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FLOATING DRY DOCK FOR SMALL BOATS

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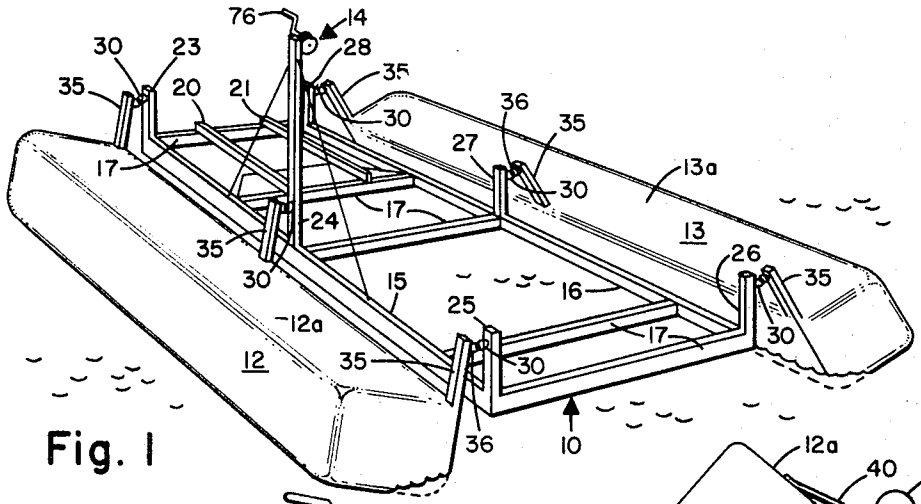



Fig. 1

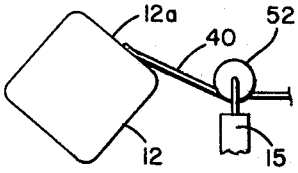



Fig. 4




Fig. 2

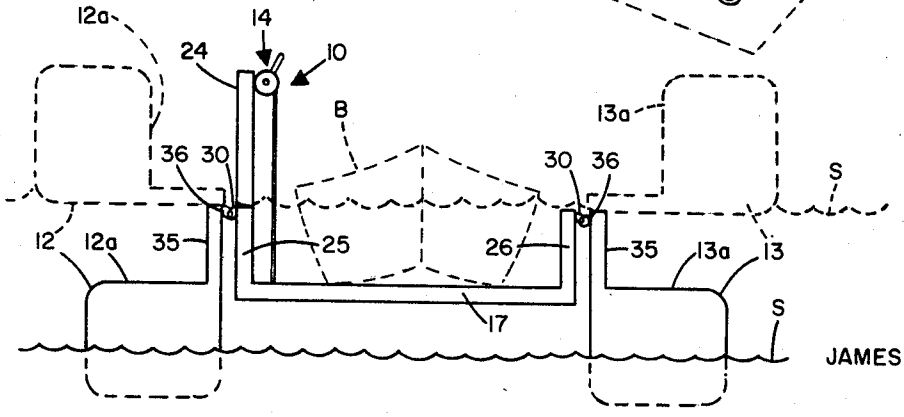



Fig. 3

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# FLOATING DRY DOCK FOR SMALL BOATS

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## ABSTRACT OF THE DISCLOSURE

A floating dry dock for small boats comprises an elongated cradle adapted to support a boat thereon. Two elongated floats or pontoons extend along opposite sides of the cradle and are flexibly connected with the cradle by laterally projecting arms attached thereto and spaced therealong, the arms being pivotally connected to the cradle at the outer ends thereof so that when the pontoons rotate about their longitudinal axes towards one another the arms are swung to lower the cradle into the water and when the pontoons rotate about their axes outwardly from one another the arms swing in an upright position to raise the cradle from the water. The pontoons rotate about their axes when they are drawn towards one another and about the pivotal connection between the arms and the cradle by a drum and cable arrangement which also controls spreading of the pontoons from one another which causes lowering the cradle into the water.

The present invention relates to a floating dock particularly suitable for dry storage of small boats.

A principal object of the present invention is the provision of a new and improved floating dock for the storage of small boats above the surface of the water and which comprises two spaced parallel extending pontoon-like floats supporting a boat cradle therebetween by flexible connections so that rotation of the pontoons about their longitudinal axes in directions away from one another the cradle is raised and when the pontoons rotate about their axes towards one another the cradle is lowered into the water, and having means for rotating the pontoons as desired so that a boat may be floated over the cradle and the cradle then elevated above the surface of the water by rotation of the pontoons. By rotating the pontoons as described, the surfaces thereof may be positioned for convenient cleaning because all of the wetted surfaces thereof are exposed during rotation of the pontoons in raising and lowering the boat cradle. Furthermore, the pontoon rotating mechanism is normally above the water and is thereby not subjected to marine growth and the like.

Other objects and advantages of the invention will be apparent from the following description of a preferred form thereof, reference being made to the accompanying drawings wherein:

FIG. 1 is a perspective view of a boat dock embodying the invention;

FIG. 2 is a fragmentary schematic view of the cable. arrangement for operating the pontoons of the dock;

FIG. 3 is an end view in elevation of the boat dock; and

FIG. 4 is a fragmentary view of a part of the cable arrangement shown in FIG. 2.

Referring to the drawings, a boat dock **10** is shown which is adapted to support a relatively small boat which is indicated at B. The dock **10** comprises a boat cradle **11** which is supported by elongated buoyant members or pontoons **12, 13** which are pivotally attached to opposite sides of the cradle, the points of attachment being along the inner sides of the pontoons. A crank and drum means **14** is provided by which the pontoons may be rotated



about their pivots to raise and lower the cradle **11** from beneath the surface of the water to a position above the water to thereby permit a boat to be floated over the submerged cradle and then elevated above the water on the cradle for dry storage. The dock is suitably anchored in the water by means, not shown.

The cradle **11** comprises two spaced, parallel side members **15, 16,** which are inter-connected by cross members **17** to provide a rigid rectangular frame suitable for receiving thereover boats of the type to be supported by the dock. Two support bars **20, 21** are provided between the rear most cross members **17** to form a support for the stern of the boat.

Six upright posts **23, 24, 25, 26, 27** and **28** are provided at the ends and intermediate portions of the side members **15, 16,** as shown, and these posts are provided with ring form link members **30** by which the cradle posts are pivotally attached to the pontoons **12, 13.**

The pontoons **12, 13** may be formed of any suitable type of floatation structure such as hollow metal or fibre glass shells or of a floatation material such as a Styrofoam. In the form shown, the pontoons **12, 13** are formed of hollow fibre glass shells and each of which has formed integral therewith upwardly extended legs **35.** The legs **35** are each pivotally attached to the respective posts **23–28** by a ring form link member **36** looped through each of the respective links **30** so that the pontoons are flexible or pivotally attached to opposite sides of the cradle **11** on common axes which run parallel to the side members **15, 16** of the cradle. As may be seen in full lines in FIG. 3, when the pontoons **12, 13** are in the position with the legs **35** thereof upright, the cradle **11** is supported above the surface S of the water, and when the floatation members are rotated about their pivots outwardly from the cradle **11,** the cradle is lowered beneath the surface of the water, as indicated in broken lines. When the pontoons **12, 13** are drawn inwardly towards the sides of the cradle the pontoons rotate about their axes in directions from one another and swing the arms **35** upwardly and raise the cradle above the surface of the water.

Referring to FIG. 2, the pontoons **12, 13** are adapted to be rotated in unison about their pivots by the crank and drum means **14** which is supported on the top of post **24,** which extends to a convenient height. In the form of the invention shown, cables **40, 41, 42** are attached to the rear, central and forward portions of the wall **12*a*** of the pontoon **12** and cables **43, 44** and **45** are similarly attached to the wall **13*a*** of the pontoon **13.** For sake of clarity, the cables are not shown in FIGS. 1 and 3, and reference is made to FIG. 2, for a diagrammatic showing thereof. Cable **40** is reeved about pulleys **46, 47** which are suitably attached to the side frame member **15** to lead the cable to a ring **50** of a double pulley structure **51** to which one end of the cable **40** is secured. Cable **41** is attached at one end to the pontoon **12** and the other end is reeved beneath a pulley **52** pivotally attached to side member **15** and the other end attached to the ring **50.** Cable **42** is reeved about pulleys **53, 54** which are pivotally attached at the forward end and central portions respectively of the side member **15,** and its end is attached to ring **50,** as shown.

One end of each of the cables **43, 45** is attached to opposite ends of the wall **13*a*** of the pontoon **13** respectively and are reeved about pulleys **55, 56** and **57, 58,** respectively, which are suitably attached to the frame side member **16.** Cable **44** is likewise attached to the ring **60** and is guided by a pulley supported on the central portion of frame member **16** but which has not been shown to avoid obscuring other parts of the structure,

and it is to be understood that this pulley is similar in function to pulley **52**.

The pulley structures **51, 61** form the moving pulleys of block and tackles **63, 64** respectively and are adapted to move towards and from the pontoons **12, 13** when the drum **14** is rotated one direction or the other. The pulley **51** is arranged opposite a double pulley structure **64** which is secured to the cradle member **16** and the pulleys **51, 64** comprise the block and tackle **63** which includes a cable **66** having one end attached to the drum **14** and is reeved about a pulley **67**, suitably attached to the cradle member **15**, and arranged about the pulleys **51, 64** in a conventional block and tackle manner, the other end of the cable being secured to a ring **70** on the pulley **61**.

A cable **71** has one end attached to the drum **14** and is reeved about a pulley **72** attached to the frame member **15** and leads to the double pulley **61** comprising the movable pulley of the block and tackle **64**. The cable **71** leads from the pulley **61** to a pulley **74** which is secured to cradle member **15** and which forms the fixed pulley of the block and tackle **64**. The cable **71** is reeved on the pulleys **61, 74** in a conventional block and tackle arrangement and the end of the cable is secured to a ring **75** to the pulley **74**.

The drum **14** is adapted to be rotated by crank **76** and preferably, a releasable ratchet mechanism, not shown, is adapted to prevent rotation of the drum in a direction to unwind the cables **66, 71**. The ratchet mechanism is well known, and therefore it is not shown.

By winding the drum **14** by crank **76**, the boat operator can draw the pontoons **12, 13** inwardly about their pivots **30, 36** from the positions shown in dotted lines in FIG. 3 to the full line positions and thereby cause the arms **35** to elevate the cradle **11** and boat B thereon in the manner shown. To lower the cradle beneath the water, the drum **14** is unwound and the weight of the boat and cradle causes the cradle to be lowered as the pontoons rotate inwardly about their longitudinal axes to the position shown in dotted lines, whereupon the boat may be floated from over the cradle.



It will be seen that with the arrangement of the pontoons shown that the wetted surfaces thereof are available for convenient cleaning thereof to prevent excessive collection of moss, scum, barnacles and the like thereon, and that when the cradle is raised, the pulley and cables for actuating the pontoons are out of the water.

It will be understood that although but one form of the invention has been shown, other forms, modifications, and adaptations thereof may be made, all falling within the scope of the claim which follows.

I claim:

**1.** A floating boat dock comprising, two spaced parallel extending elongated float members, a boat support cradle between said float members and substantially coextensive with said float members, means flexibly connecting one side of said cradle to one of said float members adjacent opposite ends of said cradle for supporting the end portions of said cradle by said one float member and to permit rotation of said float member relative to said cradle, means flexibly connecting the side of said cradle opposite said one side to the other of said float members adjacent opposite ends of said cradle for supporting the end portions of said cradle by said other float member and to permit rotation of said one float member relative to said cradle, said float members, when buoyed in a body of water and disposed in a given angular positions about their pivots being adapted to support said cradle and a boat thereon above the surface of the water, said cradle adapted to be lowered between said floats and beneath the surface of the water when said floats are rotated to a different angular position than said given positions, and means for rotating said float members in opposite directions about their axes to raise and lower said cradle above and below the surface of water on which said boat dock floats.

**References Cited**

UNITED STATES PATENTS

3,119,127 1/1964 Taggert ..... 9—1

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