Sept. 13, 1966 M. A. ZORETIC 3,271,798

DEVICE FOR LAUNCHING, LANDING AND PORTAGING A BOAT

Filed Aug. 6, 1964 2 Sheets-Sheet 1

Fig. 1.

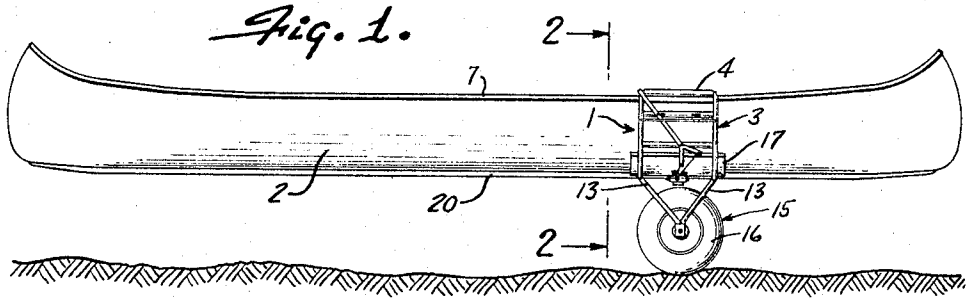
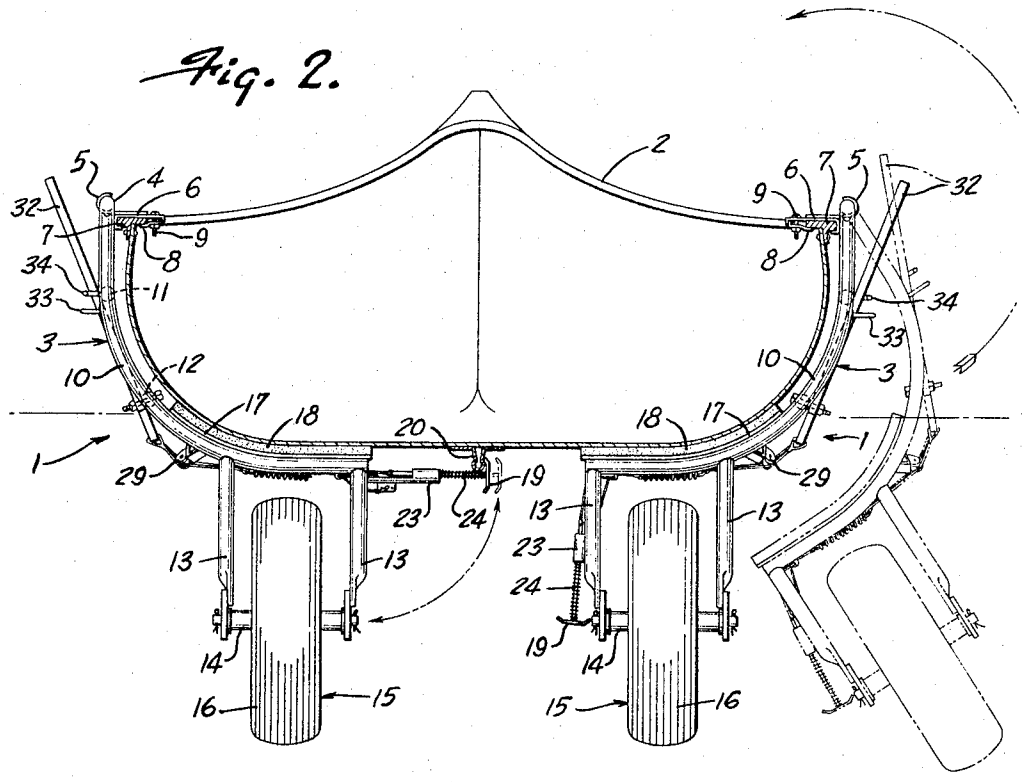



Fig. 2.




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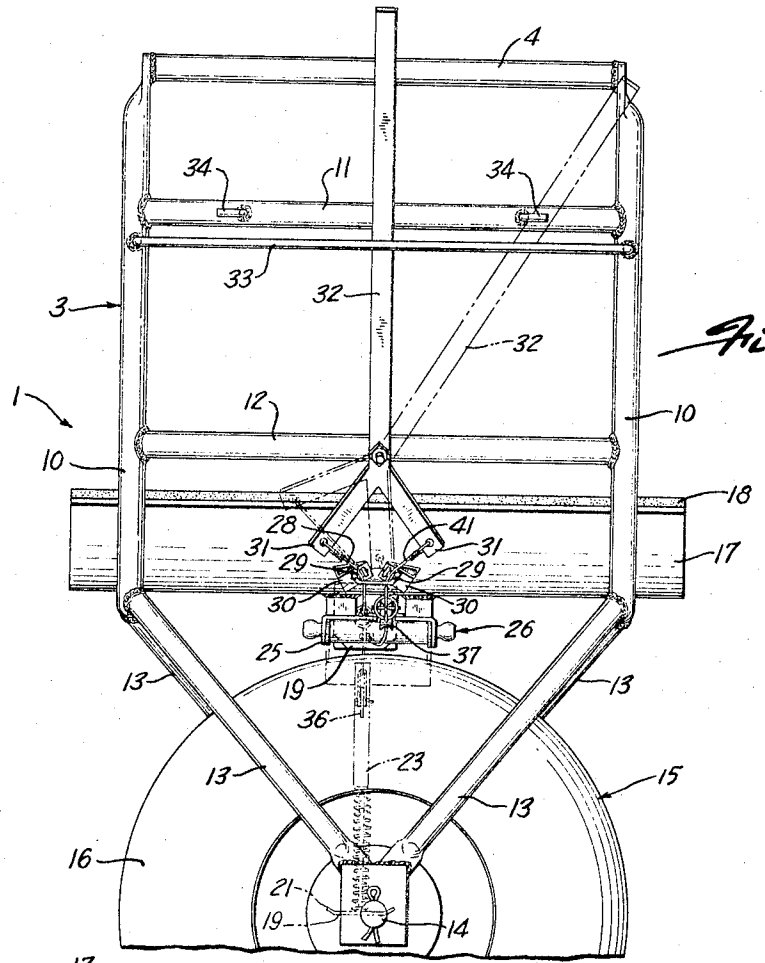



Fig. 3.

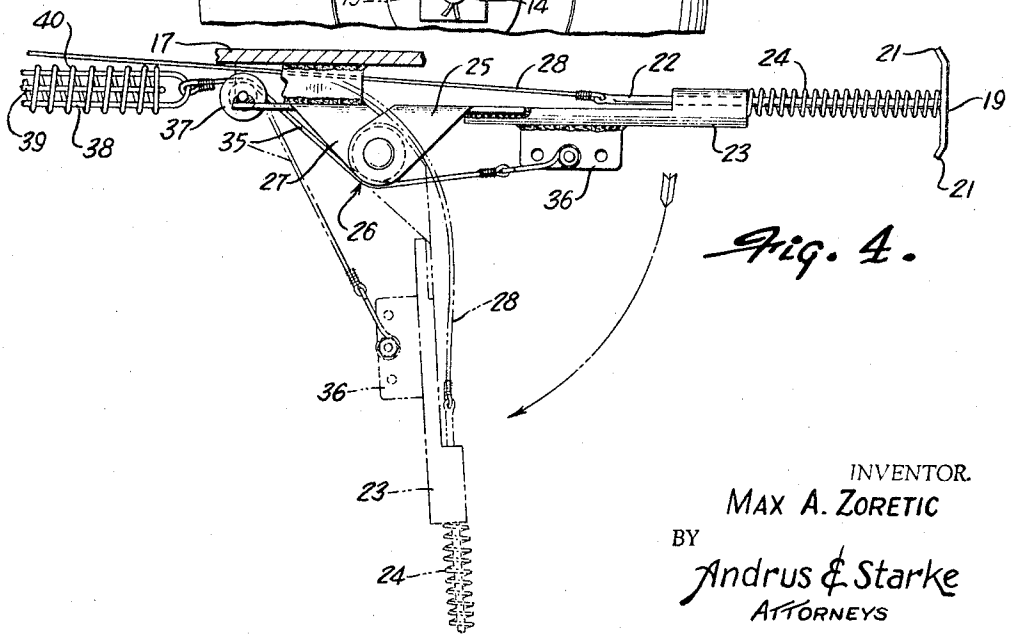



Fig. 4.

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# DEVICE FOR LAUNCHING, LANDING AND PORTAGING A BOAT

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8 Claims. (Cl. 9—1)

This invention relates to a device for launching, landing and portaging a boat and more particularly to a retractable wheel assembly adapted to be used with a small boat, such as a canoe.

In the past, various types of boat portaging devices have been used to transport a boat to and from various lakes in roadless areas. In one conventional type of portaging device, the boat, after landing, is lifted up onto a carriage which is supported by wheels. The boat is then strapped onto the carriage and transported. With a device of this type, it is required that the boat be beached, unloaded, lifted onto the carriage and then the equipment loaded back into the boat for transporting.

In another common type of portaging device, the portaging wheels are mounted on arms which are pivotally connected to a pipe which extends across the boat and the arms extend vertically downward from the gunwale of the boat. With a device of this type, the track between the wheels is generally too wide to follow the path through roadless areas, and the device also tends to damage the gunwale of the boat where it is fastened.

The present invention relates to an improved retractable wheel assembly for launching, landing and transporting a small boat, such as a canoe. The device is easily converted from the retracted to the transporting position, and in the transporting position, the wheels are positively locked beneath the hull of the boat.

According to the invention, the portaging assembly includes a pair of wheel units, each of which comprises a frame which is pivoted to the gunwale and curves downwardly to a position beneath the hull. The lower end of each frame carries a wheel and the wheels are locked in position by a keel clamp assembly, which includes a keel hook which is adapted to engage the central keel strip on the bottom of the hull.

The keel hook is actuated by a lever arm which is mounted for pivoting movement on the upper portion of the frame along the gunwale. The lever arm has three operating positions and includes a release position in which the keel hook hangs vertically down along the wheels. By moving the lever arm to a central position, the keel hook is pivoted upwardly to a horizontal position with the hook being located on the opposite side of the keel strip from the wheel frame. In the third or locked position, the keel hook is moved into engagement with the keel strip to securely lock the wheel unit to the hull of the canoe or boat.

When the boat or canoe is in the water, the wheel units are usually detached from the gunwale and can be placed in the bottom of the boat. When the boat is to be landed, the wheel units are engaged with the gunwale clamp and the frames are pushed downwardly so that the wheels are located beneath the hull of the boat. The lever arms are then actuated to pivot the keel hooks upwardly and bring the hooks into engagement with the keel strip to securely lock the wheel units to the boat.

When launching the boat, the boat is merely pushed out into the water until the boat is floating and the wheels no longer touch the beach. The lever arms can then be actuated to release the keel hooks and the entire wheel units can then be pivoted upwardly and removed from the gunwale clamps.

The present invention provides a simple and inexpensive device to be used in launching, landing and transporting a boat, such as a canoe. The wheel units are readily moved to the transporting position by merely pivoting the wheel frames outwardly and downwardly, and the wheel units are locked in proper alignment beneath the hull of the boat where they can support the weight of the boat and the gear contained within the boat.



As the wheels are located substantialy beneath the hull of the boat, when in the transporting position, the spacing or track between the wheels is narrow so that the boat or canoe can readily be moved down narrow trails in roadless areas.

The drawings illustrate the best mode presently contemplated of carrying out the invention.

In the drawings:

FIG. 1 is a side elevation of a canoe incorporating the retractable wheel units with the wheel units in the transporting position;

FIG. 2 is a transverse section taken along line 2—2 of FIG. 1;

FIG. 3 is an enlarged side elevation of the wheel unit with the keel hook in the lock position and the phantom lines indicating the unlocked position of the keel hook; and

FIG. 4 is an enlarged fragmentary transverse section showing the keel hook in the locked position and the phantom lines indicating the unlocked position of the keel hook.

The drawings illustrate a portaging device which includes a pair of retractable wheel units **1** attached to a canoe **2**. The wheel units **1** are adapted to be moved from a retracted or storage position within the canoe to a transporting position located beneath the canoe.

Each of the wheel units **1** includes a tubular frame **3** having an upper crossbar **4** which is engaged within a C-shaped hinge member **5** of a gunwale clamp assembly. The hinge member **5** is secured to an upper clamping member **6** having a horizontal flange which is positioned beneath the gunwale **7**, while a series of lower clamping members **8** are located on the inner surface of the gunwale and project beneath the gunwale and are connected to the upper clamping member by a series of bolts **9**. The clamping members **6** and **8** serve to position the hinge member **5** over the gunwale **7**.

The tubular frame **3** also includes a pair of generally curved arms **10** which extend downwardly from the crossbar **4** and curve beneath the hull of the boat. The curved arms **10** of each wheel frame are connected together by a pair of cross braces **11** and **12**. In addition, a pair of diagonal braces **13** are secured to each arm **10** and serve to journal the axle **14** of a wheel **15** which includes a conventional pneumatic tire **16**. As best shown in FIG. 2, the wheel **15** is located beneath the hull of the canoe in a plane substantially midway between a vertical plane passing through the centerline of the canoe, and a vertical plane passing through the gunwale **7** of the canoe.

In addition, the tubular frame **3** also includes a generally curved support plate **17** having an upper cushioned surface **18** of rubber or the like which bears against the hull of the canoe.

The wheel units **1** are locked in the transporting position by a pair of keel clamp assemblies and each assembly includes a keel hook **19** adapted to engage the keel strip **20** which extends longitudinally along the centerline of the hull of the canoe. The keel hook **19** is provided with a series of curved, pointed tips **21** and in the locked position, the hook **19** is located on the opposite side of the keel strip **20** from the wheel **15**. When the keel hook **19** is drawn laterally, the curved tips **21** engage the side of the keel strip **20** to firmly hold the wheel assembly in position.

Each keel hook 19 is secured to the end of a rod 22 which is mounted for sliding movement within a sleeve 23. The keel hook 19 is urged outwardly away from the sleeve 23 by a coil spring 24 which is positioned between the hook 19 and the end of the sleeve 23.

The opposite end of the sleeve 23 is secured to a hinge leaf 25 of hinge 26. The opposite leaf 27 of hinge 26 is secured to the support plate 17.

In the unlocked position, the rod 22 and keel hook 19 will extend vertically downward along the wheel 15, as shown by the right-hand unit in FIG. 2. To pivot the rod 22 upwardly to a horizontal position, as shown by the left-hand wheel unit in FIG. 2, a cable 28 is secured to the end of the rod 22, and the cable passes over one of a pair of pulleys 29 secured to brackets 30 mounted on the support plate 17. The opposite end of cable 28 is secured to one of the forked ends 31 of a lever arm 32. The lever arm is mounted for pivoting movement about the lower cross brace 12, and the upper end of the lever arm extends between cross brace 11 and rod 33.

The lever arm 32 is adapted to be moved between three positions. In the unlocked position, the rod 22 and keel hook 19 will hang vertically alongside the wheel 15. When the lever arm 32 is moved to the central or neutral position, the rod 22 will be pivoted upwardly through cable 28 to a horizontal position. In this position, the keel hook 19 is located on the opposite side of the keel strip 20 from the wheel 15, but is out of engagement with the keel strip.

In the third or locked position, the keel hook 19 is moved laterally against the force of the spring 24 to bring the hook 19 into engagement with the side of the keel strip 20 to thereby securely lock the wheel unit to the keel strip.

The lever arm 32 is held in the unlocked or locked positions by engagement with angle shaped locking pins 34.

When the lever arm is moved to the unlocked position, the rod 22 is pivoted downwardly to a vertical position by a cable 35 which is attached to a bracket 36 mounted on the lower surface of the sleeve 23. The cable 35 passes over a pulley 37 and is secured to a U-shaped spring rod 38. A second U-shaped spring rod 39 is disposed around the spring rod 38 and a coil spring 40 is interposed between the bent ends of the rods 38 and 39. The outer end of the spring rod 39 is connected by cable 41 to the other of the forked ends 31 of the lever arm 32.

When the lever arm 32 is moved to the unlocked position, the cable 41 is drawn laterally outward toward the gunwale, to pivot the hinge leaf 25 and thereby pivot the rod 22 to the vertical position, as shown by the phantom lines in FIG. 4.

When the canoe is in the water, the wheel units 1 are generally removed from the gunwale clamps and when the boat is to be landed, the crossbars 4 of the frames 3 are engaged with the hinge member 5, and the wheel frames 3 are pivoted downwardly in the water until the wheels 15 are located beneath the boat. At this time, the lever arm 32 is in the unlocked position. With the wheels positioned beneath the hull of the canoe, the lever arm 32 is then moved through the central position to the locked position which causes the rod 22 to pivot upwardly to a horizontal position and then to move the keel hook 19 laterally into engagement with the keel strip 20 to firmly secure the wheel unit 1 to the canoe 2. This engagement insures that the wheels are in proper alignment and in position to support the weight of the boat and the gear within the canoe when the canoe is beached. As the canoe approaches the beach, the tires 16 will contact the beach and the canoe can be readily rolled out of the water and transported without having to remove the gear from the canoe.

As the wheels 15 are located substantially beneath the hull of the canoe or boat, the spacing track between the wheels is at a minimum, generally from 15 to 24 inches, depending on the size of the canoe, and this minimum track enables the wheels to follow narrow trails in roadless areas.



When it is desired to launch the canoe, the canoe is rolled down the beach into the water until the canoe floats and the tires 16 are out of contact with the beach. The lever arm 32 can then be moved from the locked position to the unlocked position, which will disengage the hooks 19 from keel strip 20 and drop the hooks to the vertical position. The wheel frames 3 can then be pivoted upwardly and the wheel units 1 can be removed from the gunwale clamping assembly if desired. The present invention provides a simple and inexpensive device for launching, landing and transporting a boat. The wheel units can be readily moved into proper position beneath the hull of the boat and locked in this position while the boat is still floating. The locking mechanism is actuated by the control lever situated alongside the gunwale and it is not necessary to reach under the boat or into the water to lock or unlock the wheel units.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

I claim:

1. In combination with a boat having a keel strip disposed adjacent the longitudinal centerline of the hull, a wheel assembly to be attached to the boat to aid in launching, landing and transporting the boat, said wheel assembly comprising a supporting frame pivotally attached to and extending downwardly from the gunwale of the boat along the hull and the lower end of said supporting frame extending inwardly beneath the hull toward the longitudinal centerline of the hull, wheel means carried by the lower end of the supporting frame and located in a vertical plane between a vertical plane passing through said centerline and the vertical plane passing through said gunwale, and locking means extending laterally from the wheel means toward said centerline and disposed to engage the keel strip on said boat.

2. A wheel assembly to be attached to a boat to aid in launching, landing and transporting the boat, said boat having a longitudinal keel strip on the exterior of the hull, comprising a pair of wheel units with each wheel unit including a frame extending downwardly from the gunwale of the boat along the hull of the boat, a wheel carried by the lower end of each frame, locking means connected to each frame and including a locking member movable between a locked and unlocked position, each locking member when in the locked position extending toward the opposite frame and partially overlapping the other locking member and disposed to engage the keel strip on the boat, and actuating means located adjacent the gunwale of the boat and operably connected to each locking means for moving the respective locking member to the locked position and into engagement with the keel strip to securely lock each wheel unit to the boat.

3. A wheel unit to be attached to a boat to aid in launching, said boat having a keel strip disposed adjacent the longitudinal centerline of the hull of the boat, landing and transporting the boat, comprising a frame extending downwardly from the gunwale of the boat along the hull, a wheel carried by the lower end portion of the frame and located between a vertical plane passing through the gunwale and the longitudinal centerline of the hull, a locking member pivotally connected to the frame and being movable from a vertical unlocked position to a generally horizontal locking position wherein said locking member engages said keel strip, and actuating means having a portion extending adjacent the upper edge of the gunwale and operably connected to said locking member for pivoting the locking member between said unlocked and locked position.

4. The structure of claim 3 in which the locking member includes a hook-like portion adapted to engage the

keel strip on the opposite side of the keel strip from said frame.

5. A wheel unit to be attached to a boat to aid in launching, landing and transporting the boat, said boat having a central keel strip extending longitudinally of the hull of the boat, comprising a frame extending downwardly from the gunwale of the boat along the hull, a wheel carried by the lower end portion of the frame and located between a vertical plane passing through the gunwale and a plane passing through the centerline of the hull, locking means pivotally connected to the frame and including a keel strip engaging element movable from a first unlocked position located substantially below the hull and inwardly of the wheel to a second locking position whereat said locking element is engaged with the keel strip on the opposite side of the keel strip from said frame, an actuating member locked adjacent the gunwale of the boat and pivotally connected to the frame, and connecting means connecting the actuating means and the locking means for moving the element between said first and second positions.

6. The structure of claim 5 in which the actuating means consists of a lever arm pivoted to the frame and movable in a direction parallel to the gunwale.

7. A wheel unit to be attached to a boat having a keel strip to aid in launching, landing and transporting the boat, comprising a frame extending downwardly from the gunwale of the boat along the hull, a wheel



carried by the lower end portion of the frame, a locking member pivotally connected to the frame and being movable from an unlocked generally vertical position to a locking generally horizontal position, first pivotal means for pivoting the locking member from the unlocked to the locking position to bring said locking member into engagement with the keel strip on the boat, and second pivotal means for pivoting the locking member from the locked position to the unlocked position to release engagement of the locking member with said keel strip.

8. The structure of claim 7 and including actuating means connected to both said first and second pivotal means for simultaneously engaging said first pivotal means and releasing said second pivotal means.

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