Dec. 26, 1939. G. L. HORTON 2,185,083

BOAT LIFTING RACK

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Fig. 1.

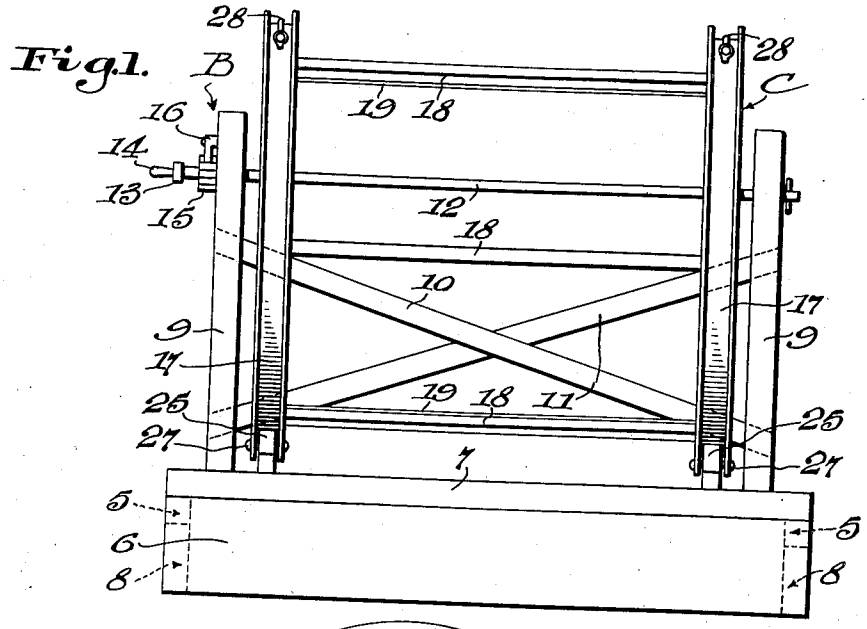
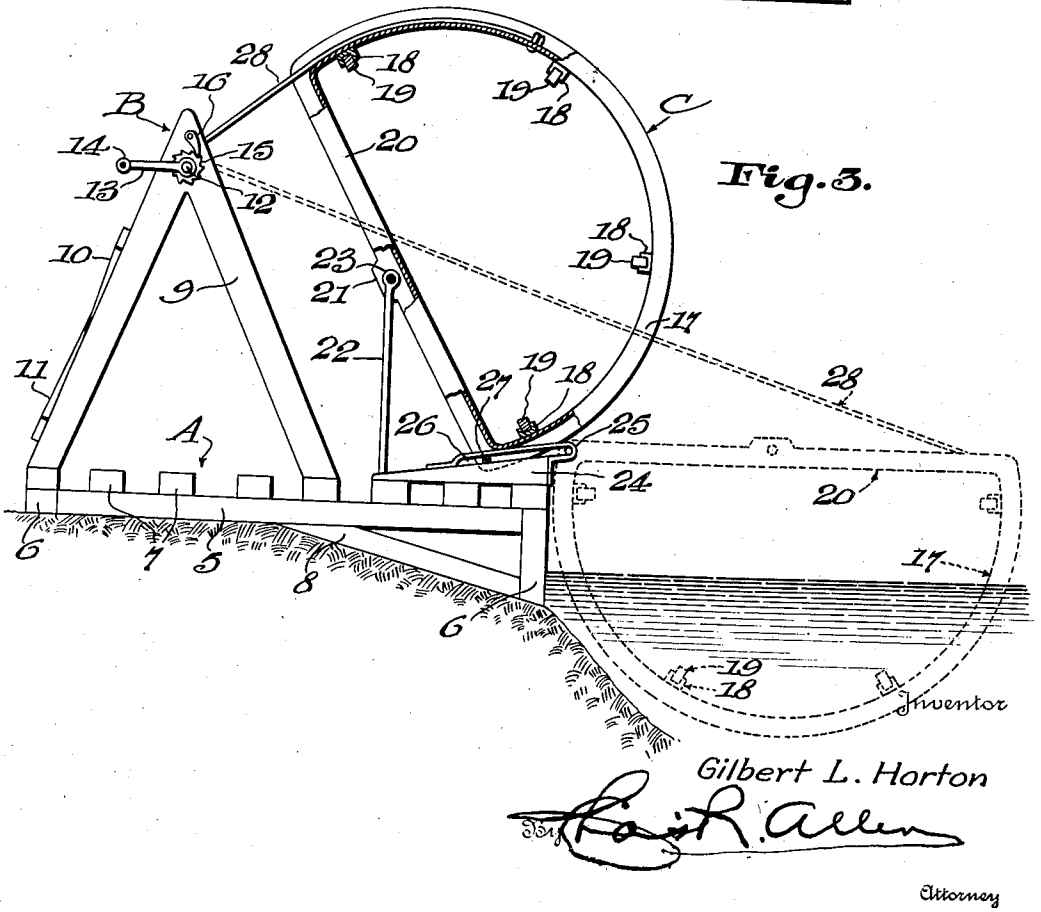


Fig. 3.



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Fig. 2.

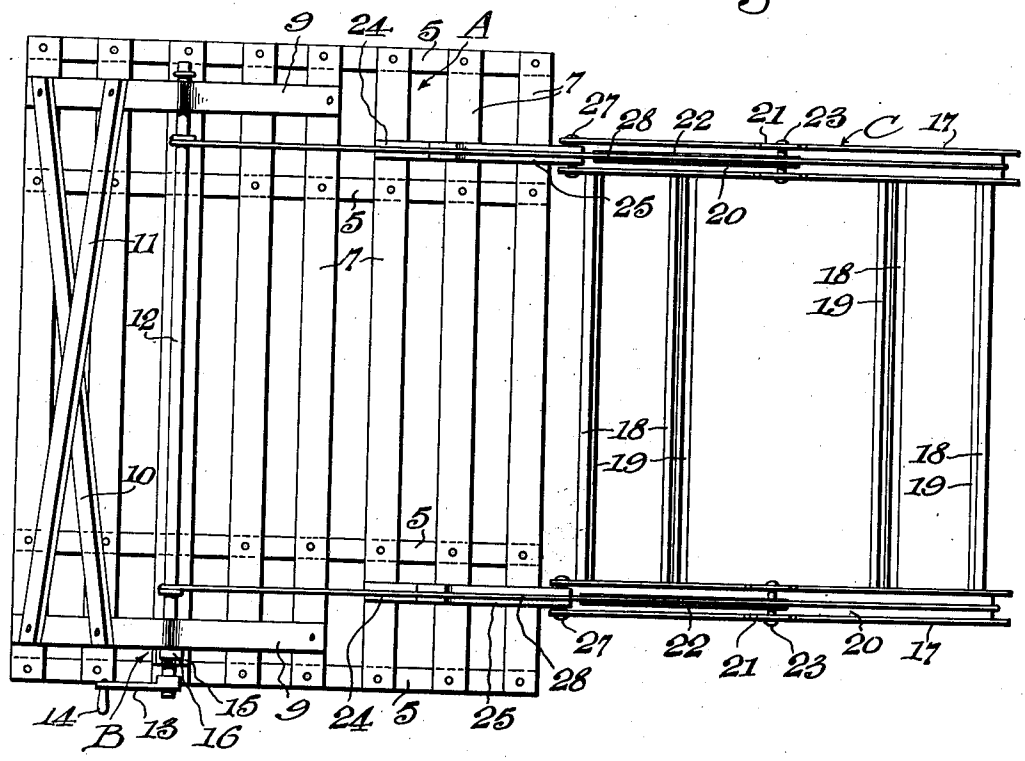
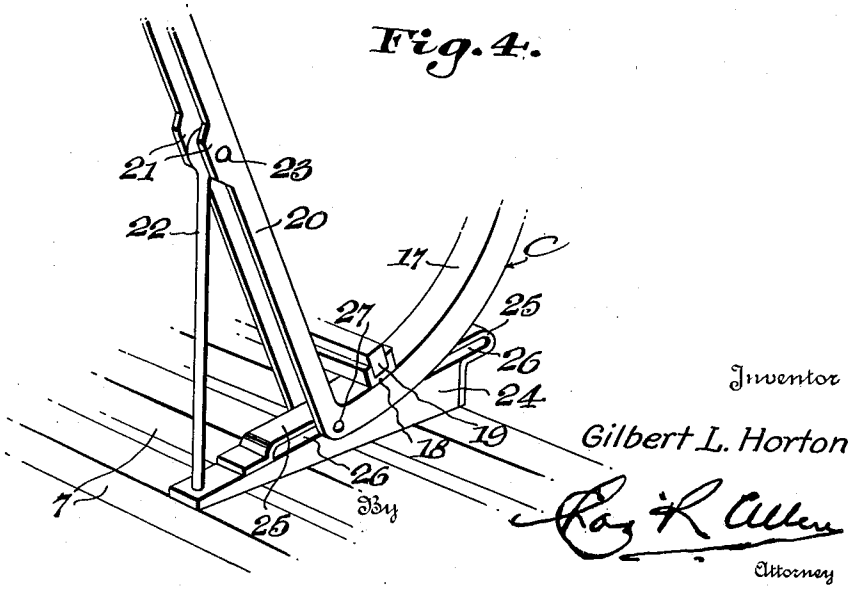


Fig. 4.



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BOAT LIFTING RACK

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Application November 10, 1938, Serial No. 239,866

7 Claims. (Cl. 9—22)

This invention relates to new and useful improvements in boat cradles or racks generally, although more particularly to those adapted for removing small boats from the water and maintaining them in a desired position at the adjacent shore.

In the use of small boats such as rowboats, canoes, and the like, it is desirable at times to remove the boats from the water for dumping water from them, for washing down the bottoms of them, or for repair work.

Ordinarily such boats are removed from the water only with considerable difficulty and without mechanical aid. Such removals often are extremely difficult due to the slope of the bottom and shore, or to roughness of the water at the time.

The invention seeks to avoid the difficulties above enumerated by providing a boat dumping cradle in which the boats may be placed while in the water, and then be lifted from the water by mechanical means.

The principal object of the invention is to provide a dumping cradle structure for small boats including an open framework or cradle normally positioned in the water and adapted to receive and support a small boat therein, and mechanical means for lifting the cradle and boat from the water to a position over the shore.

Another object of the invention is to provide a device of the above character which is easily transportable from one place to another.

Another object of the invention is to provide a device of the above character which is ruggedly constructed, simple in design, and economical to manufacture.

With these and other objects in view which will more fully appear, the nature of the invention will be more clearly understood by following the description, the appended claims, and the several views illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a front elevation of a boat rack constructed in accordance with the invention.

Figure 2 is a top plan view thereof.

Figure 3 is a left end elevation thereof, partly in section.

Figure 4 is a fragmentary detail showing of one of the stops.

In the particular illustration herein made, the invention is embodied in a boat dumping cradle structure including a mounting frame generally designated A, a manually actuated winch B, and a boat receiving cradle C.

The mounting frame A comprises a plurality of spaced longitudinal sill members 5 connected at their ends by front and rear transverse sill members 6. A plurality of transversely disposed spaced parallel beams 7 are secured to the upper faces of the sills and extend the full width thereof. An angular sill piece 8 extends downwardly and forwardly from substantially the mid-point of each end sill 5 into engagement with the forward transverse sill 6.

The winch B includes a pair of spaced parallel A-frames 9 which are secured to the upper faces of the beams 7 adjacent the rear portions of the frame A and are maintained in rigid position by diagonal braces 10, 11 secured across the rear faces thereof. A shaft 12 is rotatably supported in the A-frames adjacent the apices thereof and has one end projecting beyond one of said frames. The shaft serves as a winch rotor, and a crank arm 13 having a handle 14 is secured to the projecting end of said shaft so that the shaft can be manually rotated. A ratchet and pawl equipment 15, 16 may be employed to hold the shaft 12 in a position of rest.

The boat-receiving cradle C comprises a pair of spaced parallel arcuate channel members 17 which are maintained in spaced relation by transverse reinforcing channels 18 rigidly secured to the inner faces thereof. The transverse channels 18 are disposed with their upstanding flanges extending inwardly and are provided with wooden filler blocks 19 projecting beyond the flange edges to thereby prevent marring of a boat resting in the cradle. The ends of each arcuate channel 17 are chordally joined by a channel beam portion 20. It is to be noted that the limit of arc of the members 17 is defined by the major segment of a circle. It is also to be noted that the members 17 are U-shaped in cross section and are disposed with the upstanding webs projecting outwardly. Each of the chord beam portions 20 is provided with a pair of spaced lugs 21 disposed at substantially the mid-point of the outer face thereof. A headed stop member 22 is pivotally mounted at one end as at 23 between each pair of lugs.

The cradle C is pivotally mounted upon the mounting frame B through the medium of spaced angular end blocks 24 provided with fulcrum brackets 25 preferably formed from strap metal shaped to provide longitudinal fulcrum slots 26. The width of each block and associated bracket is slightly less than the internal width of the channels 17. The cradle is connected to the brackets 25 by pivot pins 27 located near or adjacent the ends of the chord members 20. By reason of the provision of the longitudinal slots 26 a measure of adjustment of the cradle is permitted whenever desired.

A pair of ropes or cables 28 are provided and each has one end secured in the manner illustrated to one channel flange 17, and its other end secured adjacent one end of the shaft 12 of the winch B. Thus it will be observed that by rotating the winch shaft by the crank 13, 14, the lines 28 will be either wound upon or unwound

from the shaft and a consequent rotation of the cradle about the pivots 27 will take place.

In use, the boat dumping cradle structure is positioned upon the shore of a body of water with the cradle end of the mounting frame extending waterward in the manner illustrated in Figure 3 of the drawings. The sills 8, due to their angular relation to the plane of the platform, will contact with the shore, or bottom, and maintain the plane of the mounting stand as a whole substantially horizontal. The normal position of the cradle C is with the chord members 20 substantially horizontal, so that the cradle as a whole is extending out and into the adjacent water. See the dotted lines in Figure 3. A small boat, such as a rowboat, is then floated into the cradle, and the crank 13, 14 is rotated to effect a pivoting of the cradle and the consequent lifting of the boat from the water.

It will be noted that the stops 22 are so proportioned and mounted that as the cradle is being rotated to, and past the upright position, said stops gravitate to the vertical position, and, as the cradle passes a dead center position above the pivot pins 27, and continues movement toward the winch, the stops will contact at their lower ends and act as props to thereby limit the movement of the cradle.

Thus it will be seen that herein is disclosed a dumping cradle for small boats which is practical, simple in design, rugged in construction, and economical to manufacture.

It is of course to be understood that the details of structure and arrangement of parts may be variously changed and modified without departing from the spirit and scope of my invention.

I claim:

1. A boat dumping cradle structure for small boats including a mounting frame, a winch mounted on said frame, a boat-receiving cradle arcuate in vertical cross section and having one end of the arc directly and pivotally connected to said frame, said cradle being normally maintained in a position outboard of said frame, and means connecting the cradle and winch whereby the cradle can be swung from said normal position to a position overlying said mounting frame.

2. A boat dumping cradle structure for small boats including a mounting frame; a winch mounted on said frame; a boat-receiving cradle normally maintained in a position outboard of said frame, said cradle including a pair of spaced parallel arcuate end members each directly and pivotally connected to an end to said mounting frame, transverse spacing beams secured along the inner periphery of said end members, and chordal beams joining the ends of each arcuate member; and means connecting the cradle and winch whereby the cradle can be swung from said normal position to a position overlying said mounting frame.

3. A boat dumping cradle structure for small boats including a mounting frame; a winch structure mounted on said frame; said structure including spaced supports secured to said mounting frame, a shaft journaled in said supports and having one end projecting outwardly from one of said frames, and a crank secured to said projecting shaft end; a boat-receiving cradle arcuate in vertical cross section and having one end of the arc directly and pivotally connected to one end of said frame and normally maintained in a position outboard of said frame; said shaft being disposed at an elevation above the mounting frame generally approximating the width of the cradle, and means connecting the cradle and winch whereby the cradle can be swung from said normal position to a position overlying said mounting frame.

4. A boat dumping cradle structure for small boats including a mounting frame, said frame comprising a plurality of spaced parallel longitudinal sill pieces, transverse sill pieces secured across the ends of said longitudinal sills, a plurality of spaced parallel transverse floor beams secured to the upper faces of said sills and extending across the combined width thereof, wedge-shaped fulcrum-carrying members secured to the forward corners of said frame, and spaced downwardly and forwardly extending sub-sills disposed beneath said longitudinal sills; a winch mounted on said frame; a boat-receiving cradle pivotally secured to said fulcrum-carrying members and normally disposed outboard of the frame; and means connecting said winch and cradle whereby the cradle can be swung to a position overlying said frame.

5. A boat dumping cradle structure for small boats including a mounting frame and a boat-receiving cradle pivotally mounted on one end thereof, said cradle including a pair of spaced parallel arcuate end members, transverse spacing beams secured along the inner periphery of said end members, and chordal beams joining the ends of each arcuate member; means mounted on said frame and connected to said cradle whereby the cradle can be swung from the outboard position to a position overlying the mounting frame; and stops pivotally secured to said chordal beams and adapted to gravitate to the vertical position whereby movement of the cradle past dead center position will be limited.

6. A boat dumping cradle structure for small boats including a mounting frame, a winch mounted on said frame, a boat-receiving cradle having one end pivotally connected to one end of said frame and normally maintained in a position outboard of said frame, stop members pivotally secured to said cradle and adapted to gravitate to the vertical position whereby the lower ends thereof will engage said mounting frame to limit the movement of the cradle, and means connecting the cradle and winch whereby the cradle can be swung from said normal position to a position overlying said mounting frame.

7. A boat dumping cradle structure for small boats including a mounting frame, said frame comprising a plurality of spaced parallel longitudinal sill pieces, transverse sill pieces secured across the ends of said longitudinal sills, a plurality of spaced parallel transverse floor beams secured to the upper faces of said sills and extending across the combined width thereof, wedge-shaped fulcrum-carrying members secured to the forward corners of said frame, strap metal fulcrums secured thereto, said fulcrums being shaped to define longitudinal slots adjacent the upper edges of said fulcrum-carrying members, and spaced downwardly and forwardly extending sub-sills disposed beneath said longitudinal sills, a winch mounted on said frame, a boat-receiving cradle pivotally secured to said fulcrum straps and normally disposed outboard of the frame, and means connecting said winch and cradle whereby the cradle can be swung to a position overlying said frame.

GILBERT L. HORTON.

CERTIFICATE OF CORRECTION.

Patent No. 2,185,083. December 26, 1939.

GILBERT L. HORTON.

It is hereby certified that error appears in the above numbered patent requiring correction as follows: In the grant, line 6 thereof, title of invention, for "BOAT LIFTING RACKS" read --BOAT DUMPING CRADLES--; and in the heading to the drawings and specification, for "BOAT LIFTING RACK" read --BOAT DUMPING CRADLE--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 27th day of August, A. D. 1940.

(Seal)

[redacted]
Acting Commissioner