July 24, 1962 L. TWETEN 3,045,849

CAR TOP BOAT LOADER AND CARRYING MECHANISM

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Fig. 1

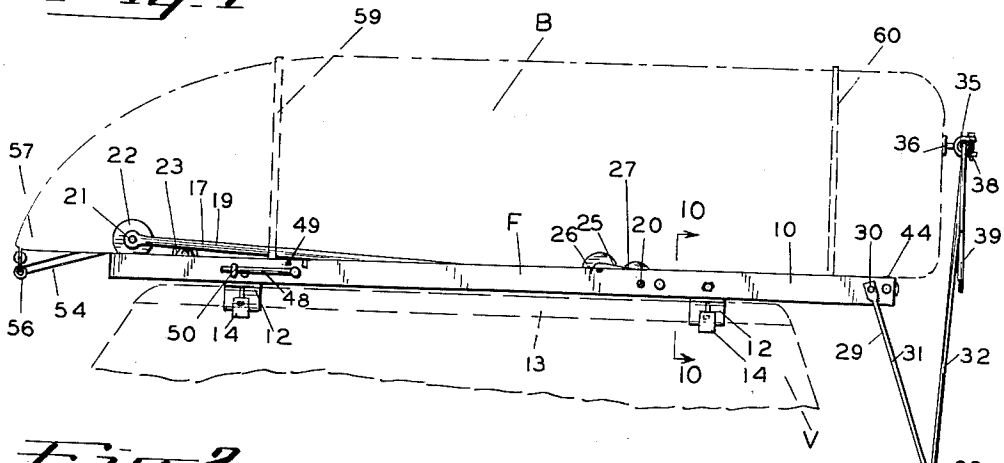


Fig. 2

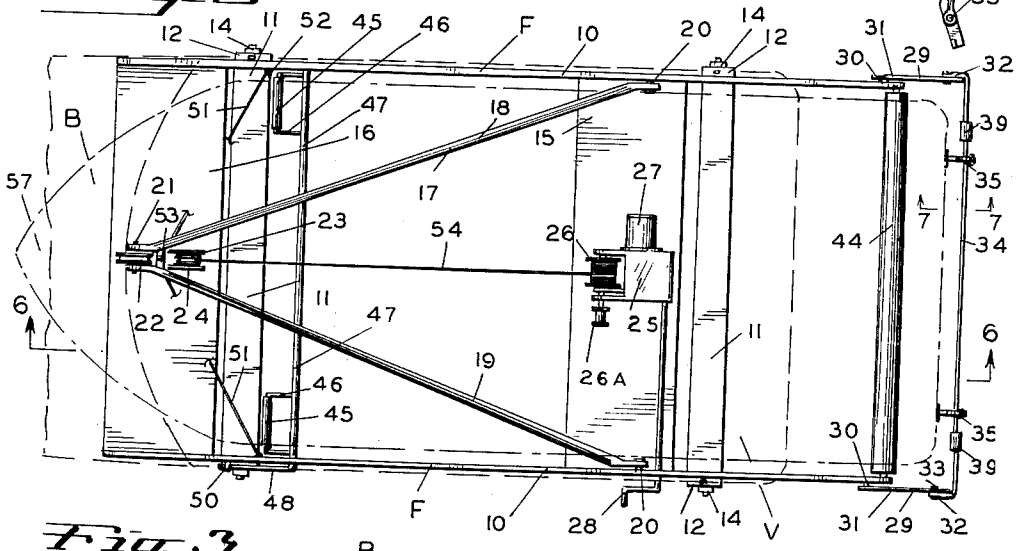
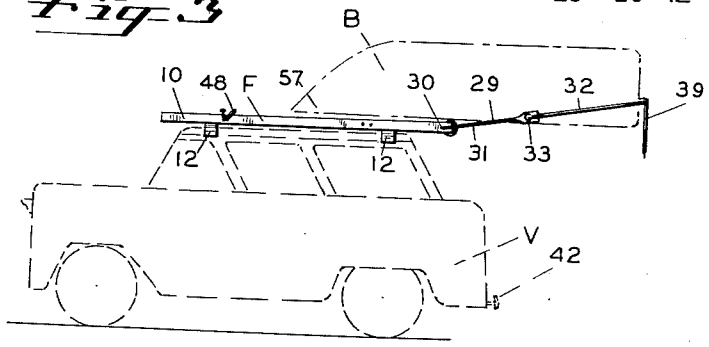


Fig. 3



INVENTOR.
LUDVIG TWETEN

BY

Kimmel & Crowell
ATTORNEYS

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Fig 4

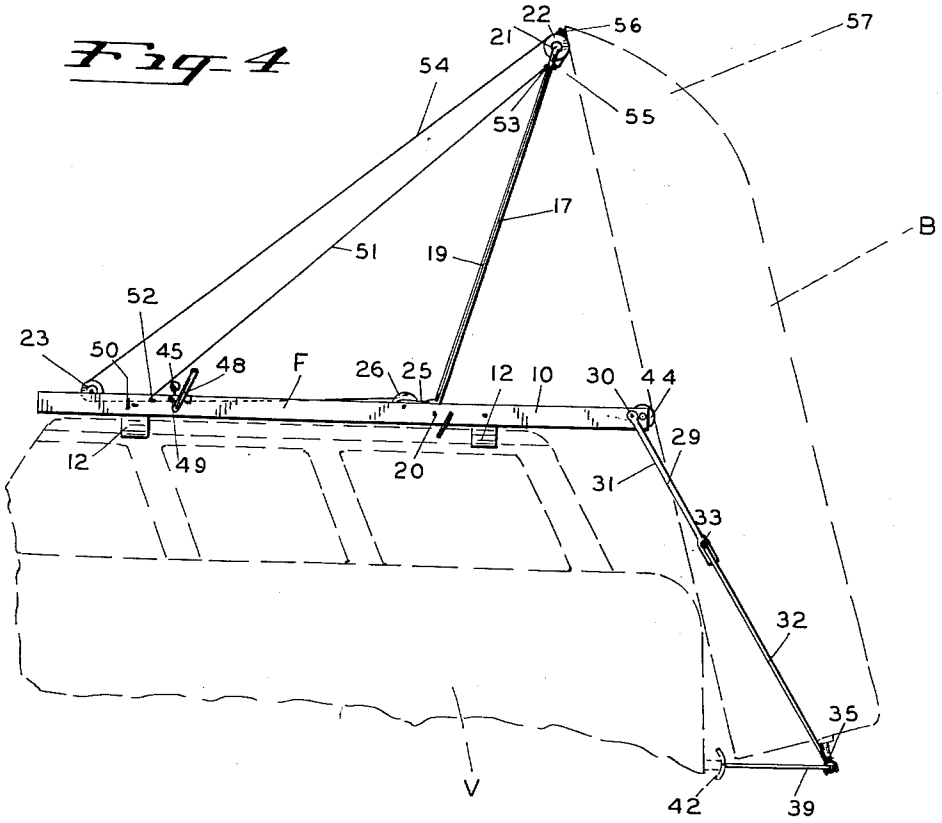
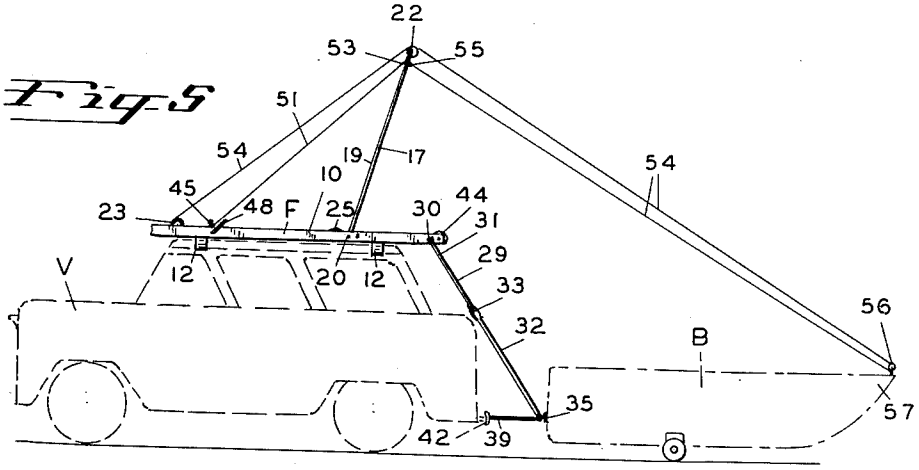


Fig 5



INVENTOR.
LUDVIG TWETEN

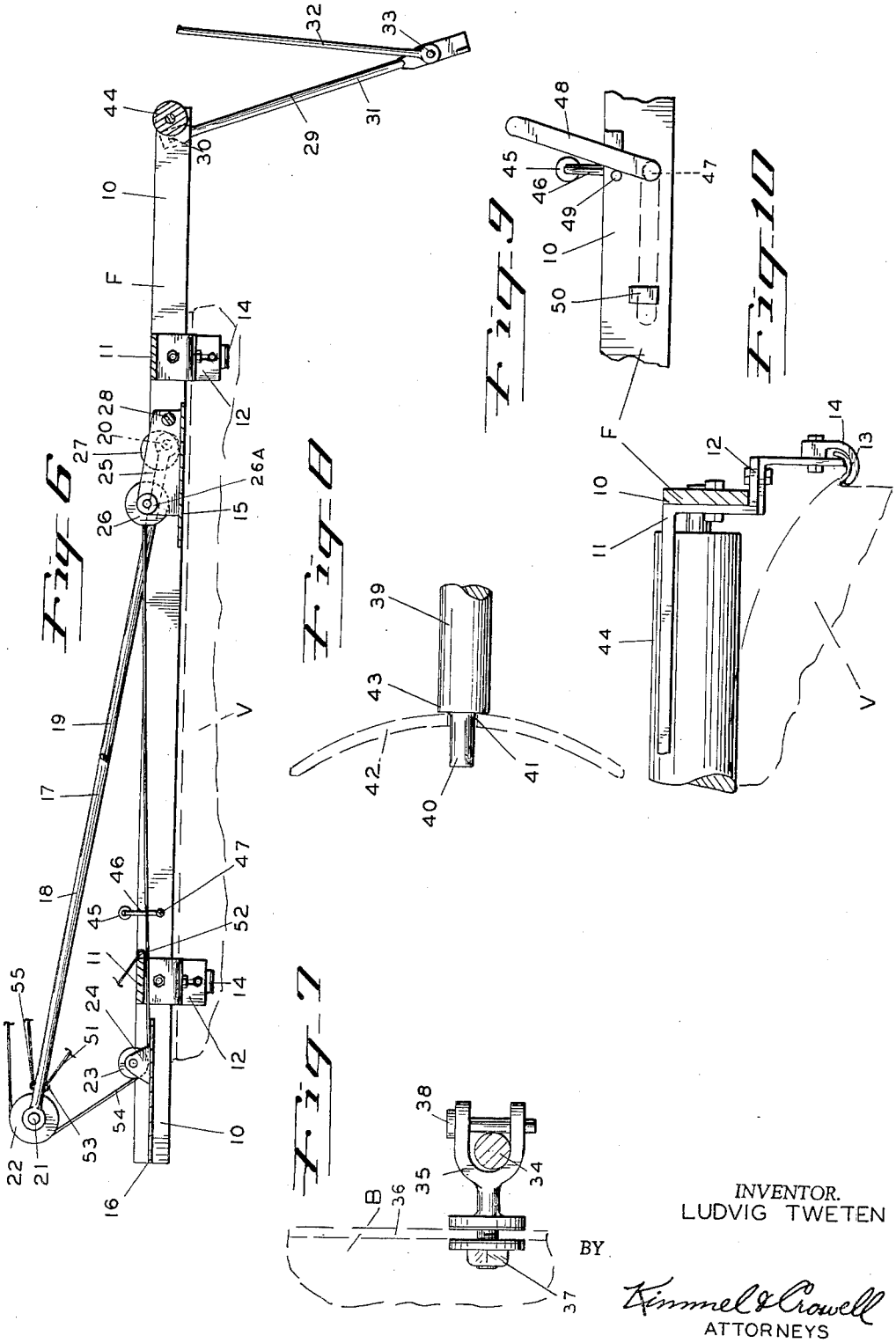
BY

Kimmel & Crowell
ATTORNEYS

July 24, 1962 L. TWETEN 3,045,849

CAR TOP BOAT LOADER AND CARRYING MECHANISM

Filed April 16, 1959 3 Sheets-Sheet 3



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3,045,849

CAR TOP BOAT LOADER AND CARRYING MECHANISM

Ludvig Tweten, Portland, Oreg.

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1 Claim. (Cl. 214—450)

The present invention relates to a car top boat loader and carrying mechanism.

The primary object of the invention is to provide a boat loading and carrying mechanism secured to the top of a motor vehicle wherein one operator can load and unload the boat onto and off the top of the vehicle. The mechanism is designed to lift the boat from the ground or water surface up on to the top of the vehicle, where the boat is easily secured to the mechanism for transportation, and easily removed from the top of the vehicle to the ground or water surface, by a simple hoisting mechanism.

Other objects and advantages will become apparent in the following specification when considered in light of the attached drawings, in which:

FIGURE 1 is a side elevation of the invention illustrating the boat in broken lines in loaded position;

FIGURE 2 is a plan view of the structure shown in FIGURE 1;

FIGURE 3 is a side elevation of the invention which illustrates in broken lines one position of the boat while being removed from the carrying device;

FIGURE 4 is a side elevation of the invention which illustrates in broken lines further position of the boat during the unloading operation;

FIGURE 5 is a side elevation of the invention which illustrates in broken lines the final position of the boat which has been lowered to the ground or water surface;

FIGURE 6 is an enlarged longitudinal sectional view taken on line 6—6 of FIGURE 2, looking in the direction of the arrows;

FIGURE 7 is a fragmentary enlarged sectional view taken on line 7—7 of FIGURE 2, looking in the direction of the arrows;

FIGURE 8 is a fragmentary enlarged side elevation of the lifting and strut mechanism in connection with the bumper of the vehicle;

FIGURE 9 is an enlarged fragmentary side elevation; and

FIGURE 10 is an enlarged fragmentary sectional view, taken on line 10—10 of FIGURE 1, looking in the direction of the arrows.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference character C indicates generally a car top boat loader and carrying mechanism which includes a rectangular frame F. The frame F has a pair of frame members 10, spaced apart and held together by the cross members 11. A foot 12 is secured to each end of each of the cross members 11 to support the frame F. The feet 12 are laterally adjustable, as illustrated in FIGURE 10. The feet 12 are adapted to rest on the drain gutter 13 of the top of a vehicle V, and are held thereto by clips 14. Additional transverse plates 15 and 16 bridge the frame members 10, as best illustrated in FIGURES 2 and 6.

Pivotally mounted to the side rails 10 overlying the plate 15 is an A-frame 17. The A-frame 17 includes upwardly converging legs 18 and 19 having their lower ends pivoted to the frame members 10 by pivot pins 20. The legs 18 and 19 have their upper ends connected together by a transverse pin 21 centrally on which revolves an idler cable pulley 22. An idler cable pulley 23 is journalled in a bracket 24 mounted on the plate 16 intermediate the frame members 10.

A hoisting winch 25 is fixedly secured to the plate 15

and includes a driven drum 26 operated either by an electric motor 27 or by a hand crank 28. A pair of arms 29 each have one of their ends respectively pivotally mounted at 30 to the rear ends of the frame members 10. The arms 29 include an inner arm member 31 and an outer arm member 32, pivotally connected together at 33.

Referring to FIGURE 2 particularly, the outer ends of the arm members 32 are connected together by a transverse bar 34, which may be integral therewith. Referring to FIGURE 7, a pair of laterally spaced apart bifurcated fittings 35 are fixedly secured to the transom 36 of the boat B by means of nuts 37. The bifurcated fittings 35 receive the cross bar 34 therebetween, securing the boat B to the loading mechanism C. The bar 34 is locked in the fittings 35 by locking pins 38.

A pair of struts 39 each have one end pivotally connected to the cross bar 34, referring to FIGURE 8, with a reduced portion 40 formed on their opposite ends to pass through openings 41 located in the bumper 42 of the vehicle V. The penetration of the strut 39 through this opening 41 is limited by the shoulder 43.

Journalled between the frame members 10 of the rear end of the frame F is a roller 44 to receive and support the boat B when loading the same. A pair of axially aligned rollers 45 are journalled on arms 46 fixedly secured to a transverse shaft 47 towards the forward end of the frame F and between the frame members 10. The rollers 45 support the forward end of the boat B while loading or unloading the same.

The shaft 47 is journalled in the frame members 10 and is rotated by a crank 48, referring particularly to FIGURE 9. The rollers 45 are supported in an upright position, as shown in FIGURES 6 and 9, by a stop pin 49 removably inserted through a frame member 10. This will hold the crank 48 in a nearly vertical position while holding the rollers 45 in a raised position. When the rollers 45 are in the lower position, as illustrated in FIGURES 1 and 2, the pin 49 is removed and the crank 48 is supported within the clip 50, the rollers 45 being in the position shown in FIGURES 1 and 2.

In operation the A-frame 17 moves from the position shown in FIGURES 1 and 2 to the position shown in FIGURES 4 and 5. The A-frame 17 is maintained in the position shown in FIGURES 4 and 5 by the guy wires 51, which are secured to the frames 10 at 52 and to the upper end of the A-frame at 53. A hoisting cable 54 is connected to the A-frame at 55 and is trained over a pulley 56 connected to the bow 57 of the boat B. The cable 54 is trained back over the sheave 22 and around the idler pulley 23, thence to the cable drum 26.

Hold down straps 59 and 60, shown in broken lines in FIGURE 1, are connected to the side frames 10 for holding the boat B in place while in transit.

The boat B will first be unloaded from the carrying device C in the following manner. The hold down straps 59 and 60 are released, the crank 48 is raised to the position shown in FIGURES 4, 6 and 9, which will raise the rollers 45 to their upper position, taking the weight of the boat B off of the cross members 11. The operator can now pull the boat B rearwardly to the position shown in FIGURE 3 over the roller 44. This movement is arrested by the action of the arms 29, as shown in FIGURE 3.

Next the operator will pull the stern of the boat B down, as indicated in FIGURE 4, or in some boats the weight of the stern will be sufficient to lower the same. When he does this the boat B will pivot about the roller 44 and the A-frame 17 will be raised to the vertical position as shown in FIGURES 4 and 5 and being held in this position by the guy wires 51. At this time the reduced ends 40 of the struts 39 will be engaged in the

openings 41 of the bumper 42 of the vehicle V, as best illustrated in FIGURES 4 and 8.

The winch 25 will next operate to permit further unreeling of the hoisting cable 54 to lower the bow 57 of the boat B down to the position shown in FIGURE 5. In the event the boat B is lowered over a ground surface, a dolly may be placed under the boat B while being lowered to the position shown in FIGURE 5.

After the boat has been lowered to the position shown in FIGURE 5, the cross shaft 34 will be removed from the bifurcated fittings 36 by removing the locking pins 38, referring to FIGURE 7. The pulley 56 will also be removed from the bow 57 of the boat B so that the cable 54 can be reeled into the hoisting assembly 25, which will allow the A-frame 17 to be lowered to the position shown in FIGURES 1 and 2.

The struts 39 can now be released from the bumper 42 of the vehicle V and the arm assembly 29 folded about its pivot point 33 and then pivoted on the frame members 10 and brought forward where it will lie on the upper surface of the frame F.

The loading of the boat B on to the top of the vehicle V by the mechanism will be just the reverse of that of unloading.

In the loading of the boat on top of the vehicle, moving the same from the position shown in FIGURE 3 may be accomplished by a cable wound around the drum 26A of the winch 25 and secured to the transom 36 of the boat B. Another way that the boat can be moved towards or away from the position shown in FIGURE 3 is by applying a motor drive to the cross roller 44, which will revolve this roller 44 in either direction as required to move the boat in loading or unloading.

Having thus described the preferred embodiment of the invention, it should be understood that numerous structural modifications and adaptations may be resorted to without departing from the scope of the appended claim.

What is claimed is:

A car top boat loader and carrier mechanism comprising a generally rectangular frame having forward and rear ends and adapted to be removably mounted in horizontal relation on the top of a motor vehicle, said rectangular frame including elongated, longitudinal frame members, a roller positioned between said longitudinal frame members at the rear end of said frame, an inner arm member pivotally mounted at one end adjacent the rear end of each of said frame members, an outer arm member pivotally connected at one end to the other end of each of said inner arm members, the transversely extending bar connecting the other ends of said outer arm members, said bar adapted to be removably connected to a boat being loaded or unloaded, a pair of struts pivotally connected at one end to said transversely extending bar in spaced relation to each other, the free ends of said struts adapted to removably engage a bumper on the motor vehicle during boat loading and unloading operation, an A-frame having its legs pivotally connected to said longitudinally frame members intermediate the ends thereof, a first idler pulley positioned between the legs of said A-frame and the apex thereof, a transversely extending shaft journalled in said longitudinal frame members inwardly of the forward end of said frame, a pair of rollers mounted on said transversely extending shaft in spaced relation to each other, a winch mounted on said frame intermediate the ends thereof and between said longitudinal frame members, a second idler pulley mounted on said frame adjacent the forward end thereof and between said longitudinal frame members, a cable on said winch extending therefrom over said second idler pulley, said first idler pulley, and having its free end adapted to be removably secured to the bow of a boat to move the boat into position to be loaded onto said frame, and means secured to said rectangular frame and to said A-frame to limit pivotal movement thereof.

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