United States Patent [19]

Seiple

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[54] **MOTOR MOUNT FOR AN INFLATABLE BOAT**

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[73] Assignee: **The United States of America as represented by the Secretary of the Navy,** Washington, D.C.

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[52] **U.S. Cl.** ..... **115/.5 B;** 9/2 A

[51] **Int. Cl.** **B63b 7/08**

[58] **Field of Search**..... 115/.5 B, 17; 9/2 A, 11 A; 248/4

[56] **References Cited**

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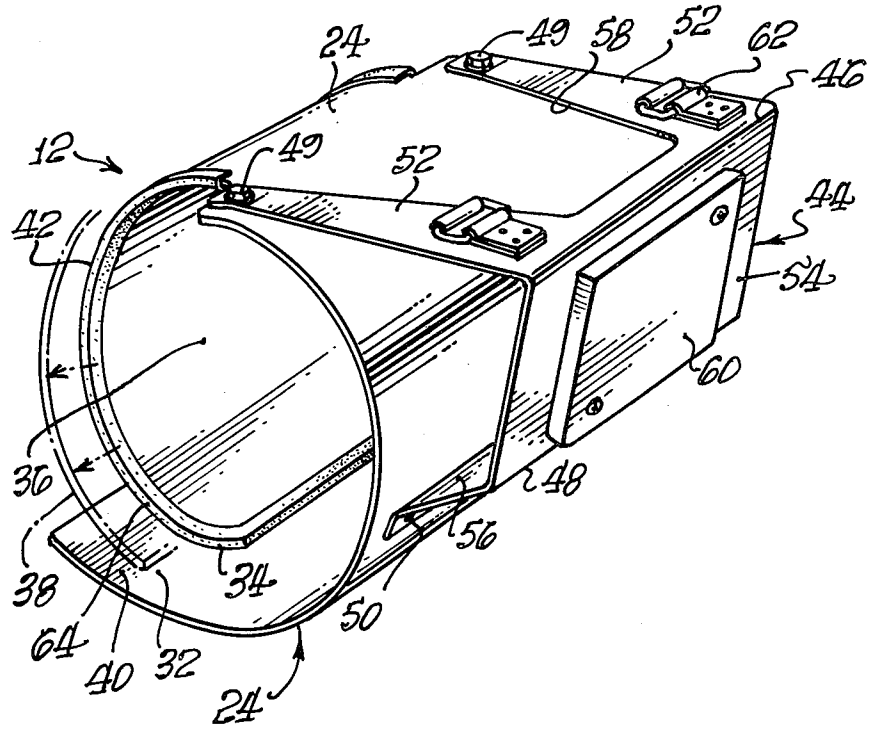
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[57] **ABSTRACT**

A motor mount for an inflatable boat of the type which has a flat bottom, and bow, side, and stern tubular gunwale sections. The mount includes a resilient coiled plate which, in its relaxed condition, is capable of receiving the stern gunwale in a deflated condition. The coiled plate is capable of expanding outwardly when the stern gunwale is inflated into its tubular form inside the coiled plate. Upon inflation of the boat the coiled plate tightly engages both sides of the flat bottom of the boat so that the coiled plate becomes rigidly mounted thereto. Another plate can then be mounted to the coiled plate for receiving a boat motor.

7 Claims, 3 Drawing Figures



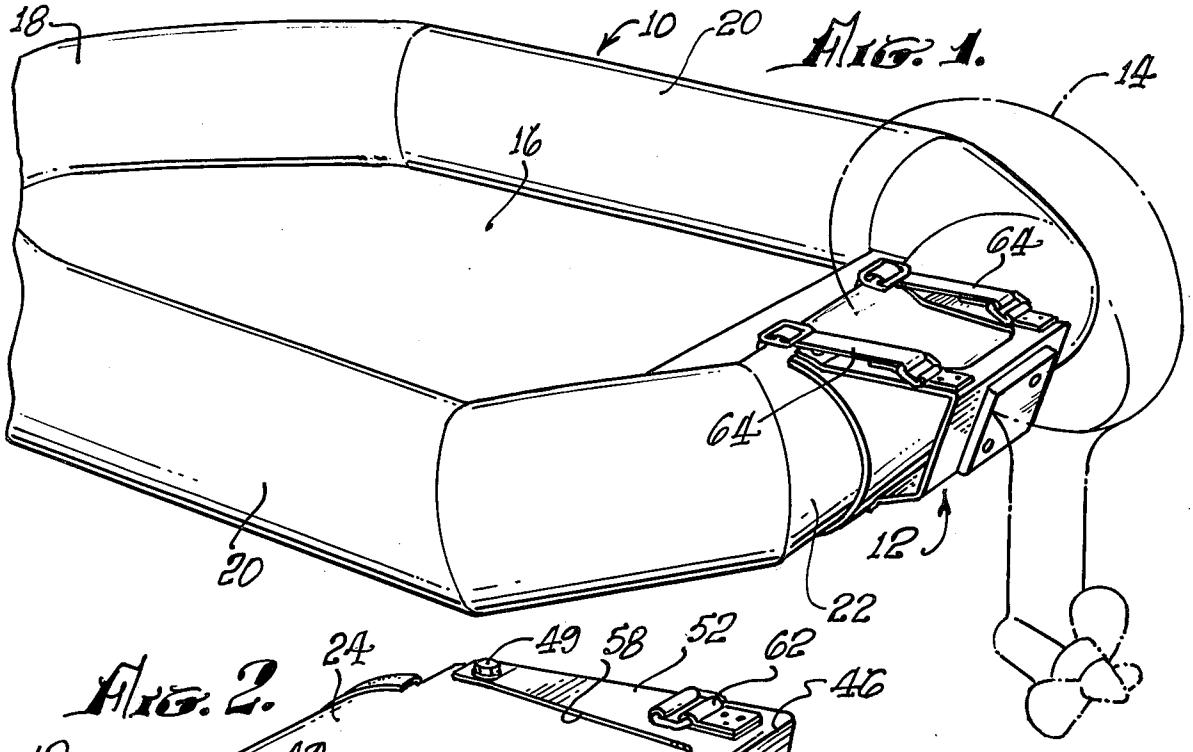


FIG. 1.

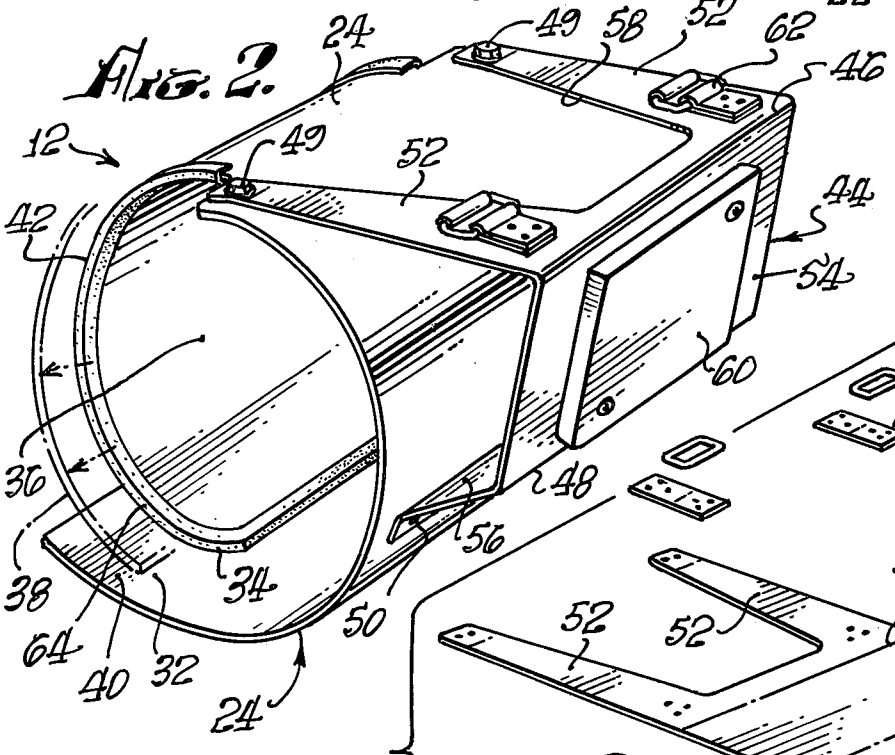


FIG. 2.

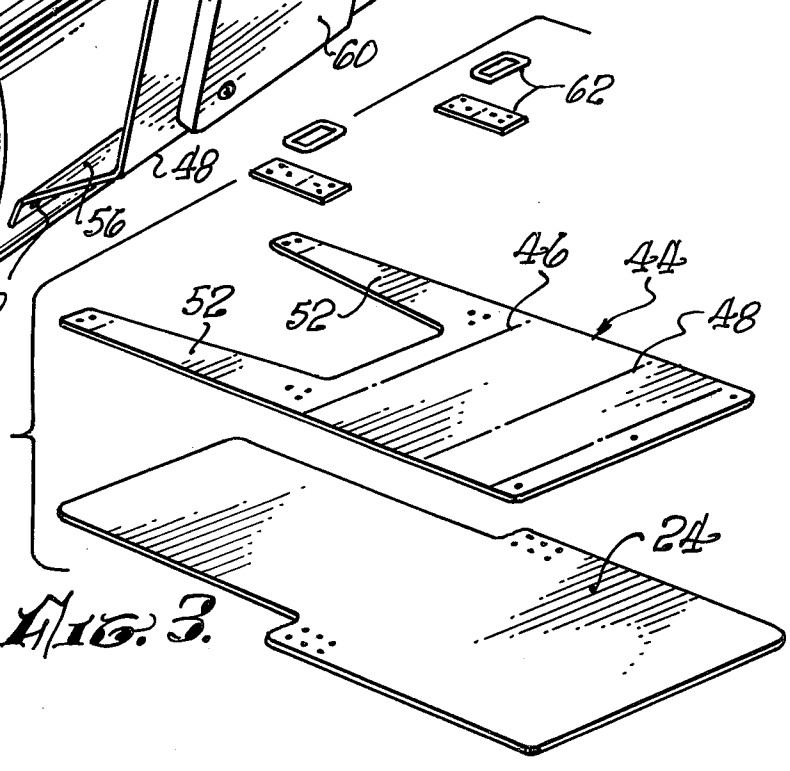


FIG. 3.

MOTOR MOUNT FOR AN INFLATABLE BOAT

STATEMENT OF GOVERNMENT INTEREST

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

BACKGROUND OF THE INVENTION

Over the years, inflatable boats have become quite popular because of their compactness in storage and transportation and their lightness in weight both before and after inflation. These boats are customarily constructed of fabric material which may be a number of impregnated layers which are mounted one upon the other. The sides and stern portions of the boat are usually made in the form of tubular members, and, upon inflation, a very sturdy boat is available for carrying relatively heavy loads.

Before World War II these boats were propelled with oars, and, for this reason, they did not serve the purpose of a sportsman who wanted to travel long distances in the water. Subsequent to World War II, techniques were provided for mounting small motors, such as the commonplace electric-operated propeller motor. With this means of propulsion the inflatable boats grew rapidly in popularity. Generally, there have been no mounts provided which would support the larger gasoline operated motors on an inflatable boat because of the additional weight attributable to such a motor.

In the U.S. Navy there has been identified a need for some sort of a motor mount which could be mounted to inflatable boats for supporting the larger and heavier type gasoline operated motors. In order to obtain the structural strength required a wooden motor mount was utilized which has turned out to be operationally unsuccessful. This type of mount breaks, especially in conditions of swells or surf, which is a common occurrence for many of the Navy operations. Such a failure would often hamper or sometimes completely abort a planned operation.

STATEMENT OF THE INVENTION

There has been a strong need for some sort of motor mount for inflatable boats which will reliably secure the heavier gasoline type boat motors. The present invention has provided such a mount which is capable of being securely mounted to an inflatable boat of the type which has a flat bottom and bow, side, and stern tubular gunwale sections. The motor mount includes a resilient coiled plate which, in its relaxed condition, is capable of receiving the stern gunwale in a deflated condition. The coiled plate is capable of expanding outwardly when the stern gunwale is inflated into its tubular form inside the coiled plate. The coiled plate will, upon expansion, tightly engage both sides of the flat bottom of the boat so that the coiled plate becomes rigidly mounted to the boat and is capable of supporting of supporting a relatively heavy motor. Means can then be mounted to the coiled plate for receiving the boat motor. The motor mount is uniquely constructed so as to enable it's manufacture at a low cost.

STATEMENT OF THE OBJECTS OF THE INVENTION

An object of the present invention is to overcome the aforementioned problem associated with prior art motor mounts for inflatable boats.

Another object is to provide a motor mount for the stern tubular gunwale of an inflatable boat wherein the mount can be attached more securely than prior art mounts.

A further object is to provide a motor mount for an inflatable boat wherein the mount is adapted to receive the tubular stern gunwale portion of the boat in its deflated condition and will tightly grab and secure itself to the bottom portion of the boat when the tubular stern gunwale portion is inflated.

Still another object is to provide a low-cost, lightweight, easy to manufacture motor mount for an inflatable boat which is more securely mounted to the boat when the boat is inflated.

These and other objects of the invention will become more readily apparent from the drawings when taken with the ensuing specification.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an isometric view of an inflatable boat with the motor mount shown in place and a motor shown in phantom.

FIG. **2** is an isometric view of the motor mount removed from the boat in its relaxed condition, and in phantom it is shown in its expanded condition which it assumes when mounted on an inflated boat.

FIG. **3** is an unassembled isometric view of the various components of the motor mount before any bending process in the manufacturing thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawing wherein like reference numerals designate like or similar parts throughout the several views there is illustrated in FIG. **1** an inflatable boat **10** upon which there is mounted the motor mount **12.** The motor mount, in turn, is capable of supporting a boat motor **14.** The inflatable boat is the type which includes a flat bottom **16** which is surrounded by bow, side, and stern tubular gunwale sections **18, 20** and **22,** respectively. The bottom **16** of the boat may be rubberized fabric or may be a thin piece of aluminum or wood as desired.

As illustrated in FIG. **2,** the motor mount **12** may include a resilient coiled plate **24.** As illustrated in FIG. **2,** the resilient coiled plate **24** has bottommost end portions **32** and **34** which are spaced from one another when when the coiled plate **24** is in its relaxed condition. In the relaxed condition, which is illustrated in full in FIG. **2,** the end portions **32** and **34** enable the insertion of the tubular stern gunwale section **22** within the interior **36** of the coil when the stern gunwale is in its deflated condition. While a spacing between the end portions **32** and **34** is desirable in the preferred embodiment it should be understood that the end portions **32** and **34** could engage one another and could be sprung inwardly for insertion of the deflated stern gunwale section **22.** However, the described spacing affords a much easier insertion of the inflatable stern portion **22** of the boat into the interior area **36.**

As illustrated in phantom in FIG. **2,** the resilient coiled plate **24** is capable of expanding outwardly to phantom position **38** when the tubular stern gunwale **22** is fully inflated into its tubular form within the space **36** of the coiled plate. In this position the bottommost portion **34** of the inside coil moves downwardly and outwardly so that the bottom **16** of the boat is tightly

engaged at **40** between the two end portions **32** and **34** of the plate throughout a width portion thereof. Accordingly, when the resilient coil is expanded the bottom of the boat is essentially grabbed by the expanded coiled plate so as to provide a unique retention and improved securing of the motor mount to the stern gunwale portion of the boat.

It is preferable that the coiled plate **24** spiral more than 360° so as to provide the desired configuration, as illustrated in FIG. **2.** It has been found satisfactory to construct the coiled plate **24** of aluminum, however, it can be constructed of any type of spring steel which should be stainless when used in an ocean environment. If desired, a rubber molding **42** may be inserted about a portion of the coiled plate **24** for improved retention of this portion to the stern gunwale when inflated to its tubular condition.

A motor receiving means may be mounted to the coiled plate **24** for accepting the motor **14.** This motor receiving means may be a plate **44** which is bent in two locations, namely, **46** and **48.** The plate **44** may be fixed at a top end to the coiled plate **24** by the bolt and nut combinations **49,** and the bottom end of the plate **44** may be fixed to the coiled plate by any suitable means such as rivets **50.** The bending of the plate provides a top portion **52,** a slightly inwardly directed portion **54,** and a slightly downwardly directed portion **56.** The top portion **52** is provided with a cutout **58** so that the mounting brackets (not shown) of the motor can be slipped down on both sides of the aft portion **54** of the bent plate. In order to give thickness to this aft portion a block **60** may be mounted thereto by any suitable means. Secured to the top portion **52** of the bent plate on each side thereof there are strap fasteners **62** which are adapted to receive straps **64.** The straps **64** are then secured at their opposite ends (not shown) to brackets (not shown) which are secured to the forward portion of the stern gunwale **22.**

FIG. **3** illustrates the various components of the motor mount before they are bent and assembled. It can be seen from this figure that the components are simple and after a simple bending operation can be easily secured together to provide the desired motor mount.

OPERATION OF THE INVENTION

In the operation of the invention the tubular stern gunwale portion **22** of the boat is inserted into the coiled plate **24.** During this insertion the coiled plate is in its relaxed open condition and the stern gunwale portion is in its deflated condition. This enables quick and easy insertion of the stern gunwale **22** into the space **36** of the motor mount. The boat is then inflated which causes the stern gunwale **22** to assume its expanded tubular configuration. This inflation expands the coiled plate **24** to the phantom position **38,** as illustrated in FIG. **2,** so that the two end portions of the coil tightly engage the bottom **16** of the boat at **40** and ensure tight retention for mounting of the motor **14.**

Obviously, many modifications and variations of the present invention are possible in the light of the above teachings, and, it is therefore understood that within the scope of the disclosed inventive concept, the invention may be practiced otherwise than specifically described.

What is claimed is:

1. A motor mount for an inflatable boat of the type having a flat bottom, bow, and inflatable side and stern tubular gunwale sections comprising:

a resilient coiled plate which, in its relaxed condition, is capable of receiving the stern gunwale in a deflated condition;

said coiled plate being capable of expanding outwardly when the stern gunwale is inflated into its tubular form inside the coiled plate;

said coiled plate upon expansion tightly engaging both bottom and top surfaces of the flat bottom of the boat so that the coiled plate becomes rigidly mounted to the boat; and means mounted to the coiled plate for receiving a boat motor.

2. A motor mount as claimed in claim **1** including: said plate spiralling more than 360°.

3. A motor mount as claimed in claim **1** including:

the motor receiving means being a bent plate which is fixed at its opposite ends to the coiled plate so as to extend aft thereof;

said bent plate having a top portion which is cut out to receive the motor brackets; and

means for connecting straps to said top portion of the bent plate.

4. A motor mount as claimed in claim **3** including: said plate spiralling more than 360°.

5. A motor mount for an inflatable boat of the type having a flat bottom, and inflatable bow, side, and stern tubular gunwale sections comprising:

a resilient coiled plate which has inside and outside end portions and an open space along the central axis thereof;

the outside surface of the inside end portion being capable of engaging the inside surface of the outside end portion along a line which is substantially parallel to the central axis of the coiled plate;

said coiled plate being capable of receiving the stern gunwale of the boat within said open space in a deflated condition with the flat bottom of the boat extending between the inside and outside end portions of the coiled plate in a plane which includes the line of engagement; and

means mounted to the coiled plate for receiving a boat motor,

whereby upon insertion of the stern gunwale in a deflated condition in the coiled plate and then inflation of the boat, the inside and outside end portions of the coiled plate will tightly grasp top and bottom surfaces of the flat bottom of the boat so as to cinch the motor mount from rotation when a motor is mounted thereon.

6. A motor mount as claimed in claim **5** including: said coiled plate spiralling more than 360°.

7. A motor mount as claimed in claim **6** including:

the motor receiving means being a bent plate which is fixed at its opposite ends to the coiled plate so as to extend aft thereof;

said bent plate having a top portion which is cut out to receive the motor brackets; and

means for connecting straps to said top portion of the bent plate.

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