Aug. 25, 1959 F. B. WHALEN 2,901,138

BOAT TRAILERS

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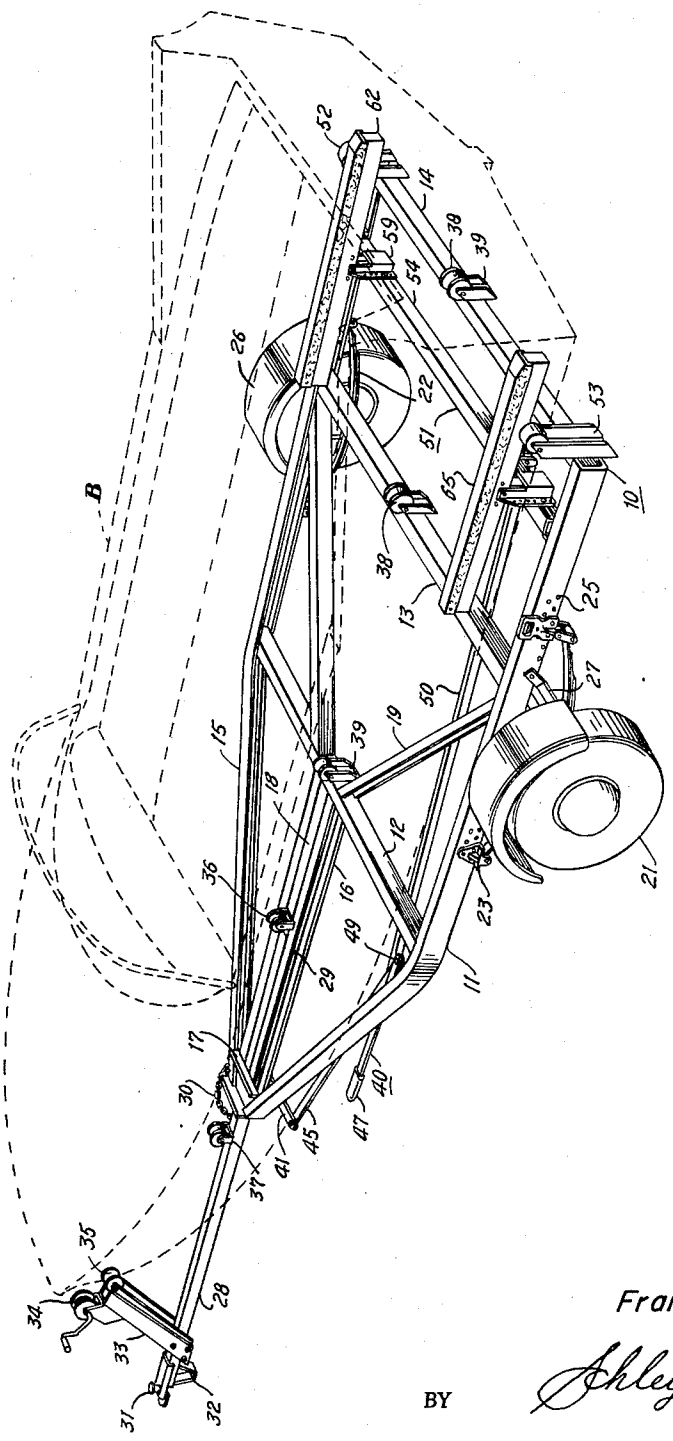


Fig. 1

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BOAT TRAILERS

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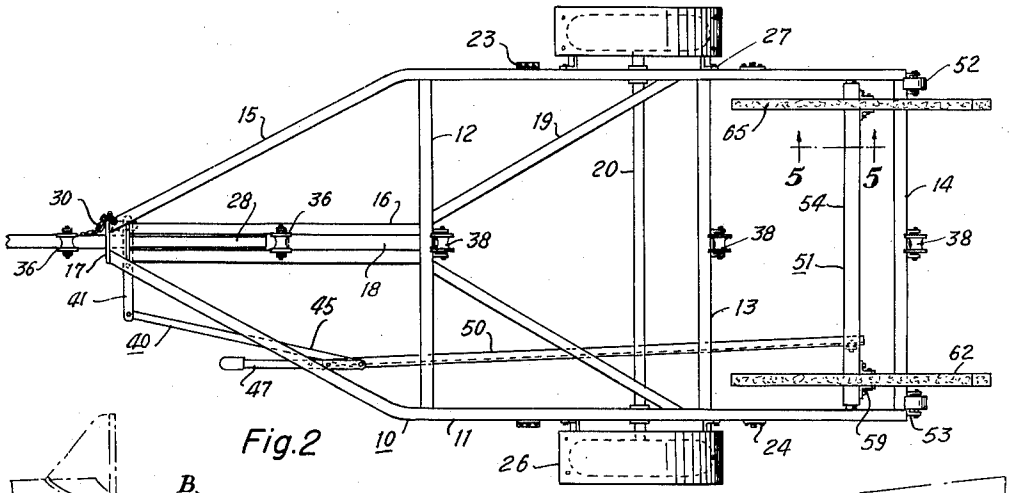


Fig.2

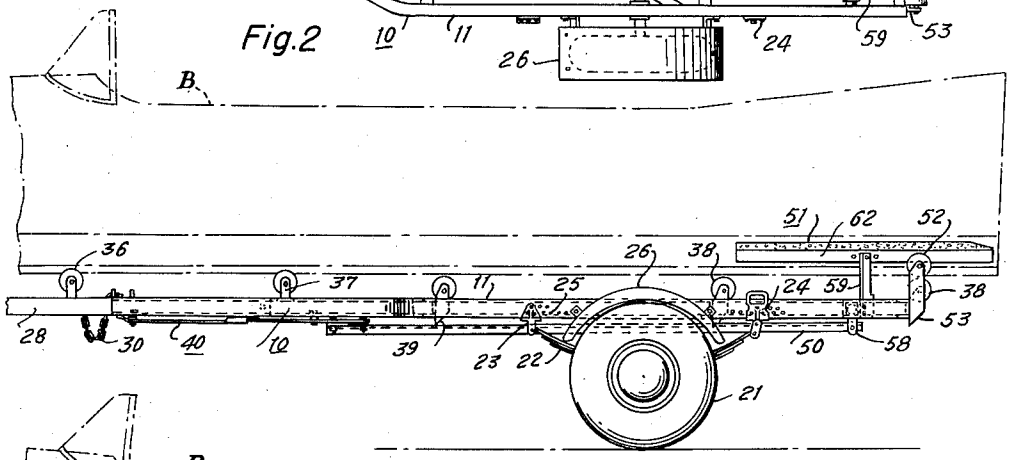


Fig.3

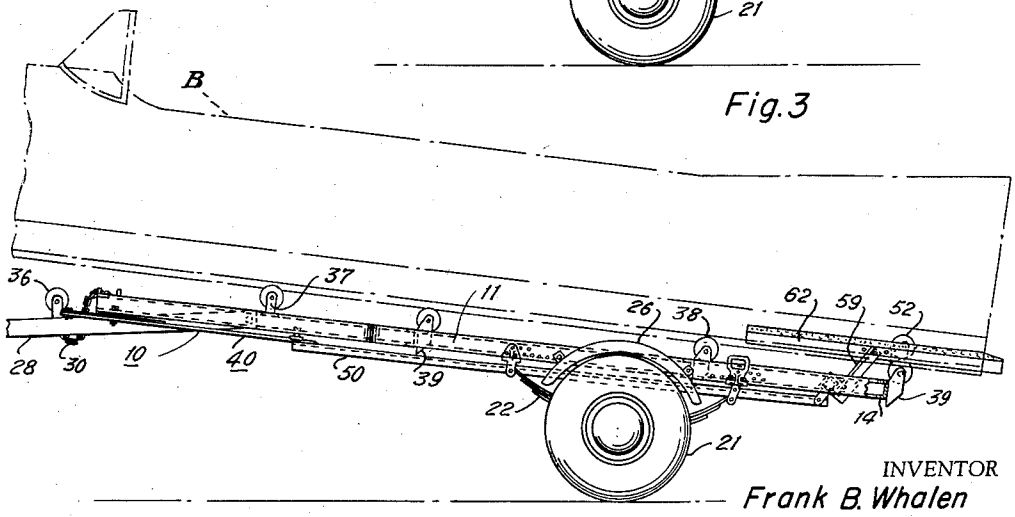


Fig. 4

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BOAT TRAILERS

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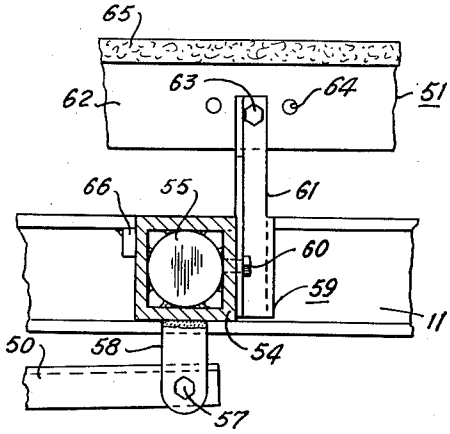


Fig. 5

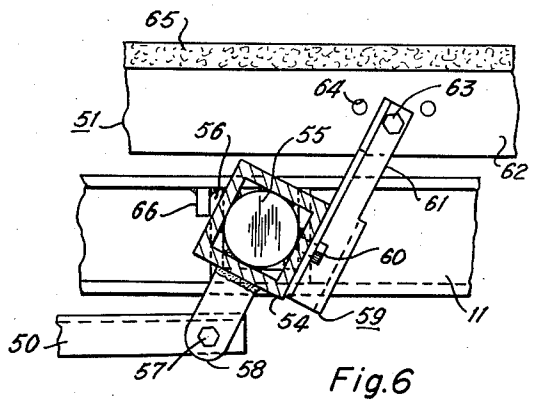


Fig. 6

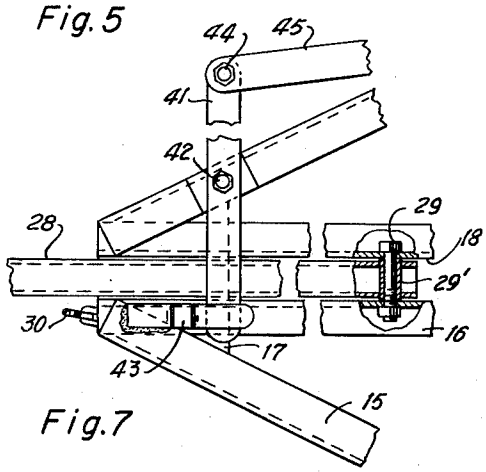


Fig. 7

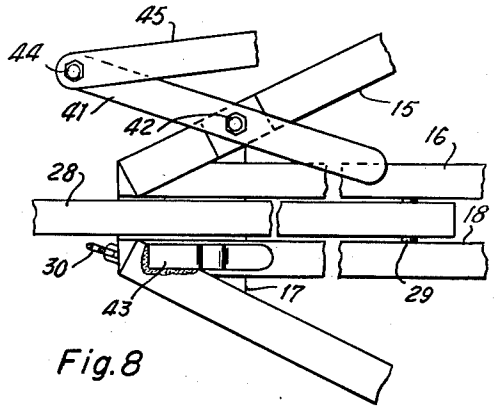


Fig. 8

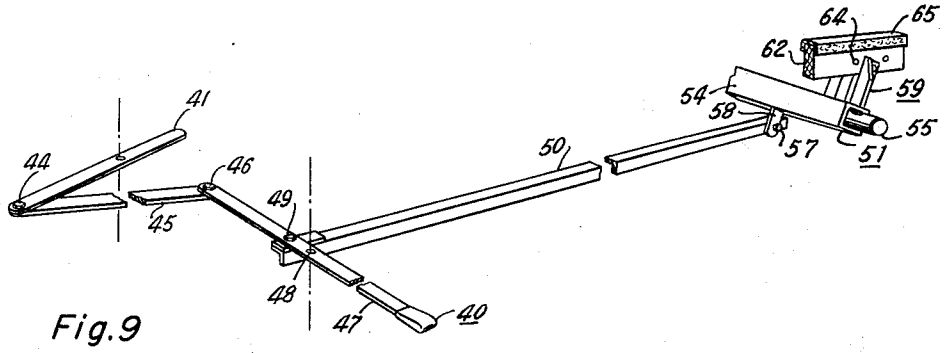


Fig. 9

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2,901,138

BOAT TRAILERS

Frank B. Whalen, Dallas, Tex., assignor to Lone Star Boat Company, Grand Prairie, Tex., a corporation of Texas

Application January 16, 1959, Serial No. 787,161

8 Claims. (Cl. 214—506)

This invention relates to new and useful improvements in boat trailers.

One object of the invention is to provide an improved boat trailer having means for supporting a boat by engagement with its hull, certain of the supporting means being mounted for movement into and out of engagement with the hull to facilitate loading and unloading of the boat as well as transporting thereof.

Another object of the invention is to provide an improved boat trailer having a tiltable frame pivotally attached to a tongue and carrying bolsters and rollers for supporting engagement with the hull of a boat, the bolsters being pivotal relative to the frame and having connection with latch means which fastens the tongue and frame against relative movement and which, when released to permit pivotal movement of said frame, moves said bolsters out of engagement with the boat hull.

A further object of the invention is to provide an improved boat trailer, of the character described, wherein the bolsters are pivotally supported by a rotatable member pivotally connected by a link to the latch means for rocking movement upon actuation of said latch means to swing said bolsters into and out of supporting engagement with the boat hull.

A construction designed to carry out the invention will be hereinafter described, together with other features of the invention.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings, wherein an example of the invention is shown, and wherein:

Fig. 1 is a perspective view of a boat trailer constructed in accordance with the invention and supporting a boat shown in broken lines,

Fig. 2 is a plan view of the trailer,

Fig. 3 is a side elevational view of the trailer and boat,

Fig. 4 is a view, similar to Fig. 3, with the frame of the trailer tilted and its bolsters lowered for loading and unloading the boat,

Fig. 5 is an enlarged, transverse, vertical, sectional view, taken on the line 5—5 of Fig. 2, showing the pivotal mounting of one of the bolsters,

Fig. 6 is a view, similar to Fig. 5, showing the bolster in its lower position,

Fig. 7 is an enlarged, bottom plan view of the latch for fastening the frame and tongue of the trailer against relative movement,

Fig. 8 is a view, similar to Fig. 7, showing the latch released, and

Fig. 9 is a perspective view of the latch, its handle and connection to one of the bolsters.

In the drawings, the numeral **10** designates the frame of a trailer for transporting and launching small boats and includes a pair of elongated, horizontal, main frame members, bars or channels **11** extending longitudinally of the frame and connected in parallel, spaced relationship by horizontal, parallel, cross bars or channel members

12, 13 and **14**. Preferably, the webs of the members **11, 12, 13** and **14** are disposed uprightly with the flanges of said members **11** extending inwardly and the flanges of the other members extending forwardly of the frame. The front end portions of the frame members **11** are bent inwardly upon themselves immediately forward of the front cross bar **12** to provide a pair of converging legs **15**. A pair of parallel, spaced channel members or bars **16** extend longitudinally from the medial portion of the front cross bar and have their front ends disposed between and secured to the front ends of the forwardly-converging legs **15**. For connecting the front ends of the bars **16** in spaced relationship, as well as the legs, an overlying bridge **17** is secured to said front ends and is of channel or U-shape in cross-section. The bars **16** have their flanges directed outwardly and coact with the bridge **17** and each other to provide a longitudinal, medial, tongue-receiving groove or recess **18** therebetween. A pair of diagonal brace members or bars **19** extend from the frame members adjacent the intermediate cross bar **13** to the medial portion of the front cross bar **12**.

An axle **20**, having a pair of ground wheels **21**, is disposed forwardly of and below the intermediate cross bar **13** and is suspended from the frame members **11** by leaf spring assemblies **22** having front and rear hangers **23** and **24** depending from the exteriors of said members. The webs of the frame members have a multiplicity of openings **25** to permit movement of the hangers **23** and **24** forwardly and rearwardly of the frame and adjustment of the position of the axle **20** longitudinally of the frame. If desired, suitable fenders **26** for the wheels **21** may be suspended by brackets **27** from the members **11**. It is noted that the rear cross bar **14** connects the rear ends of the frame members.

As shown most clearly in Figs. 7 and 8, an elongated tongue or longitudinal member **28** has its rear portion disposed in the front portion of the recess **18** and its rear extremity pivotally connected to the webs of the bars **16** by a horizontal, transverse bolt and nut or pivot pin **29**. Preferably, a suitable tubular bearing **29'** is carried by the tongue for receiving the pin **29**. The tongue **28** underlies the bridge **17** and is adapted to engage said bridge when the frame and tongue are in alinement (Fig. 3). A short chain **30** connects one of the legs **15** to the tongue for limiting the rearward tilting or pivotal movement of the frame relative to said tongue. In addition to a tow hitch **31** and foot **32** on its front extremity, the tongue includes an upwardly and rearwardly inclined bow bumper element **33** having a winch **34** and a grooved roller **35** mounted on its upper end portion. Grooved keel rollers **36** overlie and are mounted on the tongue and bars **16** adjacent and forwardly of the bridge **17** and immediately behind the rear extremity of said tongue by suitable brackets **37**. The medial portions of the cross bars **12, 13** and **14** carry similar keel rollers **38** which are adjustably mounted by brackets **39** and which are adapted to coact with the rollers **35** and **36** for supporting a boat, such as shown by the broken lines B in Figs. 1, 3 and 4.

For locking the tongue **28** in alinement with the frame **10** and in parallel relation to the bars **16**, a latch assembly **40** is provided and includes a locking element or flat arm **41** having its medial portion pivotally attached at **42** to one of the frame legs **15** adjacent the bridge **17** in underlying relation to said tongue and bars **16** (Figs. 7 and 8). The locking arm **41** is of such length that one of its end portions may extend inwardly from its pivot point **42** to a point adjacent the other leg. An angular latch element or keeper **43** is welded or otherwise secured to the underside of the latter leg and extends rearwardly therefrom beneath and in spaced relation to the adjacent bar **16** for receiving the inner end of the

locking arm. Manifestly, the frame is prevented from tilting rearwardly and is held in alinement with the tongue when the locking arm is engaged with its keeper 43. As shown most clearly in Fig. 9, the outer end of the arm 41 is pivotally connected at 44 to one end of a link 45 which has its other end pivoted at 46 to the inner end of an elongated, flat bar or handle 47. One or more openings 48 are formed in the medial portion of the handle 47 for receiving a pivot pin or bolt 49 to pivotally connect said handle to the front end of an elongated link 50 which extends longitudinally of the frame and which may be in the form of an angle bar. Since the locking arm is attached to the frame at 42, said arm is pivoted into engagement with the keeper 43 upon inward or forward swinging of the handle and out of engagement with said keeper upon outward or rearward swinging of said handle. This movement of the handle 47 causes longitudinal reciprocation of the link 50 and actuation of a bolster assembly 51.

A pair of stern rollers 52 is adjustably mounted on the rear cross bar 14 by upstanding brackets 53 for coacting with the keel rollers, particularly the rollers 38, to facilitate loading and unloading of the boat B. As shown, and dependent upon the boat contour, the stern rollers 52 may project above the keel rollers and are disposed adjacent the frame members 11. The bolster assembly 51 is adapted to lift the stern portion of the boat out of engagement with the rollers 52 and one or more of the rollers 38 and/or relieve and distribute the weight carried by said rollers for supporting said boat (Fig. 3). When it is desired to load or unload the boat, the bolster assembly is lowered to permit engagement of the rollers 38 and 52 by the keel and hull of said boat. The assembly 51 includes a tubular member or tube 54, which may be rectangular in cross-section, extending transversely between the frame members and having a trunnion or pivot pin 55 secured in and projecting from each end thereof. As shown in Fig. 6, U-shaped bearings 56 are confined between the flanges of the frame members and have the pivot pins 55 journaled therein for rotatably supporting the tube 54. The link 50 has its rear end pivotally connected at 57 to an apertured ear or lug 58 depending from the medial portion of the tube whereby said tube is rocked about its longitudinal axis upon receiprocation of said link.

An upstanding bracket 59, which may be hat-shaped in cross-section, is adjustably secured to the rear surface of each end portion of the tube 54 by bolts or other fasteners 60 and has a bifurcated upper portion 61 extending above the frame members 11 (Figs. 5 and 6). The brackets 59 are disposed inwardly of the stern rollers 52 and have longitudinally-extending bolsters or hull-engaging elements 62 pivotally attached at 63 to the upper extremities of their bifurcated portions 61. In order to permit longitudinal adjustment of the bolsters 62, several openings 64 may be formed in the intermediate portion of each bolster. As shown in Fig. 2, the bolsters extend rearwardly beyond the frame and may have their front ends terminating short of the cross bar 13. Suitable cushioning material 65 may overlie the upper surfaces of the bolsters. In order to limit counter-clockwise or forward pivoting of the bolster assembly 51, a lug or stop 66 is secured to the front surface of each bearing 56 and projects inwardly therefrom contiguous the upper flange of each frame member 11 for engagement by the front surface of the tube 54. As a result, the brackets 59 are prevented from swinging past the perpendicular position shown in Fig. 5. Due

to the pivotal mounting of the bolsters 62 at 63, said bolsters are free to pivot relative to the brackets 59 and to each other and may swing downwardly and rearwardly to facilitate initial loading and terminal unloading of the boat. It is noted that the bolsters are disposed above the stern rollers 52 when the tongue 28 is locked in alinement with the frame by the latch assembly 40 and are pivoted to a position below said rollers when said assembly is released or unlocked.

The foregoing description of the invention is explanatory thereof and various changes in the size, shape and materials, as well as in the details of the illustrated construction may be made, within the scope of the appended claims, without departing from the spirit of the invention.

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

1. A boat trailer including a frame, a tongue pivotally attached to the front portion of the frame, latch means for fastening the tongue and frame against relative movement, boat supporting means on said frame, and boat engaging means mounted on said frame for movement into and out of engagement with a boat resting upon the boat supporting means, the latch means having connection with the boat engaging means for imparting movement thereto upon fastening and unfastening of said latch means.

2. A boat trailer as set forth in claim 1 wherein the boat supporting means includes rollers, the boat engaging means including a pair of spaced elements.

3. A boat trailer as set forth in claim 1 wherein the boat engaging means is pivotally mounted on the frame, and link means connecting said means to the latch means.

4. A boat trailer as set forth in claim 3 wherein the boat engaging means includes a pair of spaced elements, and upright brackets pivotally connecting the elements to the frame.

5. A boat trailer including a tiltable frame, a tongue pivotally attached to the front portion of the frame, a latch for fastening the tongue and frame against relative movement, boat supporting rollers on the frame, bolsters extending longitudinally of said frame for engagement with a boat supported by the rollers, means pivotally mounting the bolsters on said frame for movement into and out of engagement with the boat, and a link connecting the mounting means to the latch for pivoting said bolsters upon fastening and unfastening of said latch.

6. A boat trailer as set forth in claim 5 wherein the bolster mounting means includes a cross member rotatably mounted on the frame and connected to the link, and upright brackets connecting the bolsters to the cross member.

7. A boat trailer as set forth in claim 6 wherein one of the brackets is secured to each end portion of the cross member, one of the bolsters being pivotally attached to each bracket for movement relative thereto and to each other.

8. A boat trailer as set forth in claim 5 wherein the frame includes a pair of spaced longitudinal members at its front portion having a portion of the tongue disposed therebetween, means pivotally attaching the rear end of said tongue to the members for movement about a horizontal axis, the latch means including an arm underlying and pivotally supported by the front portion of said frame for movement about an upright axis and into and out of underlying relation to said members and tongue.

No references cited.