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BOAT SUPPORT AND HOLD-DOWN APPARATUS

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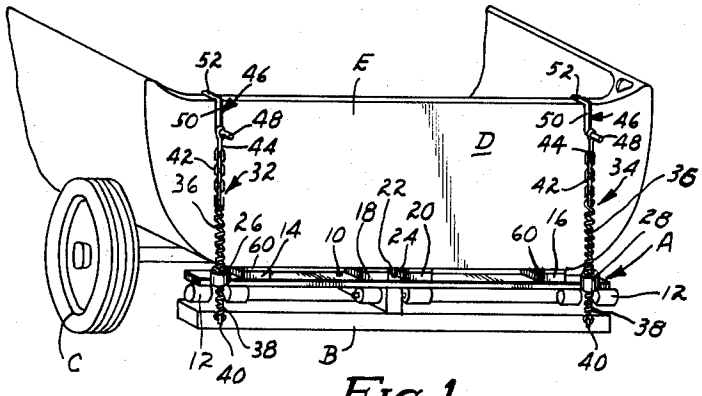


FIG. 1

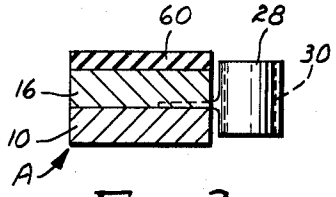


FIG. 3

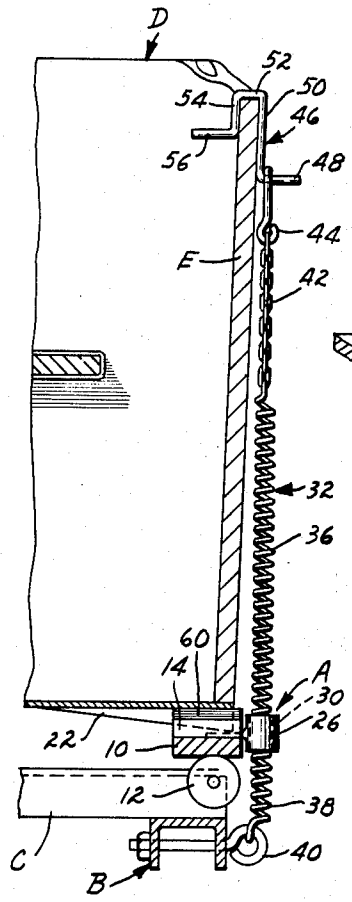


FIG. 2

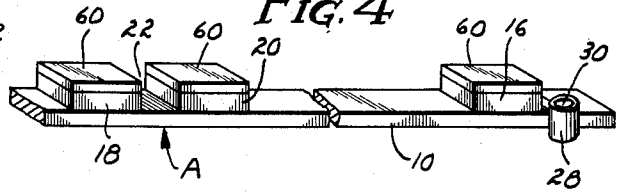


FIG. 4

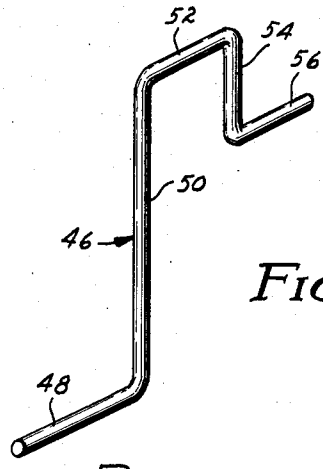


FIG. 5

INVENTOR.
RAYMOND E. BHEND
BY
William F. Woods
ATTORNEY

United States Patent Office

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BOAT SUPPORT AND HOLD-DOWN APPARATUS

Raymond E. Bhend, 6605 Oliver Ave. S.,
Minneapolis 23, Minn.

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This invention relates to apparatus designed to enhance the utility of conventional small boat trailers; in particular, it concerns novel and improved means for securing a boat to such a trailer without sacrificing the inherent riding and other operational characteristics (generally of the two-wheeled variety) of the trailer.

It has been found that conventional small boat trailers adapted to carry light-weight outboard boats are generally deficient in at least two respects; they do not provide proper support for the under surface of all types of boat hulls, particularly regarding the lateral displacement of the hull during its over-the-road travels, and they are awkward to manage during the loading and unloading of the boat. The last mentioned shortcoming is due to the fact that the transom supports generally attached to the trailer are not universally adapted to fit over transoms of varying thicknesses and they do not take into account the difficulties frequently encountered in mounting the hold-down brackets to the transom.

It is, therefore, a primary object of this invention to provide a boat support and hold-down apparatus that will overcome the shortcomings and disadvantages found in the existing prior art.

Another important object of this invention is to provide an improved boat support and hold-down device.

A further object of this invention is to provide a removable boat support and hold-down that can be attached easily to any conventional small boat trailer.

Yet another object of this invention is to provide in a small boat trailer attachment novel and improved means for guiding and mounting the hold-down elements forming part of the invention.

Another object of this invention is to provide a boat support and hold-down that is economical to manufacture, reliable in operation and extremely rugged.

These and other objects and advantages of the invention will become apparent from a consideration of the following detailed description and accompanying drawing wherein a preferred embodiment of the invention is shown by way of illustration only and not by way of limitation.

In the drawing:

FIGURE 1 is a perspective view of the invention as it is mounted upon the rear end of a trailer in engagement with the hull and transom of a boat;

FIGURE 2 is an enlarged fragmentary vertical elevational view, partially in section, illustrating some of the components of the invention;

FIGURE 3 is an enlarged view, partially in section, showing the details of construction of part of the invention;

FIGURE 4 is a fragmentary perspective view illustrating another feature of the invention; and

FIGURE 5 is an enlarged perspective view of one of the transom hooks forming part of the invention.

Looking now at the drawing, and more particularly to FIGURE 1 thereof, the invention, indicated in its entirety by the reference character A, is shown mounted in place upon the rear transverse member B of a conventional two-wheel trailer C. An outboard boat D having a transom E is carried by trailer C and supported and releasably held to trailer C by means of the invention A, as will be explained.

The structural elements of the invention include an elongated generally flat rigid base member **10**, which corresponds in length and width to transverse member B, and is carried thereon in the manner shown in FIGURES 1 and 2. In many cases, transverse member B of trailer C is equipped with rollers **12** to facilitate the loading and unloading of boat D; base member **10** in such a case is placed in an overlying manner upon rollers **12** so that it is substantially in vertical register with member B. Further provided are a pair of outer hull supporting blocks **14**, **16**, which are secured to the upper surface of base member **10** adjacent the ends thereof. Outer hull supporting blocks **14**, **16** are preferably thick enough to accommodate the contour of the hull near its chine but are not so thick as to lift the boat a great distance from the medial portion of base member. To support the boat in the middle, a pair of closely spaced inner hull supporting blocks **18**, **20** are attached to the upper surface of base member **10** on each side of the medial transverse axis thereof. This construction results in a space **22** coincident with the longitudinal axis of the boat into which is received the keelson **24** of the boat. Here again, the thickness of inner hull supporting blocks **18**, **20** is governed according to the average depth of the conventional keelson found in most boats of the type shown in the drawing.

The make-up of base member **10** is completed by the addition of a pair of generally hollow guide members **26**, **28**, each attached thereto adjacent outer hull supporting blocks **14**, **16**, respectively. Guide members **26**, **28** are formed of flat stock resulting in a hollow cylindrical shank **30** (see FIGURE 3) having its axis vertically disposed immediately rearward of the rear vertical edge of base member **10**.

Cooperative with base member **10** and guide members **26**, **28** thereof, are a pair of removable hold-down ties **32** and **34**, which are adapted to secure the boat to the rear end of the trailer. Each hold-down tie **32**, **34**, consists of an elongated tension spring member **36** having a lower end **38** adapted to fit into a hook **40** suitably attached immediately below guide members **26**, **28** to frame member B of the trailer. Attached to the upper end of spring member **36** is an elongated chain or cable connector **42** which terminates in an upper eye **44**. If chain material is used for connector **42**, eye **44** may be dispensed with if desired. Removably attached to eye **44** of connector **42** (or in the case of a chain, the opening in each link thereof may be used) is a transom hook **46**.

Transom hook **46** is adapted to fit over the upper or top edge of boat transom E, and for this purpose, as well as to facilitate ease in the use of the device, it is fashioned according to the configuration more particularly shown in FIGURE 5 of the drawing. As shown therein, transom hook **46** is characterized by a lower horizontal leg **48** which its attachable to connector **42** either through eye **44** or through a link in chain **42**. Connected to and integral with lower horizontal leg **48** is a first vertical leg **50** which is adapted to lie against the outer surface of transom E. Vertical leg **50** terminates at its upper end in an intermediate horizontal leg **52**, the length of which is sufficient to allow it to overlie and engage the top surface of the transom. Connected to and integral with the inner end of intermediate horizontal leg **52** is a second vertical leg **54**, which extends downwardly therefrom into engagement with the inner surface of the boat transom in accordance with the loading imposed upon the provision of an upper horizontal leg **56** connected to and integral with leg **54** thereof. As shown in FIGURE 5, vertical leg **54** is shorter than vertical leg **50** to provide a greater contact of hook **46** with the outside of the transom in accordance with the loading imposed upon the assembly. The lengths of lower horizontal leg **48** and upper horizontal leg **56** are sufficient to allow them to be

easily engaged by hand to facilitate the mounting and removal of hook 46 upon the transom.

In the use of the device, the trailer is loaded in the conventional manner, usually by running the boat thereon when trailer is in the water. The rear end of the boat is lifted up and base member 10 slipped between the rear end of the boat and the transverse frame member 12 of the trailer. Tie downs 32, 34 are fastened at their lower ends into hooks 40 and drawn through guide members 26 and 28. Then hooks 46 are urged into position upon the transom against the spring pressure of spring member 32. The boat is thus securely attached to the trailer with little or no lateral displacement due to the supporting characteristics of inner hull supporting blocks 18, 20 and outer hull supporting blocks 14, 16. Guide members 26 and 28 prevent the unrestricted movement of tie downs 32 and 34 during the movement of the trailer and also prevent damage to the finish of the transom. If desired, hull supporting blocks 14, 16, 18 and 20 may be equipped with resilient contact surfaces (shown by reference character 60 in FIGURE 3).

My invention has been thoroughly tested and found to be entirely satisfactory for the use intended. It will be obvious to those skilled in the art that my invention may be modified by many substitutions and equivalents and that this disclosure is intended to be illustrative only. Therefore, I intend to be limited solely by the scope of the appended claims.

I claim:

1. In boat hull supporting and hold-down apparatus, an elongated rigid generally flat base member adapted to rest upon a rear transverse frame member of a boat trailer, an outer hull supporting block carried on each end of said base member, a pair of relatively closely spaced inner hull supporting blocks carried by said base member on each side of the transverse medial portion thereof, said inner hull supporting blocks being so arranged as to receive and laterally support the keelson of a boat placed upon said base member, a hollow generally vertical guide member attached to said base member adjacent said outer hull supporting blocks, said guide members being positioned generally rearward of the transom of a boat placed upon said base member, a pair of tension spring members each attachable below said guide members to the rear transverse frame member of a trailer and extending vertically through each of said guide members, elongated connecting means carried by the free end of each of said tension spring members, and a transom hook attached to the free end of each of said connecting means.

2. The device of claim 1 wherein said transom hooks each consists of a lower horizontal leg attachable to said connecting means, a first vertical leg connected to and integral with said lower horizontal leg engageable with the outer surface of a boat transom, an intermediate horizontal leg connected to and integral with said first vertical leg, said intermediate horizontal leg being of a length sufficient to overlie and engage the top surface of a boat transom, a second vertical leg of lesser length than said first vertical leg connected to and integral with said intermediate horizontal leg, said second vertical leg being engageable with the inner surface of a boat transom, and an upper horizontal leg connected to and integral with said second vertical leg, said lower and said upper horizontal legs of said transom hook being hand engageable to facilitate the attachment to or release from said device from the transom of a boat.

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