In combination with the hull of a dredger, side spuds therefor, a stern spud, means for raising and lowering said stern spud, an extension from the stern past said stern spud, and means supported on the rear end of said extension for advancing said hull relatively to said stern spud, substantially as described.

2. In combination with the hull of a dredger, side spuds therefor, a stern spud, a guideway extending rearwardly from the stern, a sleeve for the stern spud in which it slides vertically, said sleeves being arranged to move longitudinally in said guideway, means for moving said sleeve in said guideway, and means for raising and lowering said stern spud, substantially as described.

3. In combination with the hull of a dredger, a stern spud, a guideway extending rearwardly from the stern, a sleeve for the stern spud in which it slides vertically, said sleeve being arranged to move longitudinally in said guideway, means for moving said sleeve in said guideway, and means for raising and lowering said stern spud, substantially as described.

4. In combination with the hull of a dredger, a frame extending rearwardly from the center of the stern of the hull and bearing upper and lower guideways, upper and lower sleeves movable in said guideways, a spud sliding vertically in said sleeves, means for raising and lowering said spud, sheaves in the rear of the guide frame, ropes passing around said sheaves and secured to the respective sleeves, and means carried on the hull for pulling said ropes, substantially as described.

5. In combination with the hull of a dredger, a frame extending rearwardly from the stern of the dredger, and having upper and lower guideways, sleeves movable longitudinally on said guideways, a spud movable vertically in said sleeves, means supported by said hull for raising said spud in said sleeves, and means also supported thereby for sliding said sleeves in said guideways, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ROBERT M. WILSON.

Witnesses:
C. L. HOWE,
D. B. RICHARDS.