K. W. LJUNGDELL.

APPARATUS FOR LAUNCHING OF SHIPS.

APPLICATION FILED APR. 10, 1918.

1,299,363. Patented Apr. 1, 1919.

Fig. 1

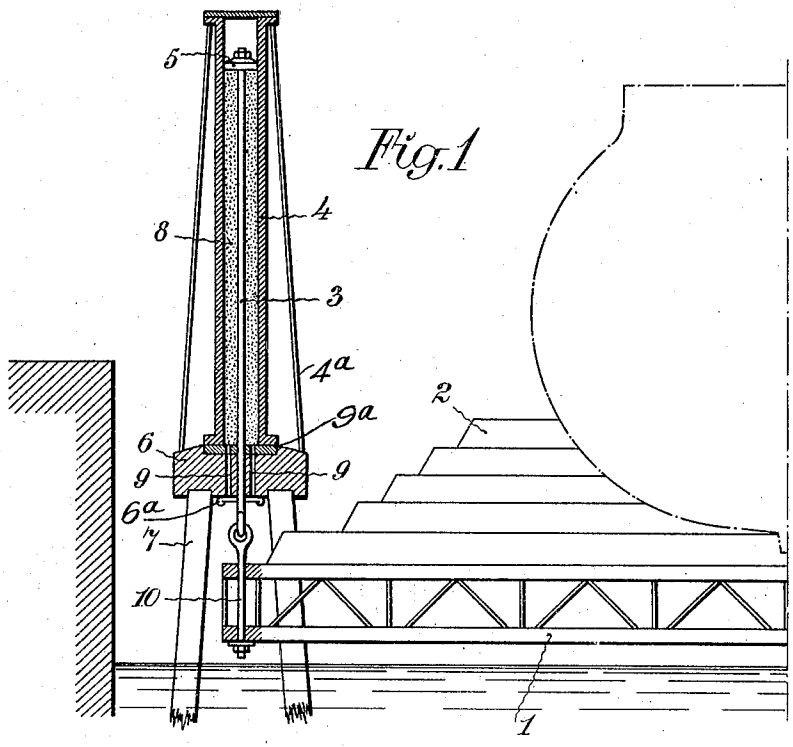


Fig. 2

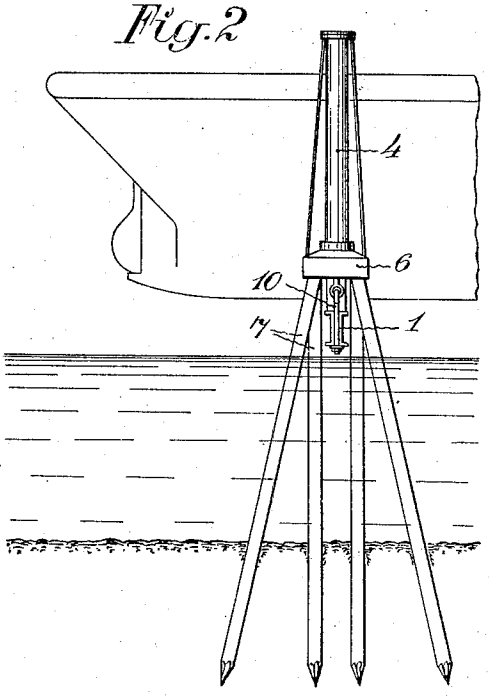
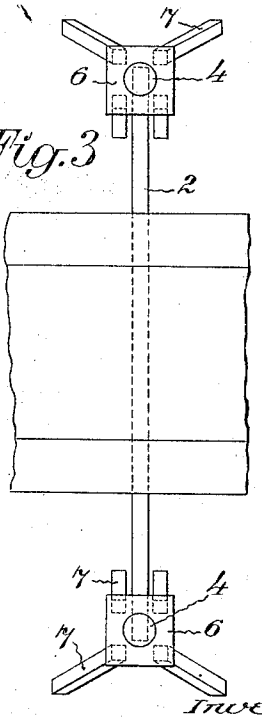


Fig. 3



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APPARATUS FOR LAUNCHING OF SHIPS.

1,299,363. Specification of Letters Patent. Patented Apr. 1, 1919.

Application filed April 10, 1918. Serial No. 227,755.

To all whom it may concern:

Be it known that I, KARL WILHELM LJUNGDELL, a citizen of Sweden, residing at Villa Klarahill, Malmö, Sweden, have invented certain new and useful Improvements in Apparatus for Launching of Ships, of which the following is a full, clear, and exact description.

This invention relates to improvements in an apparatus for launching vessels.

The object of the invention is to provide simple and effective means for launching vessels, and is primarily intended when launching to prevent a vessel tilting, when entering the water, or liability of hanging on the ways.

The invention comprehends improvements in the construction and arrangement of parts to be hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings:—

Figure 1 is a transverse section of the launching apparatus, a vessel being indicated in dotted lines.

Fig. 2 is a side elevation of the apparatus, and a vessel supported thereby.

Fig. 3 is a plan view of the same.

The same numerals refer to like parts in all the figures.

1 indicates a girder, and supported thereon is a bed 2, composed of timbers or the like of various lengths.

Adjacent each end of the girder is a frame, composed of sets of piles 7, driven into the bed of the stream, and at the top of the piles are blocks 6. Two of the piles of each set are disposed in parallel relation to form guides for the ends of the girder.

As the mechanism supported on blocks 6, is the same, but one will be described in detail.

The block 6 is provided with a central opening, and adjacent thereto are vertical openings 9. Seated in the top of the block is a plate 9^a, formed with openings which register with the openings in the block, and mounted on the plate is a vertically disposed cylinder 4, closed at its upper end, and suitably braced, as at 4^a, to the block. Operating in the cylinder is a piston 5, and extending therefrom is a piston rod 3, which projects through the central opening in the block. To the lower end of the piston rod is loosely connected a link 10, fastened to the end of the girder, to prevent binding of the piston and rod when a vessel is launched.

Interposed in the cylinder between the underside of the piston and the plate 9^a, is sand or the like, indicated by the numeral 8. The sand is intended to pass through the vertical openings 9, in the launching operation, but is retained while building the vessel by suitable valve or valves, a valve being conventionally illustrated at 6^a, on the underside of the block.

In operation, the valves 6^a are closed, and sand is introduced in the cylinders which holds the pistons elevated, consequently the girder is held suspended above the surface of the stream. The bed is built upon the girder, to suit the shape of the vessel.

When it is desired to launch the vessel, the valves 6^a are opened, and the sand is permitted to pass through the openings 9, with the result that the weight of the lower structure causes the pistons to gradually lower in the cylinders, as the sand passes off. The movement of the vessel when lowered into the water is determined by regulating the controlling valves, and to avoid any undue strain or twisting of the connections, if perchance one piston should be lowered somewhat faster than the other, the links 10, come into play.

By the construction described it will be seen that in lieu of launching a vessel from ways, a vessel is launched by bodily lowering it, the girder eventually becoming separated from the vessel, after the latter finds its place in the water.

What I claim as new and desire to secure by Letters Patent is:

1. A launching apparatus comprising girders, frames at the ends of the girders, said girders being vertically guided in the frames, means containing sand on the frames to support the girders, said means also including a universal connection to prevent binding when the girders are lowered, and means for controlling the lowering of the girders.

2. A launching apparatus comprising a girder, a frame adjacent each end of the girder, cylinders on the frames containing granular material, pistons in the cylinders, said pistons supported on the granular material, piston rods extending downwardly from the pistons, universal connections between the lower ends of the piston rods and the girders, and means for controlling the passage of the granular material to regulate the lowering of the girder.

3. A launching apparatus comprising a girder, a frame at adjacent ends of the girder, cylinders mounted on the frame and containing granular material, pistons in the cylinders, said pistons supported on the granluar material, piston rods extending from the pistons and below the cylinders, rods extending from the girders toward the piston rods and in alinement therewith, the ends of the piston rods and the rods extending from the girders having interlinked eyes to form loose connections to prevent binding when the pistons are lowered, and means for controlling the passage of the granular material to regulate the lowering of the girder.

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

KARL WILHELM LJUNGDELL.

Witnesses:
MAURICE C. PIERCE,
CLINTON S. PIERCE.

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