United States Patent [19]

Haberthier

[11] **3,717,356**

[45] **Feb. 20, 1973**

[54] **BOAT TRAILERS**

[76] Inventor: **Wilbert L. Haberthier,** 598 Main St., Limon, Colo. 80828

[22] Filed: **April 5, 1971**

[21] Appl. No.: **130,955**

[52] **U.S. Cl.** ..... **280/414 R**
[51] **Int. Cl.** **B60p 3/10**
[58] **Field of Search** ..... 280/414 R

[56] **References Cited**

UNITED STATES PATENTS

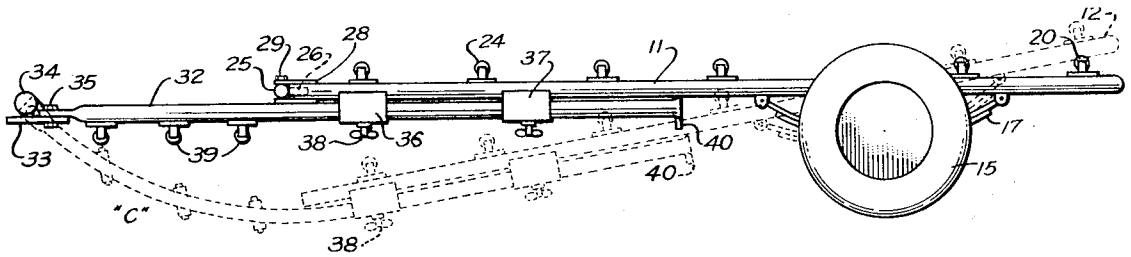
3,004,771	10/1961	Moore	280/414 R X
3,044,646	7/1962	Sperow	280/414 R X
2,761,690	9/1956	Bradley	280/414 R X

Primary Examiner—Leo Friaglia
Attorney—R. H. Galbreath

[57] **ABSTRACT**

A relatively flat chassis frame having two elongated, parallel side elements supported on wheels at their rear extremities and separated from each other at their forward extremities to provide an open forward boat-launching channel between the side elements at the front of the chassis frame. Arcuate bow elements extend forwardly from the side elements and extend inwardly to detachably join each other forwardly of the launching channel to provide means for towing the chassis frame. The open launching channel being provided with removable means for supporting a boat therein for transportation purposes.

9 Claims, 5 Drawing Figures



PATENTED FEB 20 1973

3,717,356

SHEET 1 OF 2

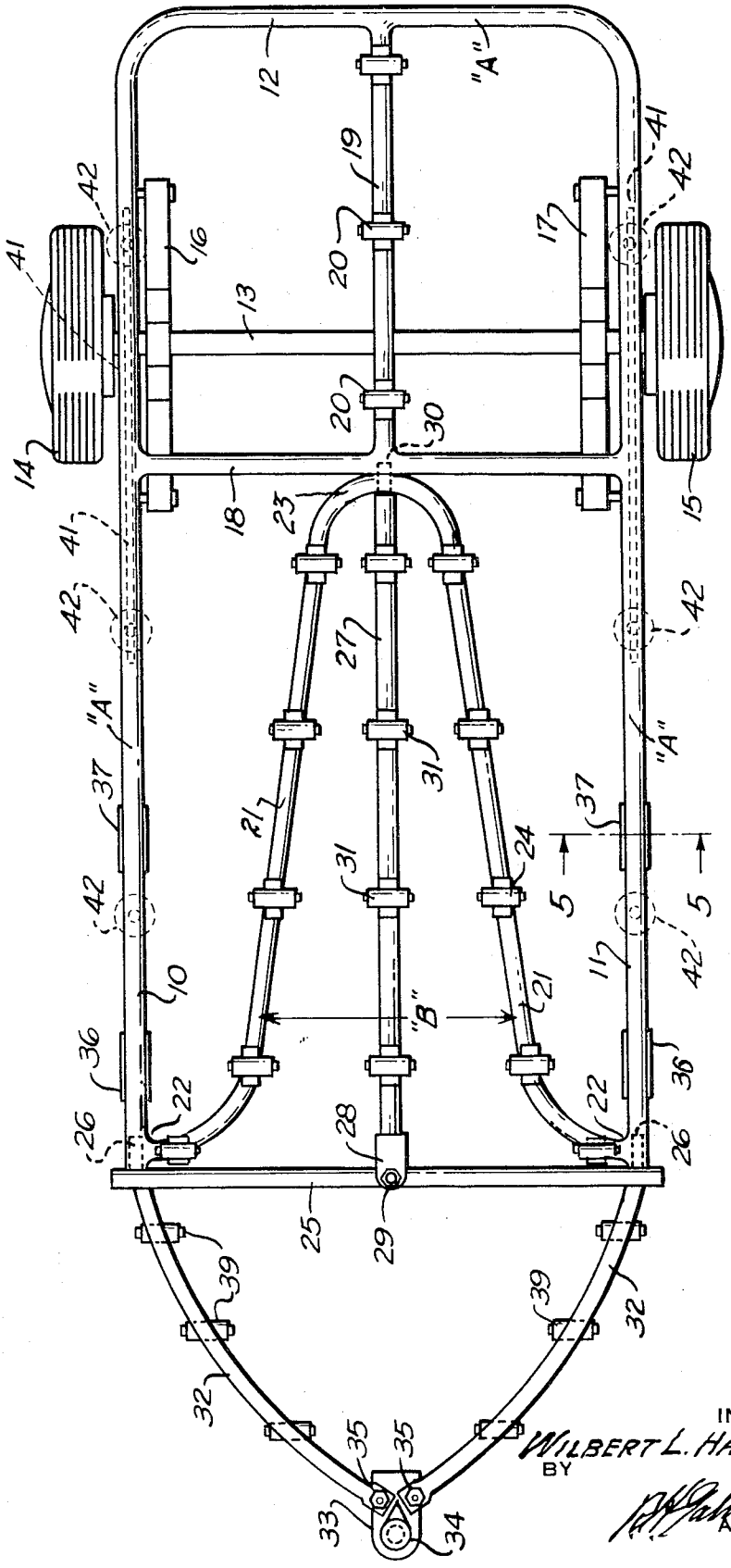


Fig 1

INVENTOR
WILBERT L. HABERTHIER
BY
ATTORNEY

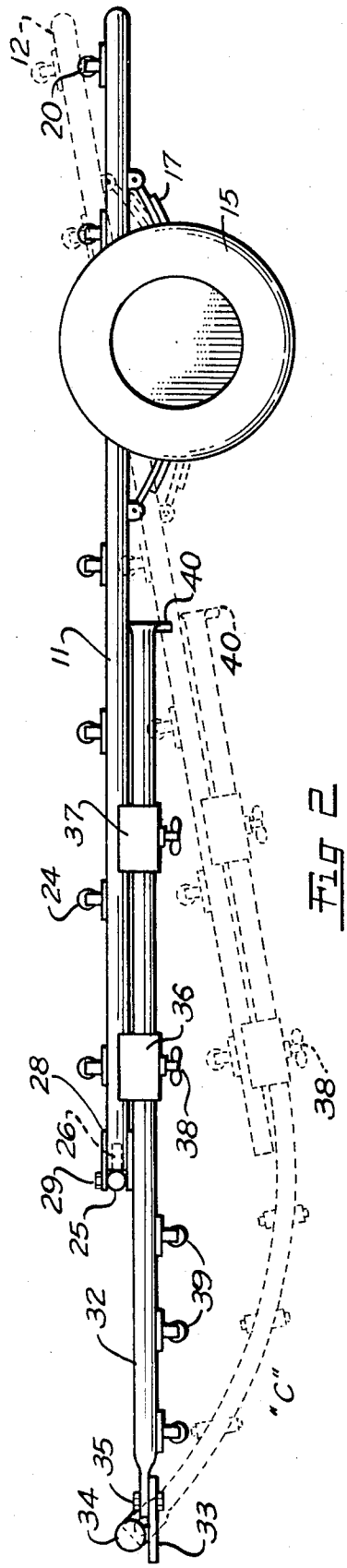


Fig 2

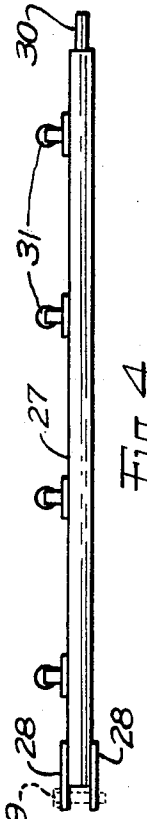


Fig 4

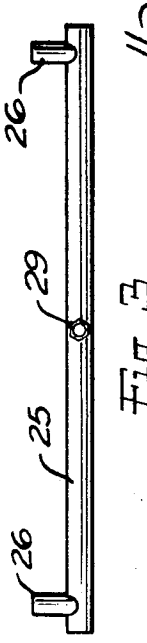


Fig 3

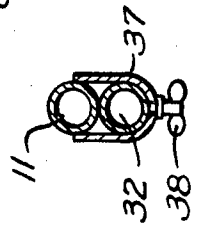


Fig 5

INVENTOR
WILBERT L. HABERTHIER
BY
ATTORNEY

BOAT TRAILERS

This invention relates to a boat trailer of the type to be detachably attached behind a towing vehicle for transporting and launching a boat at desirable water sources. Conventional boat trailers of the drive-on type are usually designed to launch the boat into the water stern first. This has been found to be objectionable since it is exceedingly difficult to initially impel and guide the boat stern first in crowded or surfy areas.

The principal object of the invention is to provide a medial bow channel in the chassis of a boat trailer below the bow of the conveyed boat which can be readily closed to safely and securely support the boat for transportation and which can, when desired, be opened to allow the boat to enter the water bow first.

A further object is to provide a bow-gate structure for the above medial channel which when closed will provide rigid support for towing the boat and which when opened will provide side guides to axially direct the boat bow-first into the water.

A still further object is to provide means for longitudinally adjusting and locking the bow-gate structure at desired forward positions on the chassis so as to accommodate boats of various lengths.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is made to the accompanying drawings which form a part hereof. Like numerals refer to like parts in all views of the drawings and throughout the description.

In the drawings:

FIG. 1 is a top plan view of the improved boat trailer as it would appear in a horizontal or transportation position;

FIG. 2 is a side elevational view of the trailer of FIG. 1 showing in solid line the horizontal or transportation position thereof and in broken line a launching position thereof;

FIG. 3 is a detail top view of a removable bow-cross-tube to be later described;

FIG. 4 is a detail side view of a removable bow-keel-tube to be later described; and

FIG. 5 is an enlarged detail cross section taken on the line 5—5, FIG. 1.

The improved boat trailer employes a flat, tubular chassis frame "A" consisting of two, similar, parallel side tubes **10** and **11** having open forward extremities and joined at their rear extremities in substantially U-shaped relation, by means of a rear tube **12**. The side tubes **10** and **11** are resiliently supported adjacent their rear extremities from a laterally extending conventional axle **13**, provided with conventional ground-engaging wheels **14** and **15**, through the medium of suitable conventional springs **16** and **17**, respectively.

In applying this invention to the above described chassis frame "A," a laterally extending rear cross tube **18** is fixedly extended between the side tubes **10** and **11** adjacent the axle **13** and a fixed stern keel tube **19**, provided with suitable rear keel rollers **20**, is secured between the cross tube **18** and the rear tube **12**.

A bent channel-tube **21** is welded or otherwise secured at its extremities to the side tubes **10** and **11** adjacent their open forward extremities (as shown at **22**) and extends axially inward and rearward to form a semicircular loop **23** at its midpoint. The loop **23** is fixedly mounted at the middle of the rear cross tube **18** to support the channel-tube **21** in flaring relation on opposite sides of an open somewhat V-shaped space or launching channel "B" and in the plane of and between the forward or bow portions of the side tubes **10** and **11**. The channel-tube **21** is provided with spaced-apart bottom rollers **24** to be contacted by the bottom of the boat hull to facilitate longitudinal movement of the boat on the chassis.

A removable forward cross tube **25** connects the open forward or bow extremities of the two side tubes **10** and **11**. The cross tube **25** is preferably provided with a rearwardly extending dowel pin **26** adjacent each of its extremities which enter the open forward extremities of the side tubes **10** and **11** to detachably maintain the tube **25** in place. The forward cross tube **25** temporarily supports the forward extremity of a removable bow keel tube **27**, provided with longitudinally spaced forward keel rollers **31**, in any suitable manner such as through the medium of clevis fittings **28** and a vertical attachment pin **29**. The rear extremity of the bow keel tube **27** is provided with an axial dowel pin **30** which is received in a suitable dowel pin hole formed in the loop **23** of the bent channel tube **21** in alignment with the fixed stern keel tube **19** to medially align the removable bow keel tube **27** with the channel "B," as shown in FIG. **1**.

The forward extremity of the chassis frame "A" is supported in the horizontal or transportation position by means of two arcuately and inwardly bent, tongue tubes **32** the forward extremities of which are individually attached to a conventional, medially positioned, tow plate **33** of the type provided with a conventional tow ball cap **34**, by means of suitable tongue attachment bolts **35**. The forward portions of the tongue tubes **32** extend oppositely and arcuately outward from the tow plate **33** and the rear portions of the tongue tubes are straight and extend tangent to the forward portions in parallel relation through spaced-apart, U-shaped retaining sleeves **36** and **37** which are secured to and positioned below the forward extremities of the side tubes **10** and **11** in any desired manner. The straight portions of the tongue tubes **32** are longitudinally and rotatably adjustable in the retaining sleeves **36** and **37** and may be locked in any desired longitudinal and circumferential position in the retaining sleeves by means of suitable set screws **38**. This allows the overall length of the chassis frame to be preset to accommodate boats of various length. The forward arcuate portions of the tongue tubes **32** are provided with hull side rollers **39** which, when the trailer is in the solid line transportation position of FIG. **1**, are positioned below the tongue tubes **32** in parallel relation with the rollers **20** and **24** previously described. The rear extremities of the straight portions of the tongue tubes **32** are provided with stop lugs **40** to prevent accidental complete withdrawal from the retaining sleeves **36** and **37**.

The chassis frame will be conventionally provided with the usual skid plates possibly positioned as indicated in broken line at **41** and/or with conventional vertical side rollers possibly positioned as indicated in

broken line at 42 to prevent sideward movement of a boat hull on the chassis frame. The latter elements are conventional on boat trailers therefore they have been omitted on the drawings to clarify the illustration of the novel structure of the chassis of the present improved trailer.

For launching, the trailer with the boat in place thereon is directed into the water preferably bow first in any desired manner depending upon the profile of the shore and the rigging and equipment available. The forward extremities of the tongue tubes 32 are released from the tow plate 33 and are turned oppositely upward and locked in place by the set screws 38 in vertical position, as indicated at "C" in FIG. 2, and are then dropped into contact with the water bottom to incline the chassis as shown in broken line in FIG. 2, the incline depending upon the steepness of the bottom. In most cases the boat will now be fully or partially afloat. The clevis fitting 28 can now be pulled forwardly, either by hand or by means of an attached rope, to remove the forward cross tube 25 and the bow keel tube 27 from the chassis and leave the launching channel "B" wide open so that the boat can be easily urged forwardly in the open channel guided by the hull rollers 39 on the two upwardly extending tongue tubes 32. With many types of motor boats the propeller may be started to provide the power to urge the boat forwardly from the open launching channel. While the present invention is particularly advantageous for bow launching it can of course be also employed for stern launching when required.

While a selected form of the invention has been above described, it is understood that mechanical variations and detail substitutions can be made by one skilled in the art without departing from the spirit of the invention.

Having thus described the invention what is claimed and desired to be secured by Letters Patent is:

1. A boat trailer comprising:
   a. a relatively flat boat-supporting chassis frame having two elongated side tubes rigidly connected at their rears in substantially parallel spaced-apart relation by a rear tube so as to extend forwardly in spaced-apart, substantially U-shaped relation to form an open launching channel at the front of said chassis frame;
   b. removable boat-supporting means extending between the forward extremities of said side tubes for supporting a boat in said channel for transportation purposes; and
   c. tongue elements rotatably mounted in the forward extremities of said side tubes and extending forwardly in a horizontal retaining position across said channel for towing purposes and said tongue elements adapted to be rotated to a vertical guiding position at each side of said channel for launching of a boat.

2. A boat trailer as described in claim 1 in which the tongue elements comprise:
   a. a retaining sleeve mounted on the forward extremity of each side tube;
   b. a tow plate axially positioned forward of said side tubes;
   c. a tongue tube slidably and rotatably mounted in each retaining sleeve and extending forwardly and axially inward to a connection with said tow plate so that said chassis frame may be towed by moving said tow plate forwardly; and
   d. means for locking said tongue tubes in any desired position in said retaining sleeves.

3. A boat trailer as described in claim 2 having:
   a. spaced boat guide rollers on said tongue tubes positioned so that they will engage the bottom of a boat when the tongue tubes are in the horizontal position and sides of said boat when the tongue tubes are in a vertical position.

4. A boat trailer as described in claim 1 in which the removable boat supporting means comprises:
   a. a forward cross tube detachably attached to and extending between the forward extremities of said side tubes; and
   b. a removable bow keel-tube supported by said cross tube within said launching channel to support a boat in the channel for transportation.

5. A boat trailer as described in claim 4 having:
   a. spaced-apart keel rollers mounted on said forward cross tube to portably support the keel of a boat positioned in said channel.

6. A boat trailer as described in claim 1 having:
   a. a substantially V-shaped bent tube secured at its two extremities to the forward two extremities of said side tubes, the medial portion of said bent tube extending rearWardly on opposite sides of the axial center line of said launching channel; and
   b. means supporting the medial portion of said bent tube substantially in the plane of said side tubes.

7. A boat trailer as described in claim 6 having:
   a. spaced-apart bottom rollers mounted upon said bent tube, the axes of the latter rollers being positioned at right angles to the axes of said side tubes so as to engage and facilitate axial movement of a boat resting thereon.

8. A boat trailer as described in claim 6 in which the means supporting the medial portion of said bent tube comprises;
   a. a cross tube secured at its extremities to and extending between said side tubes and to which the rearmost medial portion of said bent tube is fixedly mounted.

9. A boat trailer as described in claim 8 having:
   a. a stern tube provided with boat engaging rollers extending rearwardly from said cross tube to support the stern of a boat mounted thereon.

* * * * *